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(71) Demandeur/Applicant:  
NOVOZYMES A/S, DK  
(72) Inventeurs/Inventors:  
SEGURA, DOROTEA RAVENTOS, DK;  
SALOMON, JESPER, DK;  
JENSEN, JOHANNE M., DK;  
VEJBORG, REBECCA MUNK, DK  
(74) Agent: NORTON ROSE FULBRIGHT CANADA  
LLP/S.E.N.C.R.L., S.R.L.

(54) Titre : COMPOSITIONS DE DETERGENT ET LEURS UTILISATIONS  
(54) Title: DETERGENT COMPOSITIONS AND USES THEREOF

(57) Abrégé/Abstract:

The present invention relates to compositions such as cleaning compositions comprising a mix of enzymes. The invention further relates, use of compositions comprising such enzymes in cleaning processes.

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(71) Applicant: **NOVOZYMES A/S** [DK/DK]; Krogshoejvej  
36, 2880 Bagsvaerd (DK).

(72) Inventors: **SEGURA, Dorotea, Raventos**; Krogshoejvej  
36, 2880 Bagsvaerd (DK). **SALOMON, Jesper**; Krogshoe-  
jvej 36, 2880 Bagsvaerd (DK). **JENSEN, Johanne, M.**;  
Krogshoejvej 36, 2880 Bagsvaerd (DK). **VEJBORG, Re-  
becca, Munk**; Krogshoejvej 36, 2880 Bagsvaerd (DK).

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(54) Title: DETERGENT COMPOSITIONS AND USES THEREOF

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**DETERGENT COMPOSITIONS AND USES THEREOF****Reference to a Sequence Listing**

This application contains a Sequence Listing in computer readable form, which is incorporated  
5 herein by reference.

**Background of the Invention**

The present invention relates to compositions such as cleaning compositions comprising a  
mix of enzymes. The invention further relates, use of compositions comprising such enzymes in  
10 cleaning processes and/or for deep cleaning of biofilm soiling, methods for removal or reduction  
of biofilm related soiling.

**Description of the Related Art**

Enzymes have been used in detergents for decades. Usually a cocktail of various enzymes is  
15 added to detergent compositions. The enzyme cocktail often comprises various enzymes,  
wherein each enzyme targets its specific substrate e.g. amylases are active towards starch stains,  
proteases on protein stains and so forth. Textiles surface and hard surfaces, such as dishes or  
the inner space of a laundry machine enduring a number of wash cycles, become soiled with  
many different types of soiling which may compose of proteins, grease, starch etc. One type of  
20 soiling may be organic matter, such as biofilm, EPS, etc. Organic matter composes different  
molecules such as polysaccharides, extracellular DNA (eDNA), and proteins. Some organic  
matter composes an extracellular polymeric matrix, which may be sticky or glueing, which when  
present on textile, attracts soils and may cause redeposition or backstaining of soil resulting in  
a greying of the textile. Additionally, organic matters such as biofilms often cause malodor issue  
25 as various malodor molecules can be adhered by the polysaccharides, extracellular DNA (eDNA),  
and proteins in the complex extracellular matrix and be slowly released out to cause consumer  
noticeable malodor issue.

Enzymes having hexosaminidase activity include Dispersins such as Dispersin B (DspB),  
which as described is  $\beta$ -N-acetylglucosaminidases belonging to the Glycoside Hydrolase 20  
30 family. Enzymes having hexosaminidase activity include chitinase and the use of such enzymes  
is described in WO9850512 (Proctor and Gamble). WO04061117 A2 (Kane Biotech INC)  
describe compositions comprising DspB for reducing and preventing biofilm caused by poly-N-

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acetylglucosamine-producing bacteria and describes the use of the compositions comprising DspB for reduction/ removing biofilm on medical devices and for wound care.

WO 2015/155350 (Novozymes A/S) discloses the use of a polypeptide having DNase activity for preventing, reducing or removing a biofilm component e.g. DNA from an item, wherein the polypeptide is obtained from a fungal source, such as *A. oryzae* and the item is a textile.

WO 2014/087011 (Novozymes A/S) discloses the use of a polypeptide having DNase activity for preventing, reducing or removing a biofilm component e.g. DNA from an item, wherein the polypeptide is obtained from a bacterial source such as *Bacillus*.

WO 2017/059082 (Novozymes A/S) discloses the use of a polypeptide having DNase activity for preventing, reducing or removing a biofilm component e.g. DNA from an item.

There is still a need for cleaning compositions, which effectively prevent, reduce or remove components of organic soiling an effect also described in the present application as "deep cleaning". The present invention provides new compositions fulfilling such need.

## Summary of the Invention

In a first aspect, the present invention relates to a cleaning composition comprising a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin and a cleaning component. In a second aspect, the present invention relates to cleaning composition comprising at least 0.01 ppm DNase, at least 0.01 ppm hexosaminidase and one or more cleaning component(s), wherein the cleaning component(s) is selected from a group consisting of:

- a. at least a surfactant;
  - b. a builder;
  - c. a bleach component,
- and combinations thereof.

The present invention further relates to a cleaning composition comprising at least 0.01 ppm DNase, at least 0.01 ppm hexosaminidase and cleaning component(s), wherein the cleaning component(s) is selected from a group consisting of:

- a. 0.1 to 60 wt% of at least one surfactant;
  - b. 0 to 50 wt% of a builder; and
  - c. 0 to 20 wt% of a bleach component,
- and combinations thereof.

The invention further relates to the use of the cleaning composition for deep cleaning of an item, wherein the item is a textile or a surface. The invention further relates to the use of a cleaning composition claims for cleaning of an item, wherein the item is a textile or a surface.

The invention further relates to the use of a cleaning composition comprising a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin and a cleaning component for deep cleaning of an item, wherein the item is a textile or a surface. The

invention further relates to the use of the cleaning composition for deep cleaning of an item, wherein the item is a textile or a surface.

The invention further relates to a method of formulating a cleaning composition comprising adding a DNase, a hexosaminidase and one or more cleaning components.

- 5 The invention further relates to a kit intended for deep cleaning, wherein the kit comprises a solution of an enzyme mixture comprising a DNase and a hexosaminidase. The invention further relates to a kit intended for deep cleaning, wherein the kit comprises a solution of an enzyme mixture comprising a DNase and a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin.
- 10 The invention further relates to a method of deep cleaning of an item, comprising the steps of: a) contacting the item with a wash liquor solution comprising an enzyme mixture comprising at least 0.00001 ppm of a DNase, at least 0.00001 ppm of a hexosaminidase and a cleaning component, wherein the cleaning component comprises at least a surfactant; optionally a builder, and optionally a bleach component; and b) optionally rinsing the item, wherein the item is preferably
- 15 a textile. The invention further relates to a method of deep cleaning an item, comprising the steps of:
- a) contacting the item with a cleaning composition comprising a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin and a cleaning component; and
- 20 b) and optionally rinsing the item, wherein the item is preferably a textile.

### Detailed Description of the Invention

Various enzymes are applied in cleaning processes each targeting specific types of soiling such as protein, starch and grease soiling. Enzymes are now standard ingredients in detergents for

25 laundry and dish wash. The effectiveness of these commercial enzymes provides cleaning compositions such as detergents which removes much of the soiling. However, organic matters such as EPS (extracellular polymeric substance) comprised in much biofilm constitute a challenging type of soiling due to the complex nature of such organic matters. None of the commercially available cleaning compositions effectively remove or reduce EPS and/or biofilm

30 related soiling. Biofilm may be produced when a group of microorganisms' cells stick to each other or stick to a surface, such as a textile, dishware or hard surface or another kind of surface. These adherent cells are frequently embedded within a self-produced matrix of extracellular polymeric substance (EPS), which constitute 50% to 90% of the biofilm's total organic matter. EPS is mostly composed of polysaccharides (exopolysaccharides) and proteins, but include other

35 macro-molecules such as eDNA, lipids and other organic substances. Organic matter like biofilm may be sticky or glueing, which when present on textile, may give rise to redeposition or backstaining of soil resulting in a greying of the textile. Another drawback of organic matter e.g.

biofilm is the malodor as various malodor related molecules are often associated with organic matter e.g. biofilm. Further, when dirty laundry items are washed together with less dirty laundry items the dirt present in the wash liquor tend to stick to organic matter e.g. biofilm or biofilm components as a result, hereof the laundry item is more "soiled" after wash than before wash.

5 This is effect may also be termed re-deposition.

The composition of the invention is preferably a cleaning composition, the composition comprises at least one DNase and at least one GH20 glycosyl hydrolase. Examples of useful DNases and glycosyl hydrolase are mentioned below in the sections "Polypeptides having DNase activity" and "Polypeptides having hexosaminidase activity" respectively.

10 The compositions of the invention comprising a blend of DNase and GH20 glycosyl hydrolase and are effective in reducing or removing organic components and soiling from organic matter.

#### Polypeptides having DNase activity

15 The term "DNase" means a polypeptide having DNase activity that catalyzes the hydrolytic cleavage of phosphodiester linkages in a DNA backbone, thus degrading DNA. The term "DNases" and the expression "a polypeptide with DNase activity" are used interchangeably throughout the application. For purposes of the present invention, DNase activity is determined according to the procedure described in the Assay I or IV.

20 Preferably the DNase is selected from any of the enzyme classes E.C. 3.1.21.X, where X = 1, 2, 3, 4, 5, 6, 7, 8 or 9, e.g. Deoxyribonuclease I, Deoxyribonuclease IV, Type I site-specific deoxyribonuclease, Type II site-specific deoxyribonuclease, Type III site-specific deoxyribonuclease, CC-preferring endo-deoxyribonuclease, Deoxyribonuclease V, T(4) deoxyribonuclease II, T(4) deoxyribonuclease IV or E.C. 3.1.22.Y where Y = 1, 2, 4 or 5, e.g. Deoxyribonuclease II, Aspergillus deoxyribonuclease K(1), Crossover junction endo-deoxyribonuclease, Deoxyribonuclease X.

Preferably, the polypeptide having DNase activity is obtained from a microorganism and the DNase is a microbial enzyme. The DNase is preferably of fungal or bacterial origin.

30 The DNase may be obtainable from Bacillus e.g. *Bacillus*, such as a *Bacillus licheniformis*, *Bacillus subtilis*, *Bacillus sp-62451*, *Bacillus horikoshii*, *Bacillus sp-62451*, *Bacillus sp-16840*, *Bacillus sp-62668*, *Bacillus sp-13395*, *Bacillus horneckiae*, *Bacillus sp-11238*, *Bacillus cibi*, *Bacillus idriensis*, *Bacillus sp-62520*, *Bacillus sp-16840*, *Bacillus sp-62668*, *Bacillus algicola*, *Bacillus vietnamensis*, *Bacillus hwajinpoensis*, *Bacillus indicus*, *Bacillus marisflavi*, *Bacillus luciferensis*, *Bacillus sp. SA2-6*.

35 The DNase may also be obtained from any of the following *Pyrenochaetopsis sp.*, *Vibrissea flavovirens*, *Setosphaeria rostrate*, *Endophragmiella valdina*, *Corynespora cassiicola*, *Paraphoma sp. XZ1965*, *Monilinia fructicola*, *Curvularia lunata*, *Penicillium reticulisporum*, *Penicillium quercetorum*, *Setophaeosphaeria sp.*, *Alternaria*, *Alternaria sp. XZ2545*,

*Trichoderma reesei*, *Chaetomium thermophilum*, *Scytalidium thermophilum*, *Metapochonia suchlasporia*, *Daldinia fissa*, *Acremonium* sp. XZ2007, *Acremonium* sp. XZ2414, *Acremonium dichromosporum*, *Sarocladium* sp. XZ2014, *Metarhizium* sp. HNA15-2, *Isaria tenuipes*, *Scytalidium circinatum*, *Metarhizium lepidiotae*, *Thermobispora bispora*, *Sporormia fimetaria*,  
 5 *Pycnidiophora* cf. *dispera*, *Enviromental sample D*, *Enviromental sample O*, *Clavicipitaceae* sp-70249, *Westerdykella* sp. AS85-2, *Humicolopsis cephalosporioides*, *Neosartorya massa*, *Roussoella intermedia*, *Pleosporales*, *Phaeosphaeria* or *Didymosphaeria* *futilis*.

The DNases to be used in a composition of the invention preferable belong to the NUC1 group of DNases. The NUC1 group of DNases comprises polypeptides which in addition to having  
 10 DNase activity, may comprise one or more of the motifs [T/D/S][G/N]PQL (SEQ ID NO 69), [F/L/Y/I]A[N/R]D[L/I/P/V] (SEQ ID NO: 70), or C[D/N]T[A/R] (SEQ ID NO: 71). One embodiment of the invention relates to a composition comprising polypeptides having DNase activity, wherein the polypeptides comprises one or more of the motifs [T/D/S][G/N]PQL (SEQ ID NO 69), [F/L/Y/I]A[N/R]D[L/I/P/V] (SEQ ID NO: 70) or C[D/N]T[A/R] (SEQ ID NO: 71).

The DNases of the invention preferably comprises a NUC1\_A domain [D/Q][I/V]DH (SEQ ID NO 72). In addition to comprising any of the domains [T/D/S][G/N]PQL, [F/L/Y/I]A[N/R]D[L/I/P/V] or C[D/N]T[A/R] the polypeptides having DNase activity, to be used in a composition of the invention, belongs to the NUC1\_A domain and may share the common motif [D/Q][I/V]DH (SEQ ID NO 72). One embodiment the invention relates to compositions comprising polypeptides,  
 20 which comprises one or more motifs selected from the motifs [T/D/S][G/N]PQL, [F/L/Y/I]A[N/R]D[L/I/P/V], C[D/N]T[A/R] and [D/Q][I/V]DH, wherein the polypeptides have DNase activity. The DNases to be added to a composition of the invention preferably belong to the group of DNases comprised in the GYS-clade, which are NUC1 and NUC1\_A DNases further comprising the conservative motifs [D/M/L][S/T]GYSR[D/N] (SEQ ID NO: 73) and/or ASXNRSKG (SEQ ID NO: 74) and which share similar structural and functional properties. The DNases of the  
 25 GYS-clade are preferably obtained from *Bacillus* genus.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide of the GYS clade having DNase activity, optionally wherein the polypeptide comprise one or both of the motifs [D/M/L][S/T]GYSR[D/N] (SEQ ID NO: 73), ASXNRSKG (SEQ ID NO:  
 30 74) and wherein the polypeptide is selected from the group of polypeptides:

- a) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 1,
- b) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 2,
- 35 c) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 3,

d) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 4,

e) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 5,

5 f) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 6,

g) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 7,

10 h) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 8,

i) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 9,

j) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 10,

15 k) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 11,

l) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 12,

20 m) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 13,

n) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 14,

o) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 15,

25 p) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 16,

q) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 17,

30 r) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 18,

s) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 19,

t) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 20,

35 u) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 21,

v) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 22,

w) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 23,

5 x) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 24, and

y) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 25.

10 Polypeptides having DNase activity and which comprise the GYS-clade motifs have shown particularly good cleaning properties e.g. the DNases are particularly effective in removing or reducing components of organic matter, such as biofilm associated DNA, from an item such as a textile or a hard surface.

15 In one embodiment the DNases to be added in a composition of the invention preferably belong to the group of DNases comprised in the NAWK-clade, which are NUC1 and NUC1\_A DNases further comprising the conservative motifs [V/I]PL[S/A]NAWK (SEQ ID NO: 75) or NPQL (SEQ ID NO: 76).

20 In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide of the NAWK-clade having DNase activity, which are NUC1 and NUC1A DNase, wherein the polypeptide comprise one or both of the motifs [V/I]PL[S/A]NAWK (SEQ ID NO: 75) or NPQL (SEQ ID NO: 76) and wherein the polypeptide is selected from the group of polypeptides:

a) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 26,

25 b) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 27,

c) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 28,

d) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 29,

30 e) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 30,

f) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 31,

35 g) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 32,

h) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 33,

i) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 34,

j) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 35,

5 k) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 36,

l) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 37, and

10 m) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 38.

Polypeptides having DNase activity and which comprise the NAWK-clade motifs have shown particularly good cleaning properties e.g. the DNases are particularly effective in removing or reducing components of organic matter, such as biofilm associated DNA, from an item such as a textile or a hard surface.

15 The DNases to be added in a composition of the invention preferably belong to the group of DNases comprised in the KNAW-clade, which are NUC1 and NUC1\_A DNases further comprising the conservative motifs P[Q/E]L[W/Y] (SEQ ID NO: 77) or [K/H/E]NAW (SEQ ID NO: 78).

20 In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide of the KNAW clade having DNase activity, which are NUC1 and NUC1\_A DNases, wherein the polypeptide comprise one or both of the motifs P[Q/E]L[W/Y] (SEQ ID NO: 77) or [K/H/E]NAW (SEQ ID NO: 78), and wherein the polypeptide is selected from the group of polypeptides:

25 a) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 39,

b) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 40,

c) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 41,

30 d) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 42,

e) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 43

35 f) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 44,

g) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 45,

h) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 46,

i) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 47,

5 j) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 48,

k) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 49,

10 l) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 50, and

m) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 51.

Polypeptides having DNase activity and which comprise the KNAW-clade motifs have shown particularly good cleaning properties e.g. the DNases are particularly effective in removing or  
15 reducing components of organic matter, such as biofilm associated DNA, from an item such as a textile or a hard surface.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Bacillus* e.g. obtainable from *Bacillus* sp-62451 and having a sequence identity to the polypeptide shown in SEQ ID NO: 1 of at least 60%, e.g., at least 65%,  
20 at least 70%, at least 75%, at least 80%, at least 81%, at least 82%, at least 83%, at least 84%, at least 85%, at least 86%, at least 87%, at least 88%, at least 89%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in  
25 SEQ ID NO: 1.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Bacillus* e.g. obtainable from *Bacillus horikoshii* and having a sequence identity to the polypeptide shown in SEQ ID NO: 2 of at least 60%, e.g., at least 65%,  
30 at least 70%, at least 75%, at least 80%, at least 81%, at least 82%, at least 83%, at least 84%, at least 85%, at least 86%, at least 87%, at least 88%, at least 89%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in  
SEQ ID NO: 2.

35 In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Bacillus* e.g. obtainable from *Bacillus* sp-62520 and having a sequence identity to the polypeptide shown in SEQ ID NO: 3 of at least 60%, e.g., at least 65%,

at least 70%, at least 75%, at least 80%, at least 81%, at least 82%, at least 83%, at least 84%,  
 at least 85%, at least 86%, at least 87%, at least 88%, at least 89%, at least 90%, at least 91%,  
 at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%,  
 at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by  
 5 up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in  
 SEQ ID NO: 3.

In one embodiment the DNases to be added in the cleaning composition of the invention is a  
 polypeptide obtainable from *Bacillus* e.g. obtainable from *Bacillus* sp-62520 and having a  
 sequence identity to the polypeptide shown in SEQ ID NO: 4 of at least 60%, e.g., at least 65%,  
 10 at least 70%, at least 75%, at least 80%, at least 81%, at least 82%, at least 83%, at least 84%,  
 at least 85%, at least 86%, at least 87%, at least 88%, at least 89%, at least 90%, at least 91%,  
 at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%,  
 at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by  
 up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in  
 15 SEQ ID NO: 4.

In one embodiment the DNases to be added in the cleaning composition of the invention is a  
 polypeptide obtainable from *Bacillus* e.g. obtainable from *Bacillus horikoshii* and having a  
 sequence identity to the polypeptide shown in SEQ ID NO: 5 of at least 60%, e.g., at least 65%,  
 at least 70%, at least 75%, at least 80%, at least 81%, at least 82%, at least 83%, at least 84%,  
 20 at least 85%, at least 86%, at least 87%, at least 88%, at least 89%, at least 90%, at least 91%,  
 at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%,  
 at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by  
 up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in  
 SEQ ID NO: 5.

In one embodiment the DNases to be added in the cleaning composition of the invention is a  
 polypeptide obtainable from *Bacillus* e.g. obtainable from *Bacillus horikoshii* and having a  
 sequence identity to the polypeptide shown in SEQ ID NO: 6 of at least 60%, e.g., at least 65%,  
 at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%,  
 at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect,  
 25 the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature  
 polypeptide shown in SEQ ID NO: 6.

In one embodiment the DNases to be added in the cleaning composition of the invention is a  
 polypeptide obtainable from *Bacillus* e.g. obtainable from *Bacillus* sp-16840 and having a  
 sequence identity to the polypeptide shown in SEQ ID NO: 7 of at least 60%, e.g., at least 65%,  
 35 at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%,  
 at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect,

the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 7.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Bacillus* e.g. obtainable from *Bacillus sp-16840* and having a sequence identity to the polypeptide shown in SEQ ID NO: 8 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 8.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Bacillus* e.g. obtainable from *Bacillus sp-62668* and having a sequence identity to the polypeptide shown in SEQ ID NO: 9 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 9.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Bacillus* e.g. obtainable from *Bacillus sp-13395* and having a sequence identity to the polypeptide shown in SEQ ID NO: 10 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 10.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Bacillus* e.g. obtainable from *Bacillus horneckiae* and having a sequence identity to the polypeptide shown in SEQ ID NO: 11 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 11.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Bacillus* e.g. obtainable from *Bacillus sp-11238* and having a sequence identity to the polypeptide shown in SEQ ID NO: 12 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 12.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Bacillus* e.g. obtainable from *Bacillus cibi* and having a sequence identity to the polypeptide shown in SEQ ID NO: 13 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 13.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Bacillus* e.g. obtainable from *Bacillus sp-18318* and having a sequence identity to the polypeptide shown in SEQ ID NO: 14 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 14.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Bacillus* e.g. obtainable from *Bacillus idriensis* and having a sequence identity to the polypeptide shown in SEQ ID NO: 15 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 15.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Bacillus* e.g. obtainable from *Bacillus algicola* having a sequence identity to the polypeptide shown in SEQ ID NO: 16 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 16.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Enviromental sample J* and having a sequence identity to the polypeptide shown in SEQ ID NO: 17 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 17.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Bacillus* e.g. obtainable from *Bacillus vietnamensis* and having a

sequence identity to the polypeptide shown in SEQ ID NO: 18 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 18.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Bacillus* e.g. obtainable from *Bacillus hwajinpoensis* and having a sequence identity to the polypeptide shown in SEQ ID NO: 19 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 19.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Paenibacillus mucilaginosus* and having a sequence identity to the polypeptide shown in SEQ ID NO: 20 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 20.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Bacillus* e.g. obtainable from *Bacillus indicus* and having a sequence identity to the polypeptide shown in SEQ ID NO: 21 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 21.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Bacillus* e.g. obtainable from *Bacillus marisflavi* and having a sequence identity to the polypeptide shown in SEQ ID NO: 22 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 22.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Bacillus* e.g. obtainable from *Bacillus luciferensis* and having a sequence identity to the polypeptide shown in SEQ ID NO: 23 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%,

at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 23.

5 In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Bacillus* e.g. obtainable from *Bacillus marisflavi* and having a sequence identity to the polypeptide shown in SEQ ID NO: 24 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 24.

10 In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Bacillus* e.g. obtainable from *Bacillus* sp. SA2-6 and having a sequence identity to the polypeptide shown in SEQ ID NO: 25 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 25.

15 In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Pyrenochaetopsis* sp. and having a sequence identity to the polypeptide shown in SEQ ID NO: 26 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 26.

20 In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Vibrissea flavovirens* and having a sequence identity to the polypeptide shown in SEQ ID NO: 27 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 27.

25 In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Setosphaeria rostrate* and having a sequence identity to the polypeptide shown in SEQ ID NO: 28 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ

by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 28.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Endophragmiella valdina* and having a sequence identity to the polypeptide shown in SEQ ID NO: 29 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 29.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Corynespora cassicola* and having a sequence identity to the polypeptide shown in SEQ ID NO: 30 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 30.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Paraphoma* sp. XZ1965 and having a sequence identity to the polypeptide shown in SEQ ID NO: 31 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 31.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Monilinia fructicola* and having a sequence identity to the polypeptide shown in SEQ ID NO: 32 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 32.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Curvularia lunata* and having a sequence identity to the polypeptide shown in SEQ ID NO: 33 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 33.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Penicillium reticulisporum* and having a sequence identity to the polypeptide shown in SEQ ID NO: 34 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 34.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Penicillium quercetorum* and having a sequence identity to the polypeptide shown in SEQ ID NO: 35 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 35.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Setophaeosphaeria sp.* and having a sequence identity to the polypeptide shown in SEQ ID NO: 36 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 36.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Alternaria sp. XZ2545* and having a sequence identity to the polypeptide shown in SEQ ID NO: 37 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 37.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Alternaria* and having a sequence identity to the polypeptide shown in SEQ ID NO: 38 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 38.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Trichoderma reesei* and having a sequence identity to the polypeptide shown in SEQ ID NO: 39 of at least 60%, e.g., at least 65%, at least 70%, at least

75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 39.

5 In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Chaetomium thermophilum* and having a sequence identity to the polypeptide shown in SEQ ID NO: 40 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ  
10 by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 40.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Scytalidium thermophilum* and having a sequence identity to the polypeptide shown in SEQ ID NO: 41 of at least 60%, e.g., at least 65%, at least 70%, at least  
15 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 41.

In one embodiment the DNases to be added in the cleaning composition of the invention is a  
20 polypeptide obtainable from *Metapochonia suchlasporia* and having a sequence identity to the polypeptide shown in SEQ ID NO: 42 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown  
25 in SEQ ID NO: 42.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Daldinia fissa* and having a sequence identity to the polypeptide shown in SEQ ID NO: 43 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least  
30 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 43.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Acremonium sp. XZ2007* and having a sequence identity to the  
35 polypeptide shown in SEQ ID NO: 44 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ

by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 44.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Acremonium dichromosporum* and having a sequence identity to the polypeptide shown in SEQ ID NO: 45 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 45.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Sarocladium sp. XZ2014* and having a sequence identity to the polypeptide shown in SEQ ID NO: 46 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 46.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Metarhizium sp. HNA15-2* and having a sequence identity to the polypeptide shown in SEQ ID NO: 47 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 47.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Acremonium sp. XZ2414* and having a sequence identity to the polypeptide shown in SEQ ID NO: 48 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 48.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Isaria tenuipes* and having a sequence identity to the polypeptide shown in SEQ ID NO: 49 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 49.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Scytalidium circinatum* and having a sequence identity to the polypeptide shown in SEQ ID NO: 50 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 50.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Metarhizium lepidiotae* and having a sequence identity to the polypeptide shown in SEQ ID NO: 51 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 51.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Thermobispora bispora* and having a sequence identity to the polypeptide shown in SEQ ID NO: 52 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 52.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Sporormia fimetaria* and having a sequence identity to the polypeptide shown in SEQ ID NO: 53 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 53.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Pycnidiophora cf. dispersa* and having a sequence identity to the polypeptide shown in SEQ ID NO: 54 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 54.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from Enviromental sample D and having a sequence identity to the

polypeptide shown in SEQ ID NO: 55 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 55.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Enviromental sample O* and having a sequence identity to the polypeptide shown in SEQ ID NO: 56 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 56.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Clavicipitaceae sp-70249* and having a sequence identity to the polypeptide shown in SEQ ID NO: 57 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 57.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Westerdykella sp. AS85-2* and having a sequence identity to the polypeptide shown in SEQ ID NO: 58 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 58.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Humicolopsis cephalosporioides* and having a sequence identity to the polypeptide shown in SEQ ID NO: 59 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 59.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Neosartorya massa* and having a sequence identity to the polypeptide shown in SEQ ID NO: 60 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least

98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 60.

5 In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Rousoella intermedia* and having a sequence identity to the polypeptide shown in SEQ ID NO: 61 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 61.

10 In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Pleosporales* and having a sequence identity to the polypeptide shown in SEQ ID NO: 62 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 62.

15 In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Phaeosphaeria* and having a sequence identity to the polypeptide shown in SEQ ID NO: 63 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 63.

20 In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Didymosphaeria futilis* and having a sequence identity to the polypeptide shown in SEQ ID NO: 64 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 64.

25 In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Bacillus* e.g. obtainable from *Bacillus licheniformis* having a sequence identity to the polypeptide shown in SEQ ID NO: 65 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect,

the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 65.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Bacillus* e.g. obtainable from *Bacillus subtilis* having a sequence identity to the polypeptide shown in SEQ ID NO: 66 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 66.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Aspergillus* e.g. obtainable from *Aspergillus oryzae* having a sequence identity to the polypeptide shown in SEQ ID NO: 67 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 67.

In one embodiment the DNases to be added in the cleaning composition of the invention is a polypeptide obtainable from *Trichoderma* e.g. obtainable from *Trichoderma harzianum* having a sequence identity to the polypeptide shown in SEQ ID NO: 68 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity. In one aspect, the polypeptides differ by up to 10 amino acids, e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, from the mature polypeptide shown in SEQ ID NO: 68.

The preparation of the polypeptide having DNase activity as described under this section can refer to the description in the Nucleic acid Construct, Expression Vectors, Host Cells, Methods of Production and Fermentation Broth Formulations sections in WO 2017/059802 (Novozymes A/S).

The DNase can be included in the cleaning composition of the present invention at a level of from 0.01 to 1000ppm, from 1ppm to 1000 ppm, from 10 ppm to 1000 ppm, from 50 ppm to 1000 ppm, from 100 ppm to 1000 ppm, from 150 ppm to 1000 ppm, from 200 ppm to 1000 ppm, from 250 ppm to 1000 ppm, from 250 ppm to 750 ppm, from 250 ppm to 500 ppm.

The DNases above may be combined with hexosaminidase to form a blend to be added to the wash liquor solution according to the invention. The concentration of the DNase in the wash liquor solution is typically in the range of wash liquor from 0.00001ppm to 10 ppm, from 0.00002 ppm to 10 ppm, from 0.0001 ppm to 10 ppm, from 0.0002 ppm to 10 ppm, from 0.001 ppm to 10 ppm, from 0.002 ppm to 10 ppm, from 0.01 ppm to 10 ppm, from 0.02 ppm to 10 ppm, 0.1 ppm to 10 ppm, from 0.2ppm to 10 ppm, from 0.5 ppm to 5 ppm.

The DNases may be combined with any of the hexosaminidases below to form a blend to be added to a composition according to the invention.

Polypeptides having Hexosaminidase activity (hexosaminidases)

5 The term hexosaminidase includes “dispersin” and the abbreviation “Dsp”, which means a polypeptide having hexosaminidase activity, EC 3.2.1.- that catalyzes the hydrolysis of  $\beta$ -1,6-glycosidic linkages of N-acetyl-glucosamine polymers found e.g. in biofilm. The term hexosaminidase includes polypeptides having N-acetylglucosaminidase activity and  $\beta$ -N-acetylglucosaminidase activity. The term “polypeptide having hexosaminidase activity” may be  
10 used interchangeably with the term hexosaminidases and similarly the term “polypeptide having  $\beta$ -N-acetylglucosaminidase activity” may be used interchangeably with the term  $\beta$ -N-acetylglucosaminidases. For purposes of the present invention, hexosaminidase activity is determined according to the procedure described in Assay II. In a preferred embodiment, the polypeptide having hexosaminidase activity is a dispersin. In a preferred embodiment, the  
15 polypeptide having hexosaminidase activity is a  $\beta$ -N-acetylglucosaminidase targeting poly- $\beta$ -1,6-N-acetylglucosamine.

In one embodiment, the invention relates to a composition comprising a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin, and a cleaning component.

20 One embodiment of the invention relates to a composition comprising a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin, polypeptide wherein the polypeptide is selected from the group consisting of polypeptides:

- a) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the  
25 polypeptide shown in SEQ ID NO: 82,
- b) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 83,
- c) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%,  
30 at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 84,
- d) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 85,
- 35 e) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 86,

- f) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 87,
- 5 g) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 88,
- h) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 89,
- 10 i) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 90,
- j) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 91,
- 15 k) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 92,
- l) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 93,
- 20 m) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 94,
- 25 n) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 95,
- o) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 96,
- 30 p) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 97,
- q) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 98, and
- 35

- r) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 99, and wherein the polypeptide cleaves  $\beta$ -substituted N-acetyl glucosaminide.

5 A polypeptide having hexosaminidase activity may be obtained from microorganisms of any genus. Preferably the hexosaminidase or the  $\beta$ -N-acetylglucosaminidase targeting poly- $\beta$ -1,6-N-acetylglucosamine e.g. a dispersin is obtained from *Terribacillus*, *Curtobacterium*, *Aggregatibacter*, *Haemophilus* or *Actinobacillus*, preferably *Terribacillus*.

10 In another aspect, the polypeptide having hexosaminidase activity is a *Terribacillus* polypeptide, e.g., a polypeptide obtained from *Terribacillus saccharophilus*. In a preferred aspect, the polypeptide is a polypeptide having at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99% or 100% sequence identity to SEQ ID NO: 82 and is obtained from *Terribacillus* preferably *Terribacillus saccharophilus*.

15 In another aspect, the polypeptide is a *Terribacillus* polypeptide, e.g., a polypeptide obtained from *Terribacillus goriensis*. In a preferred aspect, the polypeptide is a polypeptide having at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99% or 100% sequence identity to SEQ ID NO: 83 and is obtained from *Terribacillus* preferably *Terribacillus goriensis*.

20 In another aspect, the polypeptide is a *Terribacillus* polypeptide, e.g., a polypeptide obtained from *Terribacillus saccharophilus*. In a preferred aspect, the polypeptide is a polypeptide having at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99% or 100% sequence identity to SEQ ID NO: 84 and is obtained from *Terribacillus* preferably *Terribacillus saccharophilus*.

25 In another aspect, the polypeptide is a *Terribacillus* polypeptide, e.g., a polypeptide obtained from *Terribacillus saccharophilus*. In a preferred aspect, the polypeptide is a polypeptide having at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99% or 100% sequence identity to SEQ ID NO: 98 and is obtained from *Terribacillus* preferably *Terribacillus saccharophilus*.

30 In another aspect, the polypeptide is a *Terribacillus* polypeptide, e.g., a polypeptide obtained from *Terribacillus saccharophilus*. In a preferred aspect, the polypeptide is a polypeptide having at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%,

at least 98%, at least 99% or 100% sequence identity to SEQ ID NO: 99 and is obtained from *Terribacillus* preferably *Terribacillus saccharophilus*.

In another aspect, the polypeptide is a *Curtobacterium* polypeptide, e.g., a polypeptide obtained from *Curtobacterium oceanosedimentum*. In a preferred aspect, the polypeptide is a polypeptide having at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99% or 100% sequence identity to SEQ ID NO: 85 and is obtained from *Curtobacterium* preferably *Curtobacterium oceanosedimentum*.

In another aspect, the polypeptide is a *Curtobacterium* polypeptide, e.g., a polypeptide obtained from *Curtobacterium flaccumfaciens*. In a preferred aspect, the polypeptide is a polypeptide having at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99% or 100% sequence identity to SEQ ID NO: 94 and is obtained from *Curtobacterium* preferably *Curtobacterium flaccumfaciens*.

In another aspect, the polypeptide is a *Curtobacterium* polypeptide, e.g., a polypeptide obtained from *Curtobacterium luteum*. In a preferred aspect, the polypeptide is a polypeptide having at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99% or 100% sequence identity to SEQ ID NO: 95 and is obtained from *Curtobacterium* preferably *Curtobacterium luteum*.

In another aspect, the polypeptide is a *Curtobacterium* polypeptide, e.g., a polypeptide obtained from *Curtobacterium oceanosedimentum*. In a preferred aspect, the polypeptide is a polypeptide having at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99% or 100% sequence identity to SEQ ID NO: 96 and is obtained from *Curtobacterium* preferably *Curtobacterium oceanosedimentum*.

In another aspect, the polypeptide is a *Curtobacterium* polypeptide, e.g., a polypeptide obtained from *Curtobacterium leaf154*. In a preferred aspect, the polypeptide is a polypeptide having at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99% or 100% sequence identity to SEQ ID NO: 97 and is obtained from *Curtobacterium* preferably *Curtobacterium leaf154*.

In another aspect, the polypeptide is a *Aggregatibacter* polypeptide, e.g., a polypeptide obtained from *Aggregatibacter actinomycetemcomitans*. In a preferred aspect, the polypeptide is a polypeptide having at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least

96%, at least 97%, at least 98%, at least 99% or 100% sequence identity to SEQ ID NO: 86 and is obtained from *Aggregatibacter* preferably *Aggregatibacter actinomycetemcomitans*.

In another aspect, the polypeptide is a *Haemophilus* polypeptide, e.g., a polypeptide obtained from *Haemophilus sputorum*. In a preferred aspect, the polypeptide is a polypeptide having at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99% or 100% sequence identity to SEQ ID NO: 87 and is obtained from *Haemophilus* preferably *Haemophilus sputorum*.

In another aspect, the polypeptide is a *Actinobacillus* polypeptide, e.g., a polypeptide obtained from *Actinobacillus suis*. In a preferred aspect, the polypeptide is a polypeptide having at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99% or 100% sequence identity to SEQ ID NO: 88 and is obtained from *Actinobacillus* preferably *Actinobacillus suis*.

In another aspect, the polypeptide is a *Actinobacillus* polypeptide, e.g., a polypeptide obtained from *Actinobacillus capsulatus* DSM 19761. In a preferred aspect, the polypeptide is a polypeptide having at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99% or 100% sequence identity to SEQ ID NO: 89 and is obtained from *Actinobacillus* preferably *Actinobacillus capsulatus* DSM 19761.

In another aspect, the polypeptide is a *Actinobacillus* polypeptide, e.g., a polypeptide obtained from *Actinobacillus equuli* subsp. *equuli*. In a preferred aspect, the polypeptide is a polypeptide having at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99% or 100% sequence identity to SEQ ID NO: 90 and is obtained from *Actinobacillus* preferably *Actinobacillus equuli* subsp. *equuli*.

In another aspect, the polypeptide is a *Aggregatibacter* polypeptide, e.g., a polypeptide obtained from *Aggregatibacter actinomycetemcomitans*. In a preferred aspect, the polypeptide is a polypeptide having at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99% or 100% sequence identity to SEQ ID NO: 91 and is obtained from *Aggregatibacter* preferably *Aggregatibacter actinomycetemcomitans*.

In another aspect, the polypeptide is a *Aggregatibacter* polypeptide, e.g., a polypeptide obtained from *Aggregatibacter actinomycetemcomitans*. In a preferred aspect, the polypeptide is a polypeptide having at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least

96%, at least 97%, at least 98%, at least 99% or 100% sequence identity to SEQ ID NO: 92 and is obtained from *Aggregatibacter* preferably *Aggregatibacter actinomycetemcomitans*.

In another aspect, the polypeptide is a *Actinobacillus* polypeptide, e.g., a polypeptide obtained from *Actinobacillus pleuropneumoniae*. In a preferred aspect, the polypeptide is a polypeptide  
5 having at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99% or 100% sequence identity to SEQ ID NO: 93 and is obtained from *Actinobacillus* preferably *Actinobacillus pleuropneumoniae*.

In another aspect, the polypeptide is a *Curtobacterium* polypeptide, e.g., a polypeptide  
10 obtained from *Curtobacterium flaccumfaciens*. In a preferred aspect, the polypeptide is a polypeptide having at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99% or 100% sequence identity to SEQ ID NO: 94 and is obtained from *Curtobacterium* preferably *Curtobacterium flaccumfaciens*.

In another aspect, the polypeptide is a *Curtobacterium* polypeptide, e.g., a polypeptide  
15 obtained from *Curtobacterium luteum*. In a preferred aspect, the polypeptide is a polypeptide having at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99% or 100% sequence identity to SEQ ID NO: 95 and is obtained  
20 from *Curtobacterium* preferably *Curtobacterium luteum*.

In another aspect, the polypeptide is a *Curtobacterium* polypeptide, e.g., a polypeptide  
obtained from *Curtobacterium oceanosedimentum*. In a preferred aspect, the polypeptide is a polypeptide having at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least  
25 96%, at least 97%, at least 98%, at least 99% or 100% sequence identity to SEQ ID NO: 96 and is obtained from *Curtobacterium* preferably *Curtobacterium oceanosedimentum*.

In another aspect, the polypeptide is a *Curtobacterium* polypeptide, e.g., a polypeptide  
obtained from *Curtobacterium Leaf154*. In a preferred aspect, the polypeptide is a polypeptide having at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least  
30 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99% or 100% sequence identity to SEQ ID NO: 97 and is obtained from *Curtobacterium* preferably *Curtobacterium Leaf154*.

In another aspect, the polypeptide is a *Terribacillus* polypeptide, e.g., a polypeptide obtained from *Terribacillus saccharophilus*. In a preferred aspect, the polypeptide is a polypeptide having  
35 at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%,

at least 98%, at least 99% or 100% sequence identity to SEQ ID NO: 98 and is obtained from *Terribacillus* preferably *Terribacillus saccharophilus*.

In another aspect, the polypeptide is a *Terribacillus* polypeptide, e.g., a polypeptide obtained from *Terribacillus saccharophilus*. In a preferred aspect, the polypeptide is a polypeptide having  
 5 at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%,  
 at least 91%, at least 92%, at least 93%, at least 94%, at least 95%, at least 96%, at least 97%,  
 at least 98%, at least 99% or 100% sequence identity to SEQ ID NO: 99 and is obtained from  
*Terribacillus*, preferably *Terribacillus saccharophilus*.

The polypeptides useful in the present invention belong to the Glycoside Hydrolase family 20  
 10 (GH20, [www.cazy.org](http://www.cazy.org)). This family includes dispersins such as Dispersin B (DspB) which is  $\beta$ -N-acetylglucosaminidases belonging to the Glycoside Hydrolase 20 family.

The preparation of the polypeptide having hexosaminidase activity as described under this section can refer to the description in the Nucleic acid Construct, Expression Vectors, Host Cells,

The hexosaminidase can be included in the cleaning composition of the present invention at  
 15 a level of from 0.01 to 1000 ppm, from 1ppm to 1000 ppm, from 10 ppm to 1000 ppm, from 50  
 ppm to 1000 ppm, from 100 ppm to 1000 ppm, from 150 ppm to 1000 ppm, from 200 ppm to  
 1000 ppm, from 250 ppm to 1000 ppm, from 250 ppm to 750 ppm, from 250 ppm to 500 ppm.

The hexosaminidase can be included in the wash liquor solution of the present invention at a  
 level of from 0.00001ppm to 10 ppm, from 0.00002 ppm to 10 ppm, from 0.0001ppm to 10 ppm,  
 20 from 0.0002 ppm to 10 ppm, from 0.001 ppm to 10 ppm, from 0.002 ppm to 10 ppm, from 0.01  
 ppm to 10 ppm, from 0.02 ppm to 10 ppm, from 0.1 ppm to 10 ppm, from 0.2 ppm to 10 ppm,  
 from 0.5 ppm to 5 ppm.

### Cleaning composition

25 The invention relates to cleaning compositions comprising at least one DNase and at least one  
 hexosaminidase in combination with one or more additional cleaning components. The choice of  
 additional components is within the skill of the artisan and includes conventional ingredients,  
 including the exemplary non-limiting components set forth below. An enzyme blend of the current  
 invention comprises a DNase and a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g.  
 30 a dispersin. One embodiment of the invention relates to a cleaning composition comprising a  
 DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin and a  
 cleaning component.

The DNase is preferably microbial, preferably obtained from bacteria or fungi. One embodiment  
 of the invention relates to a cleaning composition comprising a DNase, a hexosaminidase,  
 35 preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin and a cleaning component, wherein the  
 DNase is microbial preferably bacteria or fungi.

In one embodiment, the DNase is obtained from bacteria. One embodiment of the invention

relates to a cleaning composition comprising a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin and a cleaning component, wherein the DNase is obtained from *Bacillus*, preferably *Bacillus cibi*, *Bacillus horikoshii*, *Bacillus licheniformis*, *Bacillus subtilis*, *Bacillus horneckiae*, *Bacillus idriensis*, *Bacillus algicola*, *Bacillus vietnamensis*, *Bacillus hwajinpoensis*, *Bacillus indicus*, *Bacillus marisflavi* or *Bacillus luciferensis*.

The hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin is preferably selected from the genus *Terribacillus* preferably, *Terribacillus goriensis* or *Terribacillus saccharophilus*. Alternatively, the hexosaminidase may be obtained from the genus *Curtobacterium* preferably, *Curtobacterium oceanosedimentum*, *Curtobacterium flaccumfaciens*, *Curtobacterium luteus* or *Curtobacterium leaf154*. Alternatively, the hexosaminidase may be obtained from the genus *Aggregatibacter* preferably, *Aggregatibacter actinomycetemcomitans*. Alternatively, the hexosaminidase may be obtained from genus *Haemophilus* preferably, *Haemophilus sputorum*. Alternatively, the hexosaminidase may be obtained from the genus *Actinobacillus* preferably, *Actinobacillus suis*, *Actinobacillus capsulatus* DSM 19761, *Actinobacillus equuli* subsp. *Equuli* or *Actinobacillus pleuropneumoniae*.

One embodiment of the invention relates to a cleaning composition comprising a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin and a cleaning component, wherein the DNase is obtained from *Bacillus*, preferably *Bacillus cibi*, *Bacillus horikoshii*, *Bacillus licheniformis*, *Bacillus subtilis*, *Bacillus horneckiae*, *Bacillus idriensis*, *Bacillus algicola*, *Bacillus vietnamensis*, *Bacillus hwajinpoensis*, *Bacillus indicus*, *Bacillus marisflavi* or *Bacillus luciferensis* and wherein the hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin is selected from *Terribacillus* such as *Terribacillus goriensis* or *Terribacillus saccharophilus*. One embodiment of the invention relates to a cleaning composition comprising a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin and a cleaning component, wherein the DNase is obtained from *Bacillus*, preferably *Bacillus cibi*, *Bacillus horikoshii*, *Bacillus licheniformis*, *Bacillus subtilis*, *Bacillus horneckiae*, *Bacillus idriensis*, *Bacillus algicola*, *Bacillus vietnamensis*, *Bacillus hwajinpoensis*, *Bacillus indicus*, *Bacillus marisflavi* or *Bacillus luciferensis* and wherein the hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin is selected from *Curtobacterium* such as *Curtobacterium oceanosedimentum*, *Curtobacterium flaccumfaciens*, *Curtobacterium luteus* or *Curtobacterium leaf154*.

One embodiment of the invention relates to a cleaning composition comprising a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin and a cleaning component, wherein the DNase is obtained from *Bacillus*, preferably *Bacillus cibi*, *Bacillus horikoshii*, *Bacillus licheniformis*, *Bacillus subtilis*, *Bacillus horneckiae*, *Bacillus idriensis*, *Bacillus algicola*, *Bacillus vietnamensis*, *Bacillus hwajinpoensis*, *Bacillus indicus*, *Bacillus marisflavi* or *Bacillus luciferensis* and wherein the hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin is selected from *Aggregatibacter* such as *Aggregatibacter*

*actinomycetemcomitans*.

One embodiment of the invention relates to a cleaning composition comprising a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin and a cleaning component, wherein the DNase is obtained from *Bacillus*, preferably *Bacillus cibi*, *Bacillus horikoshii*, *Bacillus licheniformis*, *Bacillus subtilis*, *Bacillus horneckiae*, *Bacillus idriensis*, *Bacillus algicola*, *Bacillus vietnamensis*, *Bacillus hwajinpoensis*, *Bacillus indicus*, *Bacillus marisflavi* or *Bacillus luciferensis* and wherein the hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin is selected from *Haemophilus* such as *Haemophilus sputorum*.

One embodiment of the invention relates to a cleaning composition comprising a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin and a cleaning component, wherein the DNase is obtained from *Bacillus*, preferably *Bacillus cibi*, *Bacillus horikoshii*, *Bacillus licheniformis*, *Bacillus subtilis*, *Bacillus horneckiae*, *Bacillus idriensis*, *Bacillus algicola*, *Bacillus vietnamensis*, *Bacillus hwajinpoensis*, *Bacillus indicus*, *Bacillus marisflavi* or *Bacillus luciferensis* and wherein the hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin is selected from *Actinobacillus* such as *Actinobacillus suis*, *Actinobacillus capsulatus* DSM 19761, *Actinobacillus equuli* subsp. *Equuli* or *Actinobacillus pleuropneumoniae*.

One embodiment of the invention relates to a cleaning composition comprising a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin and a cleaning component, wherein the DNase is obtained from *Bacillus*, preferably *Bacillus cibi*, *Bacillus horikoshii*, *Bacillus licheniformis*, *Bacillus subtilis*, *Bacillus horneckiae*, *Bacillus idriensis*, *Bacillus algicola*, *Bacillus vietnamensis*, *Bacillus hwajinpoensis*, *Bacillus indicus*, *Bacillus marisflavi* or *Bacillus luciferensis* and wherein the hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin is selected from the group consisting of;

- a) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 82,
- b) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 83,
- c) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 84,
- d) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 85,

- e) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 86,
- f) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 87,
- g) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 88,
- h) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 89,
- i) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 90,
- j) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 91,
- k) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 92,
- l) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 93,
- m) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 94,
- n) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 95,
- o) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 96,
- p) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 97,

- q) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 98, and
- r) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 99.

The DNases preferable belong to the NUC1 group of DNases and comprise one or more of the motifs [T/D/S][G/N]PQL (SEQ ID NO 69), [F/L/Y/I]A[N/R]D[L/I/P/V] (SEQ ID NO: 70), or C[D/N]T[A/R] (SEQ ID NO: 71). The DNases even more preferably comprises a NUC1\_A domain [D/Q][I/V]DH (SEQ ID NO 72). In addition to comprising any of the domain motifs [T/D/S][G/N]PQL, [F/L/Y/I]A[N/R]D[L/I/P/V] or C[D/N]T[A/R]. The DNases to be added to a composition of the invention preferably belong to the group of DNases comprised in the GYS-clade, which are group of DNases on the same branch of a phylogenetic tree having both structural and functional similarities. These NUC1 and/or NUC1\_A DNases comprise the conservative motifs [D/M/L][S/T]GYSR[D/N] (SEQ ID NO: 73) or ASXNRSKG (SEQ ID NO: 74) and share similar structural and functional properties. The DNases of the GYS-clade are preferably obtained from *Bacillus* genus. One embodiment of the invention relates to a cleaning composition comprising a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin and a cleaning component, wherein the DNase comprises one or both of the motif(s) [D/M/L][S/T]GYSR[D/N] (SEQ ID NO: 73) or ASXNRSKG (SEQ ID NO: 74). One embodiment of the invention relates to a cleaning composition comprising a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin and a cleaning component, wherein the DNase comprises one or both of the motif(s) [D/M/L][S/T]GYSR[D/N] (SEQ ID NO: 73) or ASXNRSKG (SEQ ID NO: 74), wherein the hexosaminidase is selected from the group consisting of;

- a) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 82,
- b) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 83,
- c) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 84,
- d) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 85,

- e) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 86,
- f) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 87,
- g) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 88,
- h) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 89,
- i) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 90,
- j) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 91,
- k) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 92,
- l) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 93,
- m) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 94,
- n) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 95,
- o) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 96,
- p) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 97,

- q) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 98, and
- r) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 99.

One embodiment of the invention relates to a cleaning composition comprising a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin, and a cleaning component, wherein the DNase comprises one or both of the motifs [D/M/L][S/T]GYSR[D/N] (SEQ ID NO: 73), ASXNRSKG (SEQ ID NO: 74) and wherein the DNase is selected from the group consisting of polypeptides:

- a) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 1,
- b) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 2,
- c) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 3,
- d) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 4,
- e) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 5,
- f) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 6,
- g) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 7,
- h) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 8,

- i) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 9,
- 5 j) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 10,
- k) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 11,
- 10 l) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 12,
- m) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 13,
- 15 n) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 14,
- o) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 15,
- 20 p) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 16,
- 25 q) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 17,
- r) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 18,
- 30 s) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 19,
- t) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 20,
- 35

- u) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 21,
- v) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 22,
- w) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 23,
- x) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 24, and
- y) a polypeptide having at least 60%, at least 65%, at least 70%, at least 75% at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 25.

The DNase is preferably a bacillus DNase, such as a *Bacillus cibi*, *Bacillus subtilis* or *Bacillus licheniformis*.

One embodiment of the invention relates to a cleaning composition comprising a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin and a cleaning component, wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO 13.

One embodiment of the invention relates to a cleaning composition comprising a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin and a cleaning component, wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO: 65.

One embodiment of the invention relates to a cleaning composition comprising a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin and a cleaning component, wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO: 66.

The DNase may also be fungal, one embodiment of the invention relates to a cleaning composition comprising a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin and a cleaning component, wherein the DNase is fungal, preferably obtained from *Aspergillus* and even more preferably from *Aspergillus oryzae* and wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%,

at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO: 67.

One embodiment relates to a cleaning composition comprising a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin and a cleaning component, wherein the DNase is fungal, preferably obtained from *Trichoderma* and even more preferably from *Trichoderma harzianum* and wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO: 68.

One embodiment of the invention relates to a cleaning composition comprising a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin and a cleaning component, wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO 13 and wherein the hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin is selected from the group consisting of hexosaminidase, comprising an amino acid sequence with;

- i) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 82,
- ii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 83,
- iii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 84,
- iv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 85,
- v) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 86,
- vi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 87,
- vii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 88,

- viii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 89,
- ix) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 90,
- x) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 91,
- xi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 92,
- xii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 93,
- xiii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 94,
- xiv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 95,
- xv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 96,
- xvi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 97,
- xvii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 98, and
- xviii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 99.

One embodiment of the invention relates to a cleaning composition comprising a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin and a cleaning component, wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to

the amino acid sequence shown in SEQ ID NO 65 and wherein the hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin is selected from the group consisting of hexosaminidases, comprising an amino acid sequence with;

- i) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
5 at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 82
- ii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 83
- 10 iii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 84,
- iv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
15 at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 85,
- v) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 86,
- vi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
20 at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 87,
- vii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 88,
- 25 viii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 89,
- ix) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
30 at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 90,
- x) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 91,
- xi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
35 at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 92,

- xii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 93,
- xiii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 94,
- xiv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 95,
- xv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 96,
- xvi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 97,
- xvii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 98, and
- xviii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 99.

One embodiment of the invention relates to a cleaning composition comprising a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin and a cleaning component, wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO 66 and wherein the hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin is selected from the group consisting of hexosaminidase, comprising an amino acid sequence with;

- i) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 82,
- ii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 83,
- iii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 84,

- iv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 85,
- 5 v) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 86,
- vi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 87,
- 10 vii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 88,
- viii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
15 to the polypeptide shown in SEQ ID NO: 89,
- ix) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 90,
- x) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
20 at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 91,
- xi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 92,
- 25 xii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 93,
- xiii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
30 to the polypeptide shown in SEQ ID NO: 94,
- xiv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 95,
- xv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
35 at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 96,

- xvi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 97,
- xvii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 98, and
- xviii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 99.

One embodiment of the invention relates to a cleaning composition comprising a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin and a cleaning component, wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO 67 and wherein the hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin is selected from the group consisting of hexosaminidase, comprising an amino acid sequence with;

- i) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 82,
- ii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 83,
- iii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 84,
- iv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 85,
- v) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 86,
- vi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 87,

- vii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 88,
- viii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 89,
- ix) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 90,
- x) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 91,
- xi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 92,
- xii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 93,
- xiii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 94,
- xiv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 95,
- xv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 96,
- xvi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 97,
- xvii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 98, and
- xviii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 99.

One embodiment of the invention relates to a cleaning composition comprising a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin and a cleaning component, wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO 68 and wherein the hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin is selected from the group consisting of hexosaminidase, comprising an amino acid sequence with;

- i) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 82,
- ii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 83,
- iii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 84,
- iv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 85,
- v) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 86,
- vi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 87,
- vii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 88,
- viii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 89,
- ix) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 90,
- x) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 91,

- xi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 92,
- xii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 93,
- xiii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 94,
- xiv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 95,
- xv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 96,
- xvi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 97,
- xvii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 98, and
- xviii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 99.
- One embodiment of the present invention relates to a cleaning composition comprising;
- a) at least 0.01 ppm of at least one polypeptide having DNase activity, wherein the DNase is selected for the group consisting of:
- i) a NUC1 or NUC1A DNase comprising one or more of the motifs [T/D/S][G/N]PQL (SEQ ID NO 69), [F/L/Y/I]A[N/R]D[L/I/P/V] (SEQ ID NO: 70), or C[D/N]T[A/R] (SEQ ID NO: 71);
- ii) a NUC1 or NUC1A DNase comprising the motif [D/Q][I/V]DH (SEQ ID NO 72);
- iii) a NUC1 or NUC1A DNase comprising one or both of the motifs [D/M/L][S/T]GYSR[D/N] (SEQ ID NO: 73) or ASXNRSKG (SEQ ID NO: 74);
- iv) a NUC1 or NUC1A DNase comprising one or both of the motifs [V/I]PL[S/A]NAWK (SEQ ID NO: 75) or NPQL (SEQ ID NO: 76);
- v) a NUC1 or NUC1A DNase comprising one or both of the motifs

P[Q/E]L[W/Y] (SEQ ID NO: 77) or [K/H/E]NAW (SEQ ID NO:78);

- vi) a polypeptide having DNase activity selected from: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 1, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 2, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 3, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 4, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 5, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 6, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 7, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 8, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 9, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 10, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 11, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 12, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 13, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 14, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 15, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 16, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 17, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 18, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 19, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 20, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 21, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 22, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 23, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 24, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 25, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 26, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 27, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 28, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 29, a polypeptide having at least

[illegible]

having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 61, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 62, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 63, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 64, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 65, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 66, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 67, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 68;

b) at least 0.01 ppm hexosaminidase selected from the group consisting of

I. a polypeptide having hexosaminidase activity selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 82, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 83, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 84, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 85, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 86, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 87, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 88, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 89, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 90, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 91, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 92, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 93; a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 94; a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 95; a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 96; a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 97; a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 98; a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 99;

II. a polypeptide having N-acetylglucosaminidase activity, preferably  $\beta$ -N-acetylglucosaminidase activity; and

III. a polypeptide comprising a GH20 domain.

c) one or more cleaning components, optionally a surfactant, builders, bleach components, polymers, dispersing agents and additional enzymes.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [D/M/L][S/T]GYSR[D/N] (SEQ ID NO: 73) or ASXNRSKG (SEQ ID NO: 74), preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 1, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 2, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 3, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 4, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 5, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 6, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 7, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 8, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 9, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 10, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 11, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 12, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 13, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 14, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 15, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 16, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 17, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 18, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 19, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 20, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 21, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 22, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 23, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 24, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 25; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 82, and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [D/M/L][S/T]GYSR[D/N] (SEQ ID NO: 73) or ASXNRSKG (SEQ ID NO: 74) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the

polypeptide shown in SEQ ID NO: 1, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 2, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 3, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 4, a polypeptide having at least 80% sequence identity to the  
 5 polypeptide shown in SEQ ID NO: 5, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 6, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 7, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 8, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 9, a polypeptide having at least 80% sequence identity to the  
 10 polypeptide shown in SEQ ID NO: 10, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 11, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 12, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 13, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 14, a polypeptide having at least 80% sequence identity to the  
 15 polypeptide shown in SEQ ID NO: 15, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 16, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 17, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 18, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 19, a polypeptide having at least 80% sequence identity to the  
 20 polypeptide shown in SEQ ID NO: 20, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 21, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 22, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 23, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 24, and a polypeptide having at least 80% sequence identity  
 25 to the polypeptide shown in SEQ ID NO: 25; and at least 10 ppm of hexosaminidase having at  
 least 80% sequence identity to the polypeptide shown in SEQ ID NO: 83 and at least one cleaning  
 component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a  
 NUC1 or NUC1A DNase comprising one or both of the motifs [D/M/L][S/T]GYSR[D/N] (SEQ ID  
 30 NO: 73) or ASXNRSKG (SEQ ID NO: 74) preferably the polypeptide having DNase activity is  
 selected from the group consisting of: a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 1, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 2, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 3, a polypeptide having at least 80% sequence identity to the  
 35 polypeptide shown in SEQ ID NO: 4, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 5, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 6, a polypeptide having at least 80% sequence identity to the

polypeptide shown in SEQ ID NO: 7, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 8, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 9, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 10, a polypeptide having at least 80% sequence identity to the  
 5 polypeptide shown in SEQ ID NO: 11, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 12, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 13, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 14, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 15, a polypeptide having at least 80% sequence identity to the  
 10 polypeptide shown in SEQ ID NO: 16, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 17, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 18, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 19, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 20, a polypeptide having at least 80% sequence identity to the  
 15 polypeptide shown in SEQ ID NO: 21, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 22, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 23, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 24, and a polypeptide having at least 80% sequence identity  
 to the polypeptide shown in SEQ ID NO: 25; and at least 10 ppm of hexosaminidase having at  
 20 least 80% sequence identity to the polypeptide shown in SEQ ID NO: 84 and at least one cleaning  
 component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a a  
 NUC1 or NUC1A DNase comprising one or both of the motifs [D/M/L][S/T]GYSR[D/N] (SEQ ID  
 NO: 73) or ASXNRSKG (SEQ ID NO: 74) preferably the polypeptide having DNase activity is  
 25 selected from the group consisting of: a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 1, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 2, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 3, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 4, a polypeptide having at least 80% sequence identity to the  
 30 polypeptide shown in SEQ ID NO: 5, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 6, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 7, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 8, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 9, a polypeptide having at least 80% sequence identity to the  
 35 polypeptide shown in SEQ ID NO: 10, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 11, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 12, a polypeptide having at least 80% sequence identity to the

polypeptide shown in SEQ ID NO: 13, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 14, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 15, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 16, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 17, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 18, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 19, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 20, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 21, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 22, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 23, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 24, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 25; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 85 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [D/M/L][S/T]GYSR[D/N] (SEQ ID NO: 73) or ASXNRSKG (SEQ ID NO: 74) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 1, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 2, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 3, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 4, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 5, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 6, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 7, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 8, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 9, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 10, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 11, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 12, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 13, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 14, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 15, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 16, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 17, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 18, a polypeptide having at least 80% sequence identity to the

polypeptide shown in SEQ ID NO: 19, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 20, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 21, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 22, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 23, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 24, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 25; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 86 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [D/M/L][S/T]GYSR[D/N] (SEQ ID NO: 73) or ASXNRSKG (SEQ ID NO: 74) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 1, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 2, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 3, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 4, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 5, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 6, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 7, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 8, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 9, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 10, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 11, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 12, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 13, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 14, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 15, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 16, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 17, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 18, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 19, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 20, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 21, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 22, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 23, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 24, and a polypeptide having at least 80% sequence identity

to the polypeptide shown in SEQ ID NO: 25; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 87.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [D/M/L][S/T]GYSR[D/N] (SEQ ID NO: 73) or ASXNRSKG (SEQ ID NO: 74) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 1, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 2, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 3, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 4, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 5, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 6, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 7, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 8, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 9, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 10, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 11, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 12, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 13, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 14, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 15, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 16, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 17, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 18, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 19, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 20, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 21, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 22, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 23, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 24, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 25; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 88 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [D/M/L][S/T]GYSR[D/N] (SEQ ID NO: 73) or ASXNRSKG (SEQ ID NO: 74) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the

polypeptide shown in SEQ ID NO: 1, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 2, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 3, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 4, a polypeptide having at least 80% sequence identity to the  
 5 polypeptide shown in SEQ ID NO: 5, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 6, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 7, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 8, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 9, a polypeptide having at least 80% sequence identity to the  
 10 polypeptide shown in SEQ ID NO: 10, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 11, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 12, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 13, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 14, a polypeptide having at least 80% sequence identity to the  
 15 polypeptide shown in SEQ ID NO: 15, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 16, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 17, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 18, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 19, a polypeptide having at least 80% sequence identity to the  
 20 polypeptide shown in SEQ ID NO: 20, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 21, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 22, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 23, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 24, and a polypeptide having at least 80% sequence identity  
 25 to the polypeptide shown in SEQ ID NO: 25; and at least 10 ppm of hexosaminidase having at  
 least 80% sequence identity to the polypeptide shown in SEQ ID NO: 89 and at least one cleaning  
 component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a  
 NUC1 or NUC1A DNase comprising one or both of the motifs [D/M/L][S/T]GYSR[D/N] (SEQ ID  
 30 NO: 73) or ASXNRSKG (SEQ ID NO: 74) preferably the polypeptide having DNase activity is  
 selected from the group consisting of: a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 1, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 2, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 3, a polypeptide having at least 80% sequence identity to the  
 35 polypeptide shown in SEQ ID NO: 4, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 5, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 6, a polypeptide having at least 80% sequence identity to the

polypeptide shown in SEQ ID NO: 7, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 8, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 9, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 10, a polypeptide having at least 80% sequence identity to the  
 5 polypeptide shown in SEQ ID NO: 11, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 12, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 13, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 14, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 15, a polypeptide having at least 80% sequence identity to the  
 10 polypeptide shown in SEQ ID NO: 16, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 17, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 18, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 19, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 20, a polypeptide having at least 80% sequence identity to the  
 15 polypeptide shown in SEQ ID NO: 21, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 22, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 23, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 24, and a polypeptide having at least 80% sequence identity  
 to the polypeptide shown in SEQ ID NO: 25; and at least 10 ppm of hexosaminidase having at  
 20 least 80% sequence identity to the polypeptide shown in SEQ ID NO: 90 and at least one cleaning  
 component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a  
 NUC1 or NUC1A DNase comprising one or both of the motifs [D/M/L][S/T]GYSR[D/N] (SEQ ID  
 NO: 73) or ASXNRSKG (SEQ ID NO: 74) preferably the polypeptide having DNase activity is  
 25 selected from the group consisting of: a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 1, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 2, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 3, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 4, a polypeptide having at least 80% sequence identity to the  
 30 polypeptide shown in SEQ ID NO: 5, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 6, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 7, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 8, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 9, a polypeptide having at least 80% sequence identity to the  
 35 polypeptide shown in SEQ ID NO: 10, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 11, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 12, a polypeptide having at least 80% sequence identity to the

polypeptide shown in SEQ ID NO: 13, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 14, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 15, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 16, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 17, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 18, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 19, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 20, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 21, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 22, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 23, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 24, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 25; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 91 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [D/M/L][S/T]GYSR[D/N] (SEQ ID NO: 73) or ASXNRSKG (SEQ ID NO: 74) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 1, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 2, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 3, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 4, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 5, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 6, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 7, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 8, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 9, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 10, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 11, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 12, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 13, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 14, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 15, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 16, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 17, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 18, a polypeptide having at least 80% sequence identity to the

polypeptide shown in SEQ ID NO: 19, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 20, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 21, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 22, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 23, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 24, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 25; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 92 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [D/M/L][S/T]GYSR[D/N] (SEQ ID NO: 73) or ASXNRSKG (SEQ ID NO: 74) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 1, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 2, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 3, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 4, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 5, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 6, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 7, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 8, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 9, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 10, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 11, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 12, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 13, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 14, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 15, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 16, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 17, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 18, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 19, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 20, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 21, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 22, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 23, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 24, and a polypeptide having at least 80% sequence identity

to the polypeptide shown in SEQ ID NO: 25; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 93 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [D/M/L][S/T]GYSR[D/N] (SEQ ID NO: 73) or ASXNRSKG (SEQ ID NO: 74) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 1, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 2, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 3, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 4, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 5, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 6, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 7, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 8, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 9, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 10, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 11, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 12, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 13, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 14, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 15, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 16, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 17, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 18, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 19, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 20, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 21, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 22, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 23, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 24, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 25; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 94 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [D/M/L][S/T]GYSR[D/N] (SEQ ID NO: 73) or ASXNRSKG (SEQ ID NO: 74) preferably the polypeptide having DNase activity is

selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 1, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 2, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 3, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 4, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 5, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 6, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 7, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 8, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 9, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 10, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 11, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 12, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 13, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 14, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 15, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 16, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 17, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 18, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 19, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 20, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 21, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 22, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 23, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 24, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 25; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 95 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [D/M/L][S/T]GYSR[D/N] (SEQ ID NO: 73) or ASXNRSKG (SEQ ID NO: 74) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 1, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 2, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 3, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 4, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 5, a polypeptide having at least 80% sequence identity to the

polypeptide shown in SEQ ID NO: 6, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 7, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 8, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 9, a polypeptide having at least 80% sequence identity to the  
 5 polypeptide shown in SEQ ID NO: 10, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 11, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 12, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 13, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 14, a polypeptide having at least 80% sequence identity to the  
 10 polypeptide shown in SEQ ID NO: 15, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 16, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 17, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 18, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 19, a polypeptide having at least 80% sequence identity to the  
 15 polypeptide shown in SEQ ID NO: 20, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 21, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 22, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 23, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 24, and a polypeptide having at least 80% sequence identity  
 20 to the polypeptide shown in SEQ ID NO: 25; and at least 10 ppm of hexosaminidase having at  
 least 80% sequence identity to the polypeptide shown in SEQ ID NO: 96 and at least one cleaning  
 component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a  
 NUC1 or NUC1A DNase comprising one or both of the motifs [D/M/L][S/T]GYSR[D/N] (SEQ ID  
 25 NO: 73) or ASXNRSKG (SEQ ID NO: 74) preferably the polypeptide having DNase activity is  
 selected from the group consisting of: a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 1, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 2, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 3, a polypeptide having at least 80% sequence identity to the  
 30 polypeptide shown in SEQ ID NO: 4, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 5, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 6, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 7, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 8, a polypeptide having at least 80% sequence identity to the  
 35 polypeptide shown in SEQ ID NO: 9, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 10, a polypeptide having at least 80% sequence identity to the  
 polypeptide shown in SEQ ID NO: 11, a polypeptide having at least 80% sequence identity to the

polypeptide shown in SEQ ID NO: 12, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 13, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 14, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 15, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 16, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 17, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 18, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 19, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 20, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 21, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 22, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 23, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 24, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 25; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 97 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [D/M/L][S/T]GYSR[D/N] (SEQ ID NO: 73) or ASXNRSKG (SEQ ID NO: 74) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 1, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 2, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 3, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 4, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 5, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 6, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 7, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 8, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 9, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 10, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 11, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 12, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 13, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 14, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 15, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 16, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 17, a polypeptide having at least 80% sequence identity to the

polypeptide shown in SEQ ID NO: 18, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 19, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 20, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 21, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 22, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 23, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 24, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 25; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 98 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [D/M/L][S/T]GYSR[D/N] (SEQ ID NO: 73) or ASXNRSKG (SEQ ID NO: 74) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 1, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 2, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 3, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 4, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 5, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 6, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 7, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 8, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 9, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 10, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 11, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 12, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 13, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 14, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 15, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 16, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 17, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 18, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 19, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 20, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 21, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 22, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 23, a polypeptide having at least 80% sequence identity to the

polypeptide shown in SEQ ID NO: 24, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 25; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 99 and at least one cleaning component.

5 One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a DNase sequence having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 13, and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 84 or 98, and at least one cleaning component.

10 One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [V/I]PL[S/A]NAWK (SEQ ID NO: 75) or NPQL (SEQ ID NO: 76), preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 26, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 27, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 28, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 29, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 30, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 31, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 32, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 33, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 34, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 35, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 36, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 37, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 38; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 82, and at least one cleaning component.

25 One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [V/I]PL[S/A]NAWK (SEQ ID NO: 75) or NPQL (SEQ ID NO: 76) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 26, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 27, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 28, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 29, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 30, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 31, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 32, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 33, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 34, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 35, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 36, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 37, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 38; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 82, and at least one cleaning component.

shown in SEQ ID NO: 33, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 34, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 35, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 36, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 37, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 38; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 83, and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [V/I]PL[S/A]NAWK (SEQ ID NO: 75) or NPQL (SEQ ID NO: 76) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 26, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 27, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 28, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 29, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 30, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 31, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 32, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 33, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 34, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 35, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 36, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 37, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 38; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 84, and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [V/I]PL[S/A]NAWK (SEQ ID NO: 75) or NPQL (SEQ ID NO: 76) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 26, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 27, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 28, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 29, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 30, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 31, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 32, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 33, a polypeptide having at least 80% sequence identity to the polypeptide

shown in SEQ ID NO: 34, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 35, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 36, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 37, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 38; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 85, and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [V/I]PL[S/A]NAWK (SEQ ID NO: 75) or NPQL (SEQ ID NO: 76) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 26, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 27, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 28, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 29, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 30, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 31, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 32, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 33, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 34, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 35, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 36, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 37, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 38; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 86, and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [V/I]PL[S/A]NAWK (SEQ ID NO: 75) or NPQL (SEQ ID NO: 76) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 26, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 27, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 28, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 29, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 30, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 31, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 32, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 33, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 34, a polypeptide having at least 80% sequence identity to the polypeptide

shown in SEQ ID NO: 35, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 36, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 37, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 38; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 87, and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [V/I]PL[S/A]NAWK (SEQ ID NO: 75) or NPQL (SEQ ID NO: 76) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 26, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 27, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 28, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 29, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 30, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 31, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 32, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 33, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 34, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 35, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 36, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 37, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 38; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 88, and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [V/I]PL[S/A]NAWK (SEQ ID NO: 75) or NPQL (SEQ ID NO: 76) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 26, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 27, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 28, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 29, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 30, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 31, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 32, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 33, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 34, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 35, a polypeptide having at least 80% sequence identity to the polypeptide

shown in SEQ ID NO: 36, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 37, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 38; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 89, and at least one cleaning component.

5 One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [V/I]PL[S/A]NAWK (SEQ ID NO: 75) or NPQL (SEQ ID NO: 76) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 26, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 27, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 28, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 29, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 30, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 31, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 32, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 33, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 34, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 35, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 36, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 37, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 38; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 90, and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [V/I]PL[S/A]NAWK (SEQ ID NO: 75) or NPQL (SEQ ID NO: 76) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 26, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 27, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 28, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 29, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 30, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 31, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 32, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 33, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 34, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 35, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 36, a polypeptide having at least 80% sequence identity to the polypeptide

shown in SEQ ID NO: 37, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 38; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 91, and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [V/I]PL[S/A]NAWK (SEQ ID NO: 75) or NPQL (SEQ ID NO: 76) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 26, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 27, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 28, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 29, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 30, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 31, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 32, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 33, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 34, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 35, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 36, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 37, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 38; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 92, and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [V/I]PL[S/A]NAWK (SEQ ID NO: 75) or NPQL (SEQ ID NO: 76) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 26, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 27, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 28, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 29, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 30, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 31, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 32, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 33, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 34, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 35, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 36, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 37, and a polypeptide having at least 80% sequence identity to the

polypeptide shown in SEQ ID NO: 38; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 93, and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [V/I]PL[S/A]NAWK (SEQ ID NO: 75) or NPQL (SEQ ID NO: 76) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 26, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 27, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 28, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 29, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 30, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 31, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 32, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 33, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 34, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 35, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 36, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 37, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 38; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 94. and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [V/I]PL[S/A]NAWK (SEQ ID NO: 75) or NPQL (SEQ ID NO: 76) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 26, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 27, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 28, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 29, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 30, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 31, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 32, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 33, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 34, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 35, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 36, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 37, and a polypeptide having at least 80% sequence identity to the

polypeptide shown in SEQ ID NO: 38; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 95, and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [V/I]PL[S/A]NAWK (SEQ ID NO:

5 75) or NPQL (SEQ ID NO: 76) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 26, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 27, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 28, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 29, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 30, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 31, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 32, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 33, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 34, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 35, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 36, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 37, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 38; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 96, and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [V/I]PL[S/A]NAWK (SEQ ID NO:

75) or NPQL (SEQ ID NO: 76) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 26, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 27, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 28, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 29, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 30, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 31, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 32, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 33, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 34, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 35, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 36, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 37, and a polypeptide having at least 80% sequence identity to the

polypeptide shown in SEQ ID NO: 38; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 97, and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [V/I]PL[S/A]NAWK (SEQ ID NO: 75) or NPQL (SEQ ID NO: 76) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 26, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 27, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 28, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 29, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 30, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 31, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 32, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 33, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 34, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 35, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 36, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 37, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 38; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 98, and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs [V/I]PL[S/A]NAWK (SEQ ID NO: 75) or NPQL (SEQ ID NO: 76) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 26, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 27, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 28, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 29, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 30, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 31, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 32, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 33, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 34, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 35, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 36, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 37, and a polypeptide having at least 80% sequence identity to the polypeptide

shown in SEQ ID NO: 38; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 99, and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs P[Q/E]L[W/Y] (SEQ ID NO: 77) or [K/H/E]NAW (SEQ ID NO: 78) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 39, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 40, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 41, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 42, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 43, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 44, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 45, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 46, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 47, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 48, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 49, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 50, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 51; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 82 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs P[Q/E]L[W/Y] (SEQ ID NO: 77) or [K/H/E]NAW (SEQ ID NO: 78) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 39, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 40, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 41, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 42, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 43, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 44, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 45, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 46, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 47, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 48, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 49, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 50, and a polypeptide having at least 80% sequence identity to the

polypeptide shown in SEQ ID NO: 51; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 83 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs P[Q/E]L[W/Y] (SEQ ID NO: 77) or

5 [K/H/E]NAW (SEQ ID NO: 78) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 39, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 40, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 41, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 42, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 43, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 44, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 45, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 46, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 47, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 48, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 49, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 50, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 51; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 84 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs P[Q/E]L[W/Y] (SEQ ID NO: 77) or [K/H/E]NAW (SEQ ID NO: 78) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 39, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 40, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 41, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 42, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 43, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 44, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 45, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 46, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 47, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 48, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 49, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 50, and a polypeptide having at least 80% sequence identity to the

polypeptide shown in SEQ ID NO: 51; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 85 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs P[Q/E]L[W/Y] (SEQ ID NO: 77) or [K/H/E]NAW (SEQ ID NO: 78) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 39, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 40, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 41, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 42, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 43, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 44, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 45, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 46, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 47, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 48, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 49, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 50, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 51; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 86 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs P[Q/E]L[W/Y] (SEQ ID NO: 77) or [K/H/E]NAW (SEQ ID NO: 78) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 39, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 40, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 41, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 42, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 43, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 44, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 45, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 46, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 47, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 48, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 49, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 50, and a polypeptide having at least 80% sequence identity to the

polypeptide shown in SEQ ID NO: 51; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 87 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs P[Q/E]L[W/Y] (SEQ ID NO: 77) or [K/H/E]NAW (SEQ ID NO: 78) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 39, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 40, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 41, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 42, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 43, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 44, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 45, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 46, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 47, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 48, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 49, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 50, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 51; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 88 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs P[Q/E]L[W/Y] (SEQ ID NO: 77) or [K/H/E]NAW (SEQ ID NO: 78) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 39, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 40, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 41, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 42, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 43, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 44, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 45, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 46, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 47, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 48, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 49, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 50, and a polypeptide having at least 80% sequence identity to the

polypeptide shown in SEQ ID NO: 51; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 89 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the P[Q/E]L[W/Y] (SEQ ID NO: 77) or [K/H/E]NAW (SEQ ID NO: 78) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 39, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 40, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 41, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 42, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 43, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 44, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 45, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 46, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 47, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 48, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 49, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 50, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 51; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 90 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs P[Q/E]L[W/Y] (SEQ ID NO: 77) or [K/H/E]NAW (SEQ ID NO: 78) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 39, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 40, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 41, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 42, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 43, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 44, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 45, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 46, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 47, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 48, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 49, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 50, and a polypeptide having at least 80% sequence identity to the

polypeptide shown in SEQ ID NO: 51; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 91 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs P[Q/E]L[W/Y] (SEQ ID NO: 77) or [K/H/E]NAW (SEQ ID NO: 78) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 39, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 40, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 41, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 42, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 43, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 44, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 45, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 46, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 47, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 48, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 49, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 50, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 51; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 92 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs P[Q/E]L[W/Y] (SEQ ID NO: 77) or [K/H/E]NAW (SEQ ID NO: 78) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 39, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 40, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 41, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 42, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 43, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 44, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 45, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 46, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 47, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 48, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 49, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 50, and a polypeptide having at least 80% sequence identity to the

polypeptide shown in SEQ ID NO: 51; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 93 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs P[Q/E]L[W/Y] (SEQ ID NO: 77) or [K/H/E]NAW (SEQ ID NO: 78) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 39, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 40, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 41, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 42, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 43, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 44, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 45, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 46, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 47, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 48, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 49, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 50, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 51; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 94 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs P[Q/E]L[W/Y] (SEQ ID NO: 77) or [K/H/E]NAW (SEQ ID NO: 78) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 39, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 40, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 41, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 42, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 43, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 44, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 45, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 46, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 47, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 48, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 49, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 50, and a polypeptide having at least 80% sequence identity to the

polypeptide shown in SEQ ID NO: 51; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 95 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs P[Q/E]L[W/Y] (SEQ ID NO: 77) or [K/H/E]NAW (SEQ ID NO: 78) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 39, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 40, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 41, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 42, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 43, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 44, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 45, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 46, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 47, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 48, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 49, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 50, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 51; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 96 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs P[Q/E]L[W/Y] (SEQ ID NO: 77) or [K/H/E]NAW (SEQ ID NO: 78) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 39, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 40, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 41, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 42, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 43, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 44, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 45, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 46, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 47, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 48, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 49, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 50, and a polypeptide having at least 80% sequence identity to the

polypeptide shown in SEQ ID NO: 51; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 97 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs P[Q/E]L[W/Y] (SEQ ID NO: 77) or [K/H/E]NAW (SEQ ID NO: 78) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 39, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 40, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 41, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 42, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 43, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 44, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 45, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 46, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 47, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 48, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 49, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 50, and a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 51; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 98 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising at least 10 ppm of a NUC1 or NUC1A DNase comprising one or both of the motifs P[Q/E]L[W/Y] (SEQ ID NO: 77) or [K/H/E]NAW (SEQ ID NO: 78) preferably the polypeptide having DNase activity is selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 39, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 40, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 41, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 42, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 43, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 44, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 45, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 46, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 47, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 48, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 49, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 50, and a polypeptide having at least 80% sequence identity to the

polypeptide shown in SEQ ID NO: 51; and at least 10 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 99 and at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising;

a) at least 0.01 ppm of a DNase selected from; a obtainable from *Bacillus licheniformis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 65, a DNase obtainable from *Bacillus subtilis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 66, a DNase obtainable from *Aspergillus oryzae* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 67 or a DNase obtainable from *Trichoderma harzianum* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 68; and

b) at least 0.01 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 82, and

c) at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising;

a) at least 0.01 ppm of a DNase selected from; a obtainable from *Bacillus licheniformis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 65, a DNase obtainable from *Bacillus subtilis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 66, a DNase obtainable from *Aspergillus oryzae* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 67 or a DNase obtainable from *Trichoderma harzianum* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 68; and

b) at least 0.01 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 83, and

c) at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising;

a) at least 0.01 ppm of a DNase selected from; a obtainable from *Bacillus licheniformis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 65, a DNase obtainable from *Bacillus subtilis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 66, a DNase obtainable from *Aspergillus oryzae* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 67 or a DNase obtainable from *Trichoderma harzianum* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 68; and

b) at least 0.01 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 84, and

c) at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising;

a) at least 0.01 ppm of a DNase selected from; a obtainable from *Bacillus licheniformis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 65, a DNase obtainable from *Bacillus subtilis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 66, a DNase obtainable from *Aspergillus oryzae* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 67 or a DNase obtainable from *Trichoderma harzianum* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 68; and

b) at least 0.01 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 86, and

c) at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising;

a) at least 0.01 ppm of a DNase selected from; a obtainable from *Bacillus licheniformis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to

the polypeptide shown in SEQ ID NO: 65, a DNase obtainable from *Bacillus subtilis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 66, a DNase obtainable from *Aspergillus oryzae* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 67 or a DNase obtainable from *Trichoderma harzianum* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 68; and

b) at least 0.01 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 88, and

c) at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising;

a) at least 0.01 ppm of a DNase selected from; a obtainable from *Bacillus licheniformis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 65, a DNase obtainable from *Bacillus subtilis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 66, a DNase obtainable from *Aspergillus oryzae* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 67 or a DNase obtainable from *Trichoderma harzianum* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 68; and

b) at least 0.01 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 89, and

c) at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising;

a) at least 0.01 ppm of a DNase selected from; a obtainable from *Bacillus licheniformis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 65, a DNase obtainable from *Bacillus subtilis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the

polypeptide shown in SEQ ID NO: 66, a DNase obtainable from *Aspergillus oryzae* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 67 or a DNase obtainable from *Trichoderma harzianum* having

5 at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 68; and

b) at least 0.01 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 90, and

10 c) at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising;

a) at least 0.01 ppm of a DNase selected from; a obtainable from *Bacillus licheniformis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to

15 the polypeptide shown in SEQ ID NO: 65, a DNase obtainable from *Bacillus subtilis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 66, a DNase obtainable from *Aspergillus oryzae* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least

20 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 67 or a DNase obtainable from *Trichoderma harzianum* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 68; and

25 b) at least 0.01 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 91, and

c) at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising;

a) at least 0.01 ppm of a DNase selected from; a obtainable from *Bacillus licheniformis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to

30 the polypeptide shown in SEQ ID NO: 65, a DNase obtainable from *Bacillus subtilis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 66, a DNase obtainable from *Aspergillus oryzae* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least

35 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the

polypeptide shown in SEQ ID NO: 67 or a DNase obtainable from *Trichoderma harzianum* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 68; and

5        b) at least 0.01 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 92, and

c) at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising;

10        a) at least 0.01 ppm of a DNase selected from; a obtainable from *Bacillus licheniformis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 65, a DNase obtainable from *Bacillus subtilis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 66, a DNase obtainable from *Aspergillus oryzae* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 67 or a DNase obtainable from *Trichoderma harzianum* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 68; and

20        b) at least 0.01 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 93, and

c) at least one cleaning component.

25        One preferred embodiment relates to a cleaning composition comprising;

30        a) at least 0.01 ppm of a DNase selected from; a obtainable from *Bacillus licheniformis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 65, a DNase obtainable from *Bacillus subtilis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 66, a DNase obtainable from *Aspergillus oryzae* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 67 or a DNase obtainable from *Trichoderma harzianum* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%,

at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 68; and

b) at least 0.01 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 94, and

5 c) at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising;

a) at least 0.01 ppm of a DNase selected from; a obtainable from *Bacillus licheniformis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 65, a DNase obtainable from *Bacillus subtilis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 66, a DNase obtainable from *Aspergillus oryzae* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 67 or a DNase obtainable from *Trichoderma harzianum* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 68; and

20 b) at least 0.01 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 95, and

c) at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising;

a) at least 0.01 ppm of a DNase selected from; a obtainable from *Bacillus licheniformis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 65, a DNase obtainable from *Bacillus subtilis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 66, a DNase obtainable from *Aspergillus oryzae* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 67 or a DNase obtainable from *Trichoderma harzianum* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 68; and

b) at least 0.01 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 96, and

c) at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising;

5 a) at least 0.01 ppm of a DNase selected from; a obtainable from *Bacillus licheniformis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 65, a DNase obtainable from *Bacillus subtilis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 66, a DNase obtainable from *Aspergillus oryzae* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 67 or a DNase obtainable from *Trichoderma harzianum* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 68; and

b) at least 0.01 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 97, and

20 c) at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising;

a) at least 0.01 ppm of a DNase selected from; a obtainable from *Bacillus licheniformis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 65, a DNase obtainable from *Bacillus subtilis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 66, a DNase obtainable from *Aspergillus oryzae* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 67 or a DNase obtainable from *Trichoderma harzianum* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 68; and

b) at least 0.01 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 98, and

c) at least one cleaning component.

One preferred embodiment relates to a cleaning composition comprising;

a) at least 0.01 ppm of a DNase selected from; a obtainable from *Bacillus licheniformis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 65, a DNase obtainable from *Bacillus subtilis* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 66, a DNase obtainable from *Aspergillus oryzae* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 67 or a DNase obtainable from *Trichoderma harzianum* having at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% sequence identity to the polypeptide shown in SEQ ID NO: 68; and

b) at least 0.01 ppm of hexosaminidase having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 99, and

c) at least one cleaning component.

The choice of cleaning components may include, for textile care, the consideration of the type of textile to be cleaned, the type and/or degree of soiling, the temperature at which cleaning is to take place, and the formulation of the detergent product. Although components mentioned below are categorized by general header according to a particular functionality, this is not to be construed as a limitation, as a component may comprise additional functionalities as will be appreciated by the skilled artisan.

#### Surfactants

The cleaning composition may comprise one or more surfactants, which may be anionic and/or cationic and/or non-ionic and/or semi-polar and/or zwitterionic, or a mixture thereof. In a particular embodiment, the detergent composition includes a mixture of one or more nonionic surfactants and one or more anionic surfactants. The surfactant(s) is typically present at a level of from about 0.1% to 60% by weight, such as about 1% to about 40%, or about 3% to about 20%, or about 3% to about 10%. The surfactant(s) is chosen based on the desired cleaning application, and may include any conventional surfactant(s) known in the art.

When included therein the detergent will usually contain from about 0.1% to about 40% by weight of an anionic surfactant, such as from about 0.25% to about 30%, including from about 0.5% to about 15%, from about 1% to about 10%, from about 5% to about 15%, or from about 15% to about 20%, or from about 20% to about 25% of an anionic surfactant. Non-limiting examples of anionic

surfactants include sulfates and sulfonates, in particular, linear alkylbenzenesulfonates (LAS), isomers of LAS, branched alkylbenzenesulfonates (BABS), phenylalkanesulfonates, alpha-olefinsulfonates (AOS), olefin sulfonates, alkene sulfonates, alkane-2,3-diylbis(sulfates), hydroxyalkanesulfonates and disulfonates, alkyl sulfates (AS) such as sodium dodecyl sulfate (SDS), fatty alcohol sulfates (FAS), primary alcohol sulfates (PAS), alcohol ethersulfates (AES or AEOS or FES, also known as alcohol ethoxysulfates or fatty alcohol ether sulfates), secondary alkanesulfonates (SAS), paraffin sulfonates (PS), ester sulfonates, sulfonated fatty acid glycerol esters, alpha-sulfo fatty acid methyl esters (alpha-SFMe or SES) including methyl ester sulfonate (MES), alkyl- or alkenylsuccinic acid, dodecenyl/tetradecenyl succinic acid (DTSA), fatty acid derivatives of amino acids, diesters and monoesters of sulfo-succinic acid or salt of fatty acids (soap), and combinations thereof.

When included therein the detergent will usually contain from about 0.1% to about 40% by weight of a cationic surfactant, for example from about 0.5% to about 30%, in particular from about 1% to about 20%, from about 3% to about 10%, such as from about 3% to about 5%, from about 8% to about 12% or from about 10% to about 12%. Non-limiting examples of cationic surfactants include alkyldimethylethanolamine quat (ADMEAQ), cetyltrimethylammonium bromide (CTAB), dimethyldistearylammmonium chloride (DSDMAC), and alkylbenzyldimethylammonium, alkyl quaternary ammonium compounds, alkoxylated quaternary ammonium (AQA) compounds, ester quats, and combinations thereof.

When included therein the detergent will usually contain from about 0.2% to about 40% by weight of a nonionic surfactant, for example from about 0.5% to about 30%, in particular from about 1% to about 20%, from about 3% to about 10%, such as from about 3% to about 5%, from about 8% to about 12%, or from about 10% to about 12%. Non-limiting examples of nonionic surfactants include alcohol ethoxylates (AE or AEO), alcohol propoxylates, propoxylated fatty alcohols (PFA), alkoxylated fatty acid alkyl esters, such as ethoxylated and/or propoxylated fatty acid alkyl esters, alkylphenol ethoxylates (APE), nonylphenol ethoxylates (NPE), alkylpolyglycosides (APG), alkoxylated amines, fatty acid monoethanolamides (FAM), fatty acid diethanolamides (FADA), ethoxylated fatty acid monoethanolamides (EFAM), propoxylated fatty acid monoethanolamides (PFAM), polyhydroxyalkyl fatty acid amides, or N-acyl N-alkyl derivatives of glucosamine (glucamides, GA, or fatty acid glucamides, FAGA), as well as products available under the trade names SPAN and TWEEN, and combinations thereof.

When included therein the detergent will usually contain from about 0.01 to about 10 % by weight of a semipolar surfactant. Non-limiting examples of semipolar surfactants include amine oxides (AO) such as alkyldimethylamineoxide, N-(coco alkyl)-N,N-dimethylamine oxide and N-(tallow-alkyl)-N,N-bis(2-hydroxyethyl)amine oxide, , and combinations thereof.

When included therein the detergent will usually contain from about 0.01 % to about 10 % by weight of a zwitterionic surfactant. Non-limiting examples of zwitterionic surfactants include betaines such as alkyldimethylbetaines, sulfobetaines, and combinations thereof.

#### Builders and Co-Builders

5 The detergent composition may contain about 0-65% by weight, such as from about 0.1% to about 65%, about 0.5% to about 60%, from about 1% to about 60%, from about 5% to about 60%, of a detergent builder or co-builder, or a mixture thereof. In a dish wash detergent, the level of builder is typically 40-65%, particularly 50-65%. The builder and/or co-builder may particularly be a chelating agent that forms water-soluble complexes with Ca and Mg. Any builder and/or co-builder known in  
10 the art for use in cleaning detergents may be utilized. Non-limiting examples of builders include zeolites, diphosphates (pyrophosphates), triphosphates such as sodium triphosphate (STP or STPP), carbonates such as sodium carbonate, soluble silicates such as sodium metasilicate, layered silicates (e.g., SKS-6 from Hoechst), ethanolamines such as 2-aminoethan-1-ol (MEA), diethanolamine (DEA, also known as 2,2'-iminodiethan-1-ol), triethanolamine (TEA, also known as  
15 2,2',2''-nitrilotriethan-1-ol), and (carboxymethyl)inulin (CMI), and combinations thereof.

The detergent composition may also contain 0-50% by weight, such as about 5% to about 30%, of a detergent co-builder. The detergent composition may include a co-builder alone, or in combination with a builder, for example a zeolite builder. Non-limiting examples of co-builders include homopolymers of polyacrylates or copolymers thereof, such as poly(acrylic acid) (PAA) or  
20 copoly(acrylic acid/maleic acid) (PAA/PMA). Further non-limiting examples include citrate, chelators such as aminocarboxylates, aminopolycarboxylates and phosphonates, and alkyl- or alkenylsuccinic acid. Additional specific examples include 2,2',2''-nitrilotriacetic acid (NTA), ethylenediaminetetraacetic acid (EDTA), diethylenetriaminepentaacetic acid (DTPA), iminodisuccinic acid (IDS), ethylenediamine-N,N'-disuccinic acid (EDDS), methylglycinediacetic acid (MGDA), glutamic acid-N,N'-diacetic acid (GLDA), 1-hydroxyethane-1,1-diphosphonic acid (HEDP),  
25 ethylenediaminetetra(methylenephosphonic acid) (EDTMPA), diethylenetriaminepentakis(methylenephosphonic acid) (DTMPA or DTPMPA), N-(2-hydroxyethyl)iminodiacetic acid (EDG), aspartic acid-N-monoacetic acid (ASMA), aspartic acid-N,N'-diacetic acid (ASDA), aspartic acid-N-monopropionic acid (ASMP), iminodisuccinic acid (IDA), N-(2-sulfomethyl)-aspartic acid (SMAS), N-(2-sulfoethyl)-aspartic acid (SEAS), N-(2-sulfomethyl)-glutamic acid (SMGL), N-(2-sulfoethyl)-glutamic acid (SEGL), N-methyliminodiacetic acid (MIDA),  $\alpha$ -alanine-N,N'-diacetic acid ( $\alpha$ -ALDA), serine-N,N'-diacetic acid (SEDA), isoserine-N,N'-diacetic acid (ISDA), phenylalanine-N,N'-diacetic acid (PHDA), anthranilic acid-N,N'-diacetic acid (ANDA), sulfanilic acid-N,N'-diacetic acid (SLDA), taurine-N,N'-diacetic acid (TUDA) and sulfomethyl-N,N'-diacetic acid (SMDA),  
30 N-(2-hydroxyethyl)ethylenediamine-N,N',N''-triacetic acid (HEDTA), diethanolglycine (DEG), diethylenetriamine penta(methylenephosphonic acid) (DTPMP),

aminotris(methylenephosphonic acid) (ATMP), and combinations and salts thereof. Further exemplary builders and/or co-builders are described in, e.g., WO 09/102854, US 5977053.

### Bleaching Systems

5 The cleaning composition may contain 0-30% by weight, such as from about 0.1% to about 25%, from about 0.5% to about 25%, from about 1% to about 20%, of a bleaching system. Any bleaching system comprising components known in the art for use in cleaning detergents may be utilized. Suitable bleaching system components include sources of hydrogen peroxide; sources of peracids; and bleach catalysts or boosters.

10 Sources of hydrogen peroxide:

Suitable sources of hydrogen peroxide are inorganic persalts, including alkali metal salts such as sodium percarbonate and sodium perborates (usually mono- or tetrahydrate), and hydrogen peroxide—urea (1/1).

Sources of peracids:

15 Peracids may be (a) incorporated directly as preformed peracids or (b) formed in situ in the wash liquor from hydrogen peroxide and a bleach activator (perhydrolysis) or (c) formed in situ in the wash liquor from hydrogen peroxide and a perhydrolase and a suitable substrate for the latter, e.g., an ester.

20 a) Suitable preformed peracids include, but are not limited to, peroxybenzoic acid and its ring-substituted derivatives, peroxy- $\alpha$ -naphthoic acid, peroxyphthalic acid, peroxyauric acid, peroxysebacic acid,  $\epsilon$ -phthalimidoperoxycaproic acid [phthalimidoperoxyhexanoic acid (PAP)], and o-carboxybenzamidoperoxycaproic acid; aliphatic and aromatic diperoxydicarboxylic acids such as diperoxydodecanedioic acid, diperoxyazelaic acid, diperoxysebacic acid, diperoxybrassylic acid, 2-decyldiperoxybutanedioic acid, and  
25 diperoxyphthalic, -isophthalic and -terephthalic acids; perimidic acids; peroxymonosulfuric acid; peroxydisulfuric acid; peroxyphosphoric acid; peroxyisilicic acid; and mixtures of said compounds. It is understood that the peracids mentioned may in some cases be best added as suitable salts, such as alkali metal salts (e.g., Oxone®) or alkaline earth-metal salts.

30 b) Suitable bleach activators include those belonging to the class of esters, amides, imides, nitriles or anhydrides and, where applicable, salts thereof. Suitable examples are tetraacetylenediamine (TAED), sodium 4-[(3,5,5-trimethylhexanoyl)oxy]benzene-1-sulfonate (ISONOBS), sodium 4-(dodecanoyloxy)benzene-1-sulfonate (LOBS), sodium 4-(decanoyloxy)benzene-1-sulfonate, 4-(decanoyloxy)benzoic acid (DOBA), sodium 4-(nonanoyloxy)benzene-1-sulfonate (NOBS), and/or those disclosed in WO98/17767. A particular  
35 family of bleach activators of interest was disclosed in EP624154 and particularly preferred in that family is acetyl triethyl citrate (ATC). ATC or a short chain triglyceride like triacetin has the advantage that they are environmentally friendly. Furthermore, acetyl triethyl citrate and triacetin have good

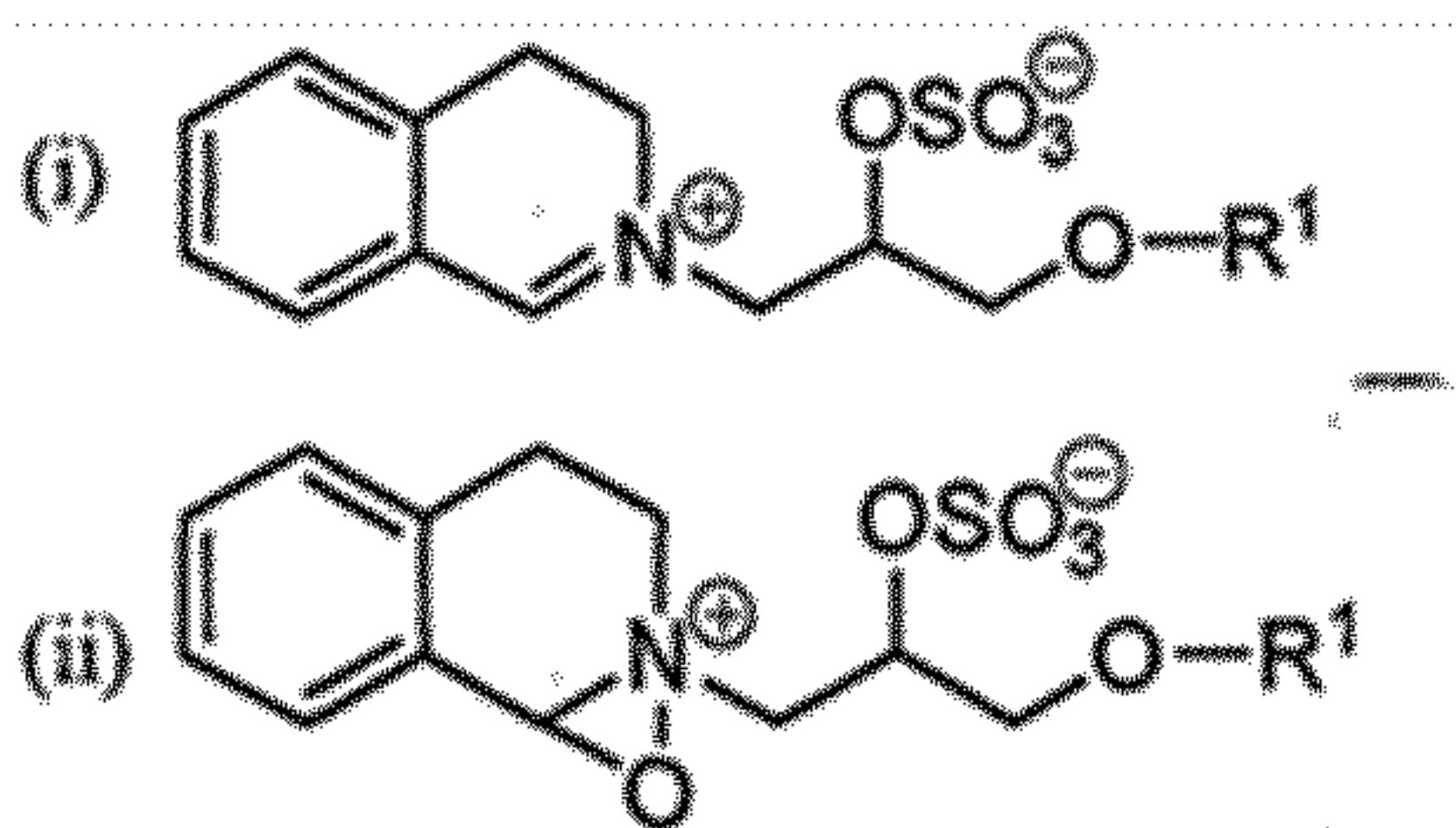
hydrolytical stability in the product upon storage and are efficient bleach activators. Finally, ATC is multifunctional, as the citrate released in the perhydrolysis reaction may function as a builder.

#### Bleach catalysts and boosters

5 The bleaching system may also include a bleach catalyst or booster.

Some non-limiting examples of bleach catalysts that may be used in the compositions of the present invention include manganese oxalate, manganese acetate, manganese-collagen, cobalt-amine catalysts and manganese triazacyclononane (MnTACN) catalysts; particularly preferred are complexes of manganese with 1,4,7-trimethyl-1,4,7-triazacyclononane (Me<sub>3</sub>-TACN) or 1,2,4,7-  
10 tetramethyl-1,4,7-triazacyclononane (Me<sub>4</sub>-TACN), in particular Me<sub>3</sub>-TACN, such as the dinuclear manganese complex [(Me<sub>3</sub>-TACN)Mn(O)<sub>3</sub>Mn(Me<sub>3</sub>-TACN)](PF<sub>6</sub>)<sub>2</sub>, and [2,2',2''-nitrilotris(ethane-1,2-diylazanylylidene-κN-methanylylidene)triphenolato-κ<sub>3</sub>O]manganese(III). The bleach catalysts may also be other metal compounds; such as iron or cobalt complexes.

15 In some embodiments, where a source of a peracid is included, an organic bleach catalyst or bleach booster may be used having one of the following formulae:



(iii) and mixtures thereof; wherein each R<sub>1</sub> is independently a branched alkyl group containing  
20 from 9 to 24 carbons or linear alkyl group containing from 11 to 24 carbons, preferably each R<sub>1</sub> is independently a branched alkyl group containing from 9 to 18 carbons or linear alkyl group containing from 11 to 18 carbons, more preferably each R<sub>1</sub> is independently selected from the group consisting of 2-propylheptyl, 2-butyloctyl, 2-pentylnonyl, 2-hexyldecyl, dodecyl, tetradecyl, hexadecyl, octadecyl, isononyl, isodecyl, isotridecyl and isopentadecyl.

25 Other exemplary bleaching systems are described, e.g. in WO2007/087258, WO2007/087244, WO2007/087259, EP1867708 (Vitamin K) and WO2007/087242. Suitable photobleaches may for example be sulfonated zinc or aluminium phthalocyanines.

#### Metal care agents

30 Metal care agents may prevent or reduce the tarnishing, corrosion or oxidation of metals, including aluminium, stainless steel and non-ferrous metals, such as silver and copper. Suitable examples include one or more of the following:

(a) benzotriazoles, including benzotriazole or bis-benzotriazole and substituted derivatives thereof. Benzotriazole derivatives are those compounds in which the available substitution sites on the aromatic ring are partially or completely substituted. Suitable substituents include linear or

branch-chain Ci-C20- alkyl groups (e.g., C1-C20- alkyl groups) and hydroxyl, thio, phenyl or halogen such as fluorine, chlorine, bromine and iodine.

(b) metal salts and complexes chosen from the group consisting of zinc, manganese, titanium, zirconium, hafnium, vanadium, cobalt, gallium and cerium salts and/or complexes, the metals being in one of the oxidation states II, III, IV, V or VI. In one aspect, suitable metal salts and/or metal complexes may be chosen from the group consisting of Mn(II) sulphate, Mn(II) citrate, Mn(II) stearate, Mn(II) acetylacetonate,  $K^+TiF_6$  (e.g.,  $K_2TiF_6$ ),  $K^+ZrF_6$  (e.g.,  $K_2ZrF_6$ ),  $CoSO_4$ ,  $Co(NO_3)_2$  and  $Ce(NO_3)_3$ , zinc salts, for example zinc sulphate, hydrozincite or zinc acetate.;

(c) silicates, including sodium or potassium silicate, sodium disilicate, sodium metasilicate, crystalline phyllosilicate and mixtures thereof.

Further suitable organic and inorganic redox-active substances that act as silver/copper corrosion inhibitors are disclosed in WO 94/26860 and WO 94/26859. Preferably the composition of the invention comprises from 0.1 to 5% by weight of the composition of a metal care agent, preferably the metal care agent is a zinc salt.

#### Hydrotropes

The cleaning composition may contain 0-10% by weight, for example 0-5% by weight, such as about 0.5 to about 5%, or about 3% to about 5%, of a hydrotrope. Any hydrotrope known in the art for use in detergents may be utilized. Non-limiting examples of hydrotropes include sodium benzenesulfonate, sodium p-toluene sulfonate (STS), sodium xylene sulfonate (SXS), sodium cumene sulfonate (SCS), sodium cymene sulfonate, amine oxides, alcohols and polyglycoethers, sodium hydroxynaphthoate, sodium hydroxynaphthalene sulfonate, sodium ethylhexyl sulfate, and combinations thereof.

#### Polymers

The cleaning composition may contain 0-10% by weight, such as 0.5-5%, 2-5%, 0.5-2% or 0.2-1% of a polymer. Any polymer known in the art for use in detergents may be utilized. The polymer may function as a co-builder as mentioned above, or may provide antiredeposition, fiber protection, soil release, dye transfer inhibition, grease cleaning and/or anti-foaming properties. Some polymers may have more than one of the above-mentioned properties and/or more than one of the below-mentioned motifs. Exemplary polymers include (carboxymethyl)cellulose (CMC), poly(vinyl alcohol) (PVA), poly(vinylpyrrolidone) (PVP), poly(ethyleneglycol) or poly(ethylene oxide) (PEG), ethoxylated poly(ethyleneimine), carboxymethyl inulin (CMI), and polycarboxylates such as PAA, PAA/PMA, poly-aspartic acid, and lauryl methacrylate/acrylic acid copolymers, hydrophobically modified CMC (HM-CMC) and silicones, copolymers of terephthalic acid and oligomeric glycols, copolymers of poly(ethylene terephthalate) and poly(oxyethylene terephthalate) (PET-POET), PVP, poly(vinylimidazole) (PVI), poly(vinylpyridine-N-oxide) (PVPO or PVPNO) and polyvinylpyrrolidone-

vinylimidazole (PVPVI). Suitable examples include PVP-K15, PVP-K30, ChromaBond S-400, ChromaBond S-403E and Chromabond S-100 from Ashland Aqualon, and Sokalan® HP 165, Sokalan® HP 50 (Dispersing agent), Sokalan® HP 53 (Dispersing agent), Sokalan® HP 59 (Dispersing agent), Sokalan® HP 56 (dye transfer inhibitor), Sokalan® HP 66 K (dye transfer inhibitor) from BASF. Further exemplary polymers include sulfonated polycarboxylates, polyethylene oxide and polypropylene oxide (PEO-PPO) and diquaternium ethoxy sulfate. Other exemplary polymers are disclosed in, e.g., WO 2006/130575. Salts of the above-mentioned polymers are also contemplated. Particularly preferred polymer is ethoxylated homopolymer Sokalan® HP 20 from BASF, which helps to prevent redeposition of soil in the wash liquor.

### Fabric hueing agents

The cleaning composition of the present invention may also include fabric hueing agents such as dyes or pigments, which when formulated in detergent compositions can deposit onto a fabric when said fabric is contacted with a wash liquor comprising said detergent compositions and thus altering the tint of said fabric through absorption/reflection of visible light. Fluorescent whitening agents emit at least some visible light. In contrast, fabric hueing agents alter the tint of a surface as they absorb at least a portion of the visible light spectrum. Suitable fabric hueing agents include dyes and dye-clay conjugates, and may also include pigments. Suitable dyes include small molecule dyes and polymeric dyes. Suitable small molecule dyes include small molecule dyes selected from the group consisting of dyes falling into the Colour Index (C.I.) classifications of Direct Blue, Direct Red, Direct Violet, Acid Blue, Acid Red, Acid Violet, Basic Blue, Basic Violet and Basic Red, or mixtures thereof, for example as described in WO2005/03274, WO2005/03275, WO2005/03276 and EP1876226 (hereby incorporated by reference). The detergent composition preferably comprises from about 0.00003 wt% to about 0.2 wt%, from about 0.00008 wt% to about 0.05 wt%, or even from about 0.0001 wt% to about 0.04 wt% fabric hueing agent. The composition may comprise from 0.0001 wt% to 0.2 wt% fabric hueing agent, this may be especially preferred when the composition is in the form of a unit dose pouch. Suitable hueing agents are also disclosed in, e.g. WO 2007/087257 and WO2007/087243.

### Enzymes

The cleaning composition may comprise one or more additional enzymes such as one or more lipase, cutinase, an amylase, carbohydrase, cellulase, pectinase, mannanase, arabinase, galactanase, xylanase, oxidase, e.g., a laccase, and/or peroxidase.

In general, the properties of the selected enzyme(s) should be compatible with the selected detergent, (i.e., pH-optimum, compatibility with other enzymatic and non-enzymatic ingredients, etc.), and the enzyme(s) should be present in effective amounts.

## Proteases

Suitable proteases for the compositions of the invention include those of bacterial, fungal, plant, viral or animal origin e.g. vegetable or microbial origin. Microbial origin is preferred. Chemically modified or protein engineered mutants are included. It may be an alkaline protease, such as a serine protease or a metalloprotease. A serine protease may for example be of the S1 family, such as trypsin, or the S8 family such as subtilisin. A metalloproteases protease may for example be a thermolysin from e.g. family M4 or other metalloprotease such as those from M5, M7 or M8 families.

Examples of subtilases are those derived from *Bacillus* such as *Bacillus lentus*, *Bacillus alkalophilus*, *Bacillus subtilis*, *Bacillus amyloliquefaciens*, *Bacillus pumilus* and *Bacillus gibsonii* described in; US7262042 and WO09/021867. *Subtilisin lentus*, *Subtilisin Novo*, *subtilisin Carlsberg*, *Bacillus licheniformis*, *subtilisin BPN'*, *subtilisin 309*, *subtilisin 147* and *subtilisin 168* and e.g. protease PD138 described in (WO93/18140). Other useful proteases may be those described in WO01/016285 and WO02/016547. Examples of trypsin-like proteases are trypsin (e.g. of porcine or bovine origin) and the *Fusarium* protease described in WO94/25583 and WO05/040372, and the chymotrypsin proteases derived from *Cellulomonas* described in WO05/052161 and WO05/052146.

A further preferred protease is the alkaline protease from *Bacillus lentus* DSM 5483, as described for example in WO95/23221, and variants thereof which are described in WO92/21760, WO95/23221, EP1921147 and EP1921148.

Examples of metalloproteases are the neutral metalloprotease as described in WO07/044993 (Proctor & Gamble/Genencor Int.) such as those derived from *Bacillus amyloliquefaciens*.

Examples of useful proteases are the variants described in: WO89/06279, WO92/19729, WO96/034946, WO98/20115, WO98/20116, WO99/011768, WO01/44452, WO03/006602, WO04/03186, WO04/041979, WO07/006305, WO11/036263, WO11/036264, especially the variants with substitutions in one or more of the following positions: 3, 4, 9, 15, 24, 27, 42, 55, 59, 60, 66, 74, 85, 96, 97, 98, 99, 100, 101, 102, 104, 116, 118, 121, 126, 127, 128, 154, 156, 157, 158, 161, 164, 176, 179, 182, 185, 188, 189, 193, 198, 199, 200, 203, 206, 211, 212, 216, 218, 226, 229, 230, 239, 246, 255, 256, 268 and 269 wherein the positions correspond to the positions of the *Bacillus lentus* protease shown in SEQ ID NO 79. More preferred the protease variants may comprise one or more of the mutations selected from the group consisting of: S3T, V4I, S9R, S9E, A15T, S24G, S24R, K27R, N42R, S55P, G59E, G59D, N60D, N60E, V66A, N74D, S85R, A96S, S97G, S97D, S97A, S97SD, S99E, S99D, S99G, S99M, S99N, S99R, S99H, S101A, V102I, V102Y, V102N, S104A, G116V, G116R, H118D, H118N, A120S, S126L, P127Q, S128A, S154D, A156E, G157D, G157P, S158E, Y161A, R164S, Q176E, N179E, S182E, Q185N, A188P, G189E, V193M, N198D, V199I, Y203W, S206G, L211Q, L211D, N212D, N212S, M216S,

A226V, K229L, Q230H, Q239R, N246K, N255W, N255D, N255E, L256E, L256D T268A and R269H. The protease variants are preferably variants of the *Bacillus lentus* protease (Savinase®) shown in SEQ ID NO 79, the *Bacillus amylolichenifaciens* protease (BPN') shown in SEQ ID NO 80. The protease variants preferably have at least 80 % sequence identity to SEQ ID NO 79 or  
 5 SEQ ID NO 80 of WO 2016/001449.

A protease variant comprising a substitution at one or more positions corresponding to positions 171, 173, 175, 179, or 180 of SEQ ID NO: 81, wherein said protease variant has a sequence identity of at least 75% but less than 100% to SEQ ID NO: 81.

Suitable commercially available protease enzymes include those sold under the trade  
 10 names Alcalase®, Duralase™, Durazym™, Relase®, Relase® Ultra, Savinase®, Savinase® Ultra, Primase®, Polarzyme®, Kannase®, Liquanase®, Liquanase® Ultra, Ovozime®, Coronase®, Coronase® Ultra, Blaze®, Blaze Evity® 100T, Blaze Evity® 125T, Blaze Evity® 150T, Neutrase®, Everlase® and Esperase® (Novozymes A/S), those sold under the tradename Maxatase®, Maxacal®, Maxapem®, Purafect Ox®, Purafect OxP®, Puramax®, FN2®, FN3®,  
 15 FN4®, Excellase®, Excellenz P1000™, Excellenz P1250™, Eraser®, Preferenz P100™, Purafect Prime®, Preferenz P110™, Effectenz P1000™, Purafect®™, Effectenz P1050™, Purafect Ox®™, Effectenz P2000™, Purafast®, Properase®, Opticlean® and Optimase® (Danisco/DuPont), Axapem™ (Gist-Brocades N.V.), BLAP (sequence shown in Figure 29 of US5352604) and variants hereof (Henkel AG) and KAP (*Bacillus alkalophilus* subtilisin) from  
 20 Kao.

### Cellulases

Suitable cellulases include those of bacterial or fungal origin. Chemically modified or protein engineered mutants are included. Suitable cellulases include cellulases from the genera *Bacillus*, *Pseudomonas*, *Humicola*, *Fusarium*, *Thielavia*, *Acremonium*, e.g., the fungal cellulases produced  
 25 from *Humicola insolens*, *Myceliophthora thermophila* and *Fusarium oxysporum* disclosed in US 4,435,307, US 5,648,263, US 5,691,178, US 5,776,757 and WO 89/09259.

Especially suitable cellulases are the alkaline or neutral cellulases having colour care benefits. Examples of such cellulases are cellulases described in EP 0 495 257, EP 0 531 372, WO 96/11262, WO 96/29397, WO 98/08940. Other examples are cellulase variants such as those described in  
 30 WO 94/07998, EP 0 531 315, US 5,457,046, US 5,686,593, US 5,763,254, WO 95/24471, WO 98/12307 and WO99/001544.

Other cellulases are endo-beta-1,4-glucanase enzyme having a sequence of at least 97% identity to the amino acid sequence of position 1 to position 773 of SEQ ID NO:2 of WO 2002/099091 or a family 44 xyloglucanase, which a xyloglucanase enzyme having a sequence of at least 60% identity  
 35 to positions 40-559 of SEQ ID NO: 2 of WO 2001/062903.

Commercially available cellulases include Celluzyme™, and Carezyme™ (Novozymes A/S) Carezyme Premium™ (Novozymes A/S), Celluclean™ (Novozymes A/S), Celluclean Classic™

(Novozymes A/S), Cellusoft™ (Novozymes A/S), Whitezyme™ (Novozymes A/S), Clazinase™, and Puradax HA™ (Genencor International Inc.), and KAC-500(B)™ (Kao Corporation).

### **Mannanases**

Suitable mannanases include those of bacterial or fungal origin. Chemically or genetically modified mutants are included. The mannanase may be an alkaline mannanase of Family 5 or 26. It may be a wild-type from *Bacillus* or *Humicola*, particularly *B. agaradhaerens*, *B. licheniformis*, *B. halodurans*, *B. clausii*, or *H. insolens*. Suitable mannanases are described in WO 1999/064619. A commercially available mannanase is Mannaway (Novozymes A/S).

### **Peroxidases/Oxidases**

Suitable peroxidases/oxidases include those of plant, bacterial or fungal origin. Chemically modified or protein engineered mutants are included. Examples of useful peroxidases include peroxidases from *Coprinus*, e.g., from *C. cinereus*, and variants thereof as those described in WO 93/24618, WO 95/10602, and WO 98/15257. Commercially available peroxidases include Guardzyme™ (Novozymes A/S).

### **Lipases and Cutinases:**

Suitable lipases and cutinases include those of bacterial or fungal origin. Chemically modified or protein engineered mutant enzymes are included. Examples include lipase from *Thermomyces*, e.g. from *T. lanuginosus* (previously named *Humicola lanuginosa*) as described in EP258068 and EP305216, cutinase from *Humicola*, e.g. *H. insolens* (WO96/13580), lipase from strains of *Pseudomonas* (some of these now renamed to *Burkholderia*), e.g. *P. alcaligenes* or *P. pseudoalcaligenes* (EP218272), *P. cepacia* (EP331376), *P. sp.* strain SD705 (WO95/06720 & WO96/27002), *P. wisconsinensis* (WO96/12012), GDSSL-type *Streptomyces* lipases (WO10/065455), cutinase from *Magnaporthe grisea* (WO10/107560), cutinase from *Pseudomonas mendocina* (US5,389,536), lipase from *Thermobifida fusca* (WO11/084412), *Geobacillus stearothermophilus* lipase (WO11/084417), lipase from *Bacillus subtilis* (WO11/084599), and lipase from *Streptomyces griseus* (WO11/150157) and *S. pristinaespiralis* (WO12/137147).

Other examples are lipase variants such as those described in EP407225, WO92/05249, WO94/01541, WO94/25578, WO95/14783, WO95/30744, WO95/35381, WO95/22615, WO96/00292, WO97/04079, WO97/07202, WO00/34450, WO00/60063, WO01/92502, WO07/87508 and WO09/109500.

Preferred commercial lipase products include Lipolase™, Lipex™; Lipolex™ and Lipoclean™ (Novozymes A/S), Lumafast (originally from Genencor) and Lipomax (originally from Gist-Brocades).

Still other examples are lipases sometimes referred to as acyltransferases or perhydrolases, e.g. acyltransferases with homology to *Candida antarctica* lipase A (WO10/111143), acyltransferase from *Mycobacterium smegmatis* (WO05/56782), perhydrolases from the CE 7 family (WO09/67279), and variants of the *M. smegmatis* perhydrolase in particular the S54V variant used

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in the commercial product Gentle Power Bleach from Huntsman Textile Effects Pte Ltd (WO10/100028).

### **Amylases:**

Suitable amylases include alpha-amylases and/or a glucoamylases and may be of bacterial or fungal origin. Chemically modified or protein engineered mutants are included. Amylases include, for example, alpha-amylases obtained from *Bacillus*, e.g., a special strain of *Bacillus licheniformis*, described in more detail in GB 1,296,839.

Suitable amylases include amylases having SEQ ID NO: 2 in WO 95/10603 or variants having 90% sequence identity to SEQ ID NO: 3 thereof. Preferred variants are described in WO 94/02597, WO 94/18314, WO 97/43424 and SEQ ID NO: 4 of WO 99/019467, such as variants with substitutions in one or more of the following positions: 15, 23, 105, 106, 124, 128, 133, 154, 156, 178, 179, 181, 188, 190, 197, 201, 202, 207, 208, 209, 211, 243, 264, 304, 305, 391, 408, and 444.

Different suitable amylases include amylases having SEQ ID NO: 6 in WO 02/010355 or variants thereof having 90% sequence identity to SEQ ID NO: 6. Preferred variants of SEQ ID NO: 6 are those having a deletion in positions 181 and 182 and a substitution in position 193.

Other amylases which are suitable are hybrid alpha-amylase comprising residues 1-33 of the alpha-amylase derived from *B. amyloliquefaciens* shown in SEQ ID NO: 6 of WO 2006/066594 and residues 36-483 of the *B. licheniformis* alpha-amylase shown in SEQ ID NO: 4 of WO 2006/066594 or variants having 90% sequence identity thereof. Preferred variants of this hybrid alpha-amylase are those having a substitution, a deletion or an insertion in one of more of the following positions: G48, T49, G107, H156, A181, N190, M197, I201, A209 and Q264. Most preferred variants of the hybrid alpha-amylase comprising residues 1-33 of the alpha-amylase derived from *B. amyloliquefaciens* shown in SEQ ID NO: 6 of WO 2006/066594 and residues 36-483 of SEQ ID NO: 4 are those having the substitutions:

M197T;

H156Y+A181T+N190F+A209V+Q264S; or

G48A+T49I+G107A+H156Y+A181T+N190F+I201F+A209V+Q264S.

Further amylases which are suitable are amylases having SEQ ID NO: 6 in WO 99/019467 or variants thereof having 90% sequence identity to SEQ ID NO: 6. Preferred variants of SEQ ID NO: 6 are those having a substitution, a deletion or an insertion in one or more of the following positions: R181, G182, H183, G184, N195, I206, E212, E216 and K269. Particularly preferred amylases are those having deletion in positions R181 and G182, or positions H183 and G184.

Additional amylases which can be used are those having SEQ ID NO: 1, SEQ ID NO: 3, SEQ ID NO: 2 or SEQ ID NO: 7 of WO 96/023873 or variants thereof having 90% sequence identity to SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3 or SEQ ID NO: 7. Preferred variants of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3 or SEQ ID NO: 7 are those having a substitution, a deletion or an insertion in one or more of the following positions: 140, 181, 182, 183, 184, 195, 206, 212, 243, 260,

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269, 304 and 476, using SEQ ID 2 of WO 96/023873 for numbering. More preferred variants are those having a deletion in two positions selected from 181, 182, 183 and 184, such as 181 and 182, 182 and 183, or positions 183 and 184. Most preferred amylase variants of SEQ ID NO: 1, SEQ ID NO: 2 or SEQ ID NO: 7 are those having a deletion in positions 183 and 184 and a substitution in one or more of positions 140, 195, 206, 243, 260, 304 and 476.

Other amylases which can be used are amylases having SEQ ID NO: 2 of WO 08/153815, SEQ ID NO: 10 in WO 01/66712 or variants thereof having 90% sequence identity to SEQ ID NO: 2 of WO 08/153815 or 90% sequence identity to SEQ ID NO: 10 in WO 01/66712. Preferred variants of SEQ ID NO: 10 in WO 01/66712 are those having a substitution, a deletion or an insertion in one of more of the following positions: 176, 177, 178, 179, 190, 201, 207, 211 and 264.

Further suitable amylases are amylases having SEQ ID NO: 2 of WO 09/061380 or variants having 90% sequence identity to SEQ ID NO: 2 thereof. Preferred variants of SEQ ID NO: 2 are those having a truncation of the C-terminus and/or a substitution, a deletion or an insertion in one of more of the following positions: Q87, Q98, S125, N128, T131, T165, K178, R180, S181, T182, G183, M201, F202, N225, S243, N272, N282, Y305, R309, D319, Q320, Q359, K444 and G475. More preferred variants of SEQ ID NO: 2 are those having the substitution in one of more of the following positions: Q87E,R, Q98R, S125A, N128C, T131I, T165I, K178L, T182G, M201L, F202Y, N225E,R, N272E,R, S243Q,A,E,D, Y305R, R309A, Q320R, Q359E, K444E and G475K and/or deletion in position R180 and/or S181 or of T182 and/or G183. Most preferred amylase variants of SEQ ID NO: 2 are those having the substitutions:

N128C+K178L+T182G+Y305R+G475K;

N128C+K178L+T182G+F202Y+Y305R+D319T+G475K;

S125A+N128C+K178L+T182G+Y305R+G475K; or

S125A+N128C+T131I+T165I+K178L+T182G+Y305R+G475K wherein the variants are C-terminally truncated and optionally further comprises a substitution at position 243 and/or a deletion at position 180 and/or position 181.

Further suitable amylases are amylases having SEQ ID NO: 1 of WO13184577 or variants having 90% sequence identity to SEQ ID NO: 1 thereof. Preferred variants of SEQ ID NO: 1 are those having a substitution, a deletion or an insertion in one of more of the following positions: K176, R178, G179, T180, G181, E187, N192, M199, I203, S241, R458, T459, D460, G476 and G477. More preferred variants of SEQ ID NO: 1 are those having the substitution in one of more of the following positions: K176L, E187P, N192FYH, M199L, I203YF, S241QADN, R458N, T459S, D460T, G476K and G477K and/or deletion in position R178 and/or S179 or of T180 and/or G181. Most preferred amylase variants of SEQ ID NO: 1 are those having the substitutions:

E187P+I203Y+G476K

E187P+I203Y+R458N+T459S+D460T+G476K

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wherein the variants optionally further comprise a substitution at position 241 and/or a deletion at position 178 and/or position 179.

Further suitable amylases are amylases having SEQ ID NO: 1 of WO10104675 or variants having 90% sequence identity to SEQ ID NO: 1 thereof. Preferred variants of SEQ ID NO: 1 are those having a substitution, a deletion or an insertion in one of more of the following positions: N21, D97, V128 K177, R179, S180, I181, G182, M200, L204, E242, G477 and G478. More preferred variants of SEQ ID NO: 1 are those having the substitution in one of more of the following positions: N21D, D97N, V128I K177L, M200L, L204YF, E242QA, G477K and G478K and/or deletion in position R179 and/or S180 or of I181 and/or G182. Most preferred amylase variants of SEQ ID NO: 1 are those having the substitutions:

N21D+D97N+V128I

wherein the variants optionally further comprise a substitution at position 200 and/or a deletion at position 180 and/or position 181.

Other suitable amylases are the alpha-amylase having SEQ ID NO: 12 in WO01/66712 or a variant having at least 90% sequence identity to SEQ ID NO: 12. Preferred amylase variants are those having a substitution, a deletion or an insertion in one of more of the following positions of SEQ ID NO: 12 in WO01/66712: R28, R118, N174; R181, G182, D183, G184, G186, W189, N195, M202, Y298, N299, K302, S303, N306, R310, N314; R320, H324, E345, Y396, R400, W439, R444, N445, K446, Q449, R458, N471, N484. Particular preferred amylases include variants having a deletion of D183 and G184 and having the substitutions R118K, N195F, R320K and R458K, and a variant additionally having substitutions in one or more position selected from the group: M9, G149, G182, G186, M202, T257, Y295, N299, M323, E345 and A339, most preferred a variant that additionally has substitutions in all these positions.

Other examples are amylase variants such as those described in WO2011/098531, WO2013/001078 and WO2013/001087.

Commercially available amylases are Duramyl™, Termamyl™, Fungamyl™, Stainzyme™, Stainzyme Plus™, Natalase™, Liquozyme X and BANTM (from Novozymes A/S), and Rapidase™, Purastar™/Effectenz™, Powerase, Preferenz S1000, Preferenz S100 and Preferenz S110 (from Genencor International Inc./DuPont).

### **Peroxidases/Oxidases**

A peroxidase according to the invention is a peroxidase enzyme comprised by the enzyme classification EC 1.11.1.7, as set out by the Nomenclature Committee of the International Union of Biochemistry and Molecular Biology (IUBMB), or any fragment derived therefrom, exhibiting peroxidase activity.

Suitable peroxidases include those of plant, bacterial or fungal origin. Chemically modified or protein engineered mutants are included. Examples of useful peroxidases include peroxidases from

Coprinopsis, e.g., from *C. cinerea* (EP 179,486), and variants thereof as those described in WO 93/24618, WO 95/10602, and WO 98/15257.

A suitable peroxidase includes a haloperoxidase enzyme, such as chloroperoxidase, bromoperoxidase and compounds exhibiting chloroperoxidase or bromoperoxidase activity.

Haloperoxidases are classified according to their specificity for halide ions. Chloroperoxidases (E.C. 1.11.1.10) catalyze formation of hypochlorite from chloride ions. Preferably, the haloperoxidase is a vanadium haloperoxidase, i.e., a vanadate-containing haloperoxidase. Haloperoxidases have been isolated from many different fungi, in particular from the fungus group dematiaceous hyphomycetes, such as *Caldariomyces*, e.g., *C. fumago*, *Alternaria*, *Curvularia*, e.g., *C. verruculosa* and *C. inaequalis*, *Drechslera*, *Ulocladium* and *Botrytis*.

Haloperoxidases have also been isolated from bacteria such as *Pseudomonas*, e.g., *P. pyrrocinia* and *Streptomyces*, e.g., *S. aureofaciens*.

A suitable oxidase includes in particular, any laccase enzyme comprised by the enzyme classification EC 1.10.3.2, or any fragment derived therefrom exhibiting laccase activity, or a compound exhibiting a similar activity, such as a catechol oxidase (EC 1.10.3.1), an o-aminophenol oxidase (EC 1.10.3.4), or a bilirubin oxidase (EC 1.3.3.5). Preferred laccase enzymes are enzymes of microbial origin. The enzymes may be derived from plants, bacteria or fungi (including filamentous fungi and yeasts). Suitable examples from fungi include a laccase derivable from a strain of *Aspergillus*, *Neurospora*, e.g., *N. crassa*, *Podospora*, *Botrytis*, *Collybia*, *Fomes*, *Lentinus*, *Pleurotus*, *Trametes*, e.g., *T. villosa* and *T. versicolor*, *Rhizoctonia*, e.g., *R. solani*, *Coprinopsis*, e.g., *C. cinerea*, *C. comatus*, *C. friesii*, and *C. plicatilis*, *Psathyrella*, e.g., *P. condelleana*, *Panaeolus*, e.g., *P. papilionaceus*, *Myceliophthora*, e.g., *M. thermophila*, *Schytalidium*, e.g., *S. thermophilum*, *Polyporus*, e.g., *P. pinsitus*, *Phlebia*, e.g., *P. radiata* (WO 92/01046), or *Coriolus*, e.g., *C. hirsutus* (JP 2238885). Suitable examples from bacteria include a laccase derivable from a strain of *Bacillus*. A laccase derived from *Coprinopsis* or *Myceliophthora* is preferred; in particular, a laccase derived from *Coprinopsis cinerea*, as disclosed in WO 97/08325; or from *Myceliophthora thermophila*, as disclosed in WO 95/33836.

#### Dispersants

The cleaning composition of the present invention can also contain dispersants. In particular, powdered detergents may comprise dispersants. Suitable water-soluble organic materials include the homo- or co-polymeric acids or their salts, in which the polycarboxylic acid comprises at least two carboxyl radicals separated from each other by not more than two carbon atoms. Suitable dispersants are for example described in Powdered Detergents, Surfactant science series volume 71, Marcel Dekker, Inc.

Dye Transfer Inhibiting Agents

The cleaning composition of the present invention may also include one or more dye transfer inhibiting agents. Suitable polymeric dye transfer inhibiting agents include, but are not limited to, polyvinylpyrrolidone polymers, polyamine N-oxide polymers, copolymers of N-vinylpyrrolidone and N-vinylimidazole, polyvinylloxazolidones and polyvinylimidazoles or mixtures thereof. When present in a subject composition, the dye transfer inhibiting agents may be present at levels from about 0.0001 % to about 10%, from about 0.01% to about 5% or even from about 0.1% to about 3% by weight of the composition.

Fluorescent whitening agent

The cleaning composition of the present invention will preferably also contain additional components that may tint articles being cleaned, such as fluorescent whitening agent or optical brighteners. Where present the brightener is preferably at a level of about 0.01% to about 0.5%. Any fluorescent whitening agent suitable for use in a laundry detergent composition may be used in the composition of the present invention. The most commonly used fluorescent whitening agents are those belonging to the classes of diaminostilbene-sulfonic acid derivatives, diarylpyrazoline derivatives and bisphenyl-distyryl derivatives. Examples of the diaminostilbene-sulfonic acid derivative type of fluorescent whitening agents include the sodium salts of: 4,4'-bis-(2-diethanolamino-4-anilino-s-triazin-6-ylamino) stilbene-2,2'-disulfonate, 4,4'-bis-(2,4-dianilino-s-triazin-6-ylamino) stilbene-2,2'-disulfonate, 4,4'-bis-(2-anilino-4-(N-methyl-N-2-hydroxy-ethylamino)-s-triazin-6-ylamino) stilbene-2,2'-disulfonate, 4,4'-bis-(4-phenyl-1,2,3-triazol-2-yl)stilbene-2,2'-disulfonate and sodium 5-(2H-naphtho[1,2-d][1,2,3]triazol-2-yl)-2-[(E)-2-phenylvinyl]benzenesulfonate. Preferred fluorescent whitening agents are Tinopal DMS and Tinopal CBS available from Ciba-Geigy AG, Basel, Switzerland. Tinopal DMS is the disodium salt of 4,4'-bis-(2-morpholino-4-anilino-s-triazin-6-ylamino) stilbene-2,2'-disulfonate. Tinopal CBS is the disodium salt of 2,2'-bis-(phenyl-styryl)-disulfonate. Also preferred are fluorescent whitening agents is the commercially available Parawhite KX, supplied by Paramount Minerals and Chemicals, Mumbai, India. Other fluorescers suitable for use in the invention include the 1-3-diaryl pyrazolines and the 7-alkylaminocoumarins. Suitable fluorescent brightener levels include lower levels of from about 0.01, from 0.05, from about 0.1 or even from about 0.2 wt % to upper levels of 0.5 or even 0.75 wt%.

Soil release polymers

The cleaning composition of the present invention may also include one or more soil release polymers which aid the removal of soils from fabrics such as cotton and polyester based fabrics, in particular the removal of hydrophobic soils from polyester based fabrics. The soil release polymers may for example be nonionic or anionic terephthalate based polymers, polyvinyl caprolactam and

related copolymers, vinyl graft copolymers, polyester polyamides see for example Chapter 7 in Powdered Detergents, Surfactant science series volume 71, Marcel Dekker, Inc. Another type of soil release polymers is amphiphilic alkoxyated grease cleaning polymers comprising a core structure and a plurality of alkoxyate groups attached to that core structure. The core structure may comprise a polyalkylenimine structure or a polyalkanolamine structure as described in detail in WO 2009/087523 (hereby incorporated by reference). Furthermore, random graft co-polymers are suitable soil release polymers. Suitable graft co-polymers are described in more detail in WO 2007/138054, WO 2006/108856 and WO 2006/113314 (hereby incorporated by reference). Suitable polyethylene glycol polymers include random graft co-polymers comprising: (i) hydrophilic backbone comprising polyethylene glycol; and (ii) side chain(s) selected from the group consisting of: C4-C25 alkyl group, polypropylene, polybutylene, vinyl ester of a saturated C1-C6 mono-carboxylic acid, C1-C6 alkyl ester of acrylic or methacrylic acid, and mixtures thereof. Suitable polyethylene glycol polymers have a polyethylene glycol backbone with random grafted polyvinyl acetate side chains. The average molecular weight of the polyethylene glycol backbone can be in the range of from 2,000 Da to 20,000 Da, or from 4,000 Da to 8,000 Da. The molecular weight ratio of the polyethylene glycol backbone to the polyvinyl acetate side chains can be in the range of from 1: 1 to 1:5, or from 1: 1.2 to 1:2. The average number of graft sites per ethylene oxide units can be less than 1, or less than 0.8, the average number of graft sites per ethylene oxide units can be in the range of from 0.5 to 0.9, or the average number of graft sites per ethylene oxide units can be in the range of from 0.1 to 0.5, or from 0.2 to 0.4. A suitable polyethylene glycol polymer is Sokalan HP22. Other soil release polymers are substituted polysaccharide structures especially substituted cellulosic structures such as modified cellulose derivatives such as those described in EP 1867808 or WO 2003/040279 (both are hereby incorporated by reference). Suitable cellulosic polymers include cellulose, cellulose ethers, cellulose esters, cellulose amides and mixtures thereof. Suitable cellulosic polymers include anionically modified cellulose, nonionically modified cellulose, cationically modified cellulose, zwitterionically modified cellulose, and mixtures thereof. Suitable cellulosic polymers include methyl cellulose, carboxy methyl cellulose, ethyl cellulose, hydroxyl ethyl cellulose, hydroxyl propyl methyl cellulose, ester carboxy methyl cellulose, and mixtures thereof.

#### Anti-redeposition agents

The cleaning composition of the present invention may also include one or more anti-redeposition agents such as carboxymethylcellulose (CMC), polyvinyl alcohol (PVA), polyvinylpyrrolidone (PVP), polyoxyethylene and/or polyethyleneglycol (PEG), homopolymers of acrylic acid, copolymers of acrylic acid and maleic acid, and ethoxylated polyethyleneimines. The cellulose based polymers described under soil release polymers above may also function as anti-redeposition agents.

#### Rheology Modifiers

The cleaning composition of the present invention may also include one or more rheology modifiers, structurants or thickeners, as distinct from viscosity reducing agents. The rheology

modifiers are selected from the group consisting of non-polymeric crystalline, hydroxy-functional materials, polymeric rheology modifiers which impart shear thinning characteristics to the aqueous liquid matrix of a liquid detergent composition. The rheology and viscosity of the detergent can be modified and adjusted by methods known in the art, for example as shown in EP 2169040.

- 5 Other suitable cleaning composition components include, but are not limited to, anti-shrink agents, anti-wrinkling agents, bactericides, binders, carriers, dyes, enzyme stabilizers, fabric softeners, fillers, foam regulators, hydrotropes, perfumes, pigments, sod suppressors, solvents, and structurants for liquid detergents and/or structure elasticizing agents.

#### Formulation of cleaning compositions

- 10 The cleaning composition of the invention may be in any convenient form, e.g., a bar, a homogenous tablet, a tablet having two or more layers, a pouch having one or more compartments, a regular or compact powder, a granule, a paste, a gel, or a regular, compact or concentrated liquid.

- Pouches can be configured as single or multicompartments. It can be of any form, shape and material which is suitable for hold the composition, e.g. without allowing the release of the composition to release of the composition from the pouch prior to water contact. The pouch is made from water soluble film which encloses an inner volume. Said inner volume can be divided into compartments of the pouch. Preferred films are polymeric materials preferably polymers which are formed into a film or sheet. Preferred polymers, copolymers or derivatives thereof are selected polyacrylates, and water soluble acrylate copolymers, methyl cellulose, carboxy methyl cellulose, sodium dextrin, ethyl cellulose, hydroxyethyl cellulose, hydroxypropyl methyl cellulose, malto dextrin, poly methacrylates, most preferably polyvinyl alcohol copolymers and, hydroxypropyl methyl cellulose (HPMC). Preferably the level of polymer in the film for example PVA is at least about 60%. Preferred average molecular weight will typically be about 20,000 to about 150,000. Films can also be of blended compositions comprising hydrolytically degradable and water soluble polymer blends such as polylactide and polyvinyl alcohol (known under the Trade reference M8630 as sold by MonoSol LLC, Indiana, USA) plus plasticisers like glycerol, ethylene glycerol, propylene glycol, sorbitol and mixtures thereof. The pouches can comprise a solid laundry cleaning composition or part components and/or a liquid cleaning composition or part components separated by the water soluble film. The compartment for liquid components can be different in composition than compartments containing solids: US2009/0011970 A1.

- 30 Detergent ingredients can be separated physically from each other by compartments in water dissolvable pouches or in different layers of tablets. Thereby negative storage interaction between components can be avoided. Different dissolution profiles of each of the compartments can also give rise to delayed dissolution of selected components in the wash solution.

- 35 A liquid or gel detergent, which is not unit dosed, may be aqueous, typically containing at least 20% by weight and up to 95% water, such as up to about 70% water, up to about 65% water, up to about 55% water, up to about 45% water, up to about 35% water. Other types of liquids, including

without limitation, alkanols, amines, diols, ethers and polyols may be included in an aqueous liquid or gel. An aqueous liquid or gel detergent may contain from 0-30% organic solvent. A liquid or gel detergent may be non-aqueous.

## 5 Granular detergent formulations

The composition(s) of the invention may be formulated as a granule for example as a co-granule that combines one or more enzymes. Each enzyme will then be present in more granules securing a more uniform distribution of enzymes in the detergent. This also reduces the physical segregation of different enzymes due to different particle sizes. Methods for producing multi-enzyme co-

10 granulates for the detergent industry are disclosed in the IP.com disclosure IPCOM000200739D.

Another example of formulation of enzymes by the use of co-granulates are disclosed in WO 2013/188331, which relates to a detergent composition comprising (a) a multi-enzyme co- granule; (b) less than 10 wt zeolite (anhydrous basis); and (c) less than 10 wt phosphate salt (anhydrous basis), and the composition additionally comprises from 20 to 80 wt% detergent moisture sink

15 component. The multi-enzyme co-granule may comprise an enzyme blend i.e. at least one DNase and at least one hexosaminidase and one or more enzymes selected from the group consisting of proteases, lipases, cellulases, xyloglucanases, perhydrolases, peroxidases, lipoxygenases, laccases, hemicellulases, proteases, cellulases, cellobiose dehydrogenases, xylanases, phospho

20 lipases, esterases, cutinases, pectinases, mannanases, pectate lyases, keratinases, reductases, oxidases, phenoloxidases, ligninases, pullulanases, tannases, pentosanases, lichenases glucanases, arabinosidases, hyaluronidase, chondroitinase, amylases, and mixtures thereof.

WO 2013/188331 also relates to a method of treating and/or cleaning a surface, preferably a fabric surface comprising the steps of (i) contacting said surface with the detergent composition as claimed and described herein in aqueous wash liquor, (ii) rinsing and/or drying the surface.

25 An embodiment of the invention relates to an enzyme granule/particle comprising the DNase and hexosaminidase. The granule is composed of a core, and optionally one or more coatings (outer layers) surrounding the core. Typically, the granule/particle size, measured as equivalent spherical diameter (volume based average particle size), of the granule is 20-2000 µm, particularly 50-1500 µm, 100-1500 µm or 250-1200 µm. The core may include additional materials

30 such as fillers, fibre materials (cellulose or synthetic fibres), stabilizing agents, solubilising agents, suspension agents, viscosity regulating agents, light spheres, plasticizers, salts, lubricants and fragrances. The core may include binders, such as synthetic polymer, wax, fat, or carbohydrate. The core may comprise a salt of a multivalent cation, a reducing agent, an antioxidant, a peroxide decomposing catalyst and/or an acidic buffer component, typically as a homogenous blend. The

35 core may consist of an inert particle with the enzyme absorbed into it, or applied onto the surface, e.g., by fluid bed coating. The core may have a diameter of 20-2000 µm, particularly 50-1500 µm, 100-1500 µm or 250-1200 µm. The core can be prepared by granulating a blend of the ingredients,

e.g., by a method comprising granulation techniques such as crystallization, precipitation, pan-coating, fluid bed coating, fluid bed agglomeration, rotary atomization, extrusion, prilling, spheronization, size reduction methods, drum granulation, and/or high shear granulation.

Methods for preparing the core can be found in Handbook of Powder Technology; Particle size enlargement by C. E. Capes; Volume 1; 1980; Elsevier.

The core of the enzyme granule/particle may be surrounded by at least one coating, e.g., to improve the storage stability, to reduce dust formation during handling, or for coloring the granule. The optional coating(s) may include a salt coating, or other suitable coating materials, such as polyethylene glycol (PEG), methyl hydroxy-propyl cellulose (MHPC) and polyvinyl alcohol (PVA). Examples of enzyme granules with multiple coatings are shown in WO 93/07263 and WO 97/23606. The coating may be applied in an amount of at least 0.1% by weight of the core, e.g., at least 0.5%, 1% or 5%. The amount may be at most 100%, 70%, 50%, 40% or 30%. The coating is preferably at least 0.1  $\mu\text{m}$  thick, particularly at least 0.5  $\mu\text{m}$ , at least 1  $\mu\text{m}$  or at least 5  $\mu\text{m}$ . In a one embodiment, the thickness of the coating is below 100  $\mu\text{m}$ . In another embodiment, the thickness of the coating is below 60  $\mu\text{m}$ . In an even more particular embodiment the total thickness of the coating is below 40  $\mu\text{m}$ . The coating should encapsulate the core unit by forming a substantially continuous layer. A substantially continuous layer is to be understood as a coating having few or no holes, so that the core unit it is encapsulating/enclosing has few or none uncoated areas. The layer or coating should be homogeneous in thickness. The coating can further contain other materials as known in the art, e.g., fillers, antisticking agents, pigments, dyes, plasticizers and/or binders, such as titanium dioxide, kaolin, calcium carbonate or talc. A salt coating may comprise at least 60% by weight w/w of a salt, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95% or at least 99% by weight w/w. The salt may be added from a salt solution where the salt is completely dissolved or from a salt suspension wherein the fine particles is less than 50  $\mu\text{m}$ , such as less than 10  $\mu\text{m}$  or less than 5  $\mu\text{m}$ . The salt coating may comprise a single salt or a mixture of two or more salts. The salt may be water soluble, and may have a solubility at least 0.1 grams in 100 g of water at 20°C, preferably at least 0.5 g per 100 g water, e.g., at least 1 g per 100 g water, e.g., at least 5 g per 100 g water. The salt may be an inorganic salt, e.g., salts of sulfate, sulfite, phosphate, phosphonate, nitrate, chloride or carbonate or salts of simple organic acids (less than 10 carbon atoms, e.g., 6 or less carbon atoms) such as citrate, malonate or acetate. Examples of cations in these salts are alkali or earth alkali metal ions, the ammonium ion or metal ions of the first transition series, such as sodium, potassium, magnesium, calcium, zinc or aluminium. Examples of anions include chloride, bromide, iodide, sulfate, sulfite, bisulfite, thiosulfate, phosphate, monobasic phosphate, dibasic phosphate, hypophosphite, dihydrogen pyrophosphate, tetraborate, borate, carbonate, bicarbonate, metasilicate, citrate, malate, maleate, malonate, succinate, lactate, formate, acetate, butyrate, propionate, benzoate, tartrate, ascorbate or gluconate. In particular alkali- or earth alkali metal salts of sulfate, sulfite, phosphate, phosphonate, nitrate, chloride or carbonate or salts

of simple organic acids such as citrate, malonate or acetate may be used. The salt in the coating may have a constant humidity at 20°C above 60%, particularly above 70%, above 80% or above 85%, or it may be another hydrate form of such a salt (e.g., anhydrate). The salt coating may be as described in WO 00/01793 or WO 2006/034710. Specific examples of suitable salts are NaCl (CH<sub>20°C</sub>=76%), Na<sub>2</sub>CO<sub>3</sub> (CH<sub>20°C</sub>=92%), NaNO<sub>3</sub> (CH<sub>20°C</sub>=73%), Na<sub>2</sub>HPO<sub>4</sub> (CH<sub>20°C</sub>=95%), Na<sub>3</sub>PO<sub>4</sub> (CH<sub>25°C</sub>=92%), NH<sub>4</sub>Cl (CH<sub>20°C</sub>=79.5%), (NH<sub>4</sub>)<sub>2</sub>HPO<sub>4</sub> (CH<sub>20°C</sub>=93.0%), NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (CH<sub>20°C</sub>=93.1%), (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> (CH<sub>20°C</sub>=81.1%), KCl (CH<sub>20°C</sub>=85%), K<sub>2</sub>HPO<sub>4</sub> (CH<sub>20°C</sub>=92%), KH<sub>2</sub>PO<sub>4</sub> (CH<sub>20°C</sub>=96.5%), KNO<sub>3</sub> (CH<sub>20°C</sub>=93.5%), Na<sub>2</sub>SO<sub>4</sub> (CH<sub>20°C</sub>=93%), K<sub>2</sub>SO<sub>4</sub> (CH<sub>20°C</sub>=98%), KHSO<sub>4</sub> (CH<sub>20°C</sub>=86%), MgSO<sub>4</sub> (CH<sub>20°C</sub>=90%), ZnSO<sub>4</sub> (CH<sub>20°C</sub>=90%) and sodium citrate (CH<sub>25°C</sub>=86%). Other examples include NaH<sub>2</sub>PO<sub>4</sub>, (NH<sub>4</sub>)H<sub>2</sub>PO<sub>4</sub>, CuSO<sub>4</sub>, Mg(NO<sub>3</sub>)<sub>2</sub> and magnesium acetate. The salt may be in anhydrous form, or it may be a hydrated salt, i.e. a crystalline salt hydrate with bound water(s) of crystallization, such as described in WO 99/32595. Specific examples include anhydrous sodium sulfate (Na<sub>2</sub>SO<sub>4</sub>), anhydrous magnesium sulfate (MgSO<sub>4</sub>), magnesium sulfate heptahydrate (MgSO<sub>4</sub>·7H<sub>2</sub>O), zinc sulfate heptahydrate (ZnSO<sub>4</sub>·7H<sub>2</sub>O), sodium phosphate dibasic heptahydrate (Na<sub>2</sub>HPO<sub>4</sub>·7H<sub>2</sub>O), magnesium nitrate hexahydrate (Mg(NO<sub>3</sub>)<sub>2</sub>·6H<sub>2</sub>O), sodium citrate dihydrate and magnesium acetate tetrahydrate. Preferably the salt is applied as a solution of the salt, e.g., using a fluid bed.

One embodiment of the present invention provides a granule, which comprises:

(a) a core comprising a DNase and a hexosaminidase, preferably a β-N-acetylglucosaminidase e.g. a dispersin, and

(b) optionally a coating consisting of one or more layer(s) surrounding the core.

One embodiment of the invention relates to a granule, which comprises:

(a) a core comprising a DNase and a hexosaminidase, preferably a β-N-acetylglucosaminidase e.g. a dispersin, wherein the hexosaminidase is selected from the group consisting of polypeptides comprising an amino acid sequence with;

i) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 82,

ii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 83,

iii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 84,

iv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 85,

- v) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 86,
- 5 vi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 87,
- vii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 88,
- 10 viii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 89,
- ix) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 90,
- 15 x) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 91,
- xi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 92,
- 20 xii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 93,
- xiii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 94,
- 25 xiv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 95,
- 30 xv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 96,
- xvi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 97,
- 35

xvii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 98, and

xviii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 99,

and wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO 13, and

(b) optionally a coating consisting of one or more layer(s) surrounding the core.

One embodiment of the invention relates to a granule, which comprises:

(a) a core comprising a DNase and a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin, wherein the hexosaminidase is selected from the group consisting of polypeptides comprising an amino acid sequence with;

i) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 82,

ii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 83,

iii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 84,

iv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 85,

v) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 86,

vi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 87,

vii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 88,

- viii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 89,
- ix) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 90,
- x) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 91,
- xi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 92,
- xii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 93,
- xiii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 94,
- xiv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 95,
- xv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 96,
- xvi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 97,
- xvii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 98, and
- xviii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 99

and wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at  
least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence  
identity to the amino acid sequence shown in SEQ ID NO 65, and

(b) optionally a coating consisting of one or more layer(s) surrounding the core.

One embodiment of the invention relates to a granule, which comprises:

(a) a core comprising a DNase and a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin, wherein the hexosaminidase is selected from the group consisting of polypeptides comprising an amino acid sequence with;

- 5           i)       at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
              at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
              to the polypeptide shown in SEQ ID NO: 82,
- ii)       at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
              at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
10           to the polypeptide shown in SEQ ID NO: 83,
- iii)       at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
              at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
              to the polypeptide shown in SEQ ID NO: 84,
- iv)       at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
15           at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
              to the polypeptide shown in SEQ ID NO: 85,
- v)       at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
              at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
              to the polypeptide shown in SEQ ID NO: 86,
- 20           vi)       at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
              at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
              to the polypeptide shown in SEQ ID NO: 87,
- vii)       at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
              at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
25           to the polypeptide shown in SEQ ID NO: 88,
- viii)       at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
              at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
              to the polypeptide shown in SEQ ID NO: 89,
- ix)       at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
30           at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
              to the polypeptide shown in SEQ ID NO: 90,
- x)       at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
              at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
              to the polypeptide shown in SEQ ID NO: 91,
- 35           xi)       at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
              at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
              to the polypeptide shown in SEQ ID NO: 92,

- xii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 93,
- xiii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 94,
- xiv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 95,
- xv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 96,
- xvi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 97,
- xvii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 98, and
- xviii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 99

and wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO 66, and

- (b) optionally a coating consisting of one or more layer(s) surrounding the core.

One embodiment of the invention relates to a granule, which comprises:

- (a) a core comprising a DNase and a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin, wherein the hexosaminidase is selected from the group consisting of polypeptides comprising an amino acid sequence with:
  - i) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 82,
  - ii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 83,

- iii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 84,
- iv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
5 at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 85,
- v) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 86,
- 10 vi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 87,
- vii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
15 at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 88,
- viii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 89,
- ix) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
20 at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 90,
- x) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 91,
- 25 xi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 92,
- xii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
30 at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 93,
- xiii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 94,
- xiv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
35 at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 95,

xv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 96,

xvi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 97,

xvii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 98, and

xviii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 99

and wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO 67, and

(b) optionally a coating consisting of one or more layer(s) surrounding the core.

One embodiment of the invention relates to a granule, which comprises:

(a) a core comprising a DNase and a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin, wherein the hexosaminidase is selected from the group consisting of polypeptides comprising an amino acid sequence with;

i) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 82,

ii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 83,

iii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 84,

iv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 85,

v) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 86,

- vi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 87,
- 5 vii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 88,
- viii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 89,
- 10 ix) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 90,
- x) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 91,
- 15 xi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 92,
- xii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 93,
- 20 xiii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 94,
- 25 xiv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 95,
- xv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 96,
- 30 xvi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 97,
- xvii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 98, and
- 35

xviii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 99

and wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO 68, and

(b) optionally a coating consisting of one or more layer(s) surrounding the core.

## Uses

The present invention is also directed to methods for using the cleaning composition in laundry/textile/fabric (House hold laundry washing, Industrial laundry washing) or hard surface cleaning (ADW, car wash, Industrial surface)

### Use of cleaning composition

The cleaning composition of the present invention may be formulated, for example, as a hand or machine laundry detergent composition including a laundry additive composition suitable for pre-treatment of stained fabrics and a rinse added fabric softener composition, or be formulated as a detergent composition for use in general household hard surface cleaning operations, or be formulated for hand or machine dishwashing operations. In a specific aspect, the present invention provides a detergent additive comprising one or more enzymes as described herein.

The present invention is directed to methods for using the compositions thereof. Laundry/textile/fabric (House hold laundry washing, Industrial laundry washing). Hard surface cleaning (ADW, car wash, Industrial surface). The compositions of the invention comprise a blend of DNase and a hexosaminidase, and effectively reduce or remove organic components, such as polysaccharide and DNA from surfaces such as textiles and hard surfaces e.g. dishes.

The compositions of the invention comprise a blend of DNase and hexosaminidase, preferably  $\beta$ -N-acetylglucosaminidase, and the composition effectively reduce or remove organic components, such as polysaccharides and DNA from surfaces such as textiles and hard surfaces e.g. dishes. One embodiment of the invention relates to the use of a cleaning composition comprising a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin, and at least one cleaning component for reduction or removal of components e.g. of biofilm, such as polysaccharides, e.g. N-acetyl-glucosaminide e.g. poly-N-acetylglucosamine (PNAG) and DNA, of an item, wherein the item is a textile or a hard surface.

One embodiment of the invention relates to the use of a cleaning composition comprising a DNase, at least one hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin, and a cleaning component for deep cleaning of an item, wherein the item is a textile or a surface.

One embodiment of the invention relates to the use of a composition comprising a DNase and a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin for reduction or removal of biofilm and/or compounds such as polysaccharide, e.g. N-acetylglucosaminide e.g. poly-N-acetylglucosamine (PNAG) and/or DNA of an item. One embodiment of the invention relates to the use of a cleaning composition comprising a DNase and a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin for reduction or removal of biofilm and/or compounds such as polysaccharide, e.g. N-acetylglucosaminide e.g. poly-N-acetylglucosamine (PNAG) and/or DNA of an item such as textile. One embodiment of the invention relates to the use of a cleaning composition comprising a DNase and a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin for deep cleaning when the cleaning composition is applied in e.g. laundry process.

One embodiment of the invention relates to the use of a composition comprising a DNase and a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin for reduction of redeposition or reduction of malodor. One embodiment of the invention relates to the use of a cleaning composition comprising a DNase and a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin for reduction of redeposition or reduction of malodor.

One embodiment of the invention relates to the use of a cleaning composition comprising a DNase and a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin for reduction of redeposition or reduction of malodor when the cleaning composition is applied in e.g. laundry process. One embodiment of the invention relates to the use of a cleaning composition comprising a DNase and a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin for reduction of redeposition or reduction of malodor on an item e.g. textile. In one embodiment, the composition is an anti-redeposition composition.

One embodiment of the invention relates to the use of a cleaning composition comprising a DNase and a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin for deep cleaning of an item or reduction of redeposition or malodor, wherein the a hexosaminidase is selected from the group consisting of polypeptides comprising;

- i) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 82,
- ii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 83,
- iii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 84,

- iv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 85,
- 5 v) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 86,
- vi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 87,
- 10 vii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 88,
- viii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
15 to the polypeptide shown in SEQ ID NO: 89,
- ix) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 90,
- x) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
20 at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 91,
- xi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 92,
- 25 xii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 93,
- xiii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
30 to the polypeptide shown in SEQ ID NO: 94,
- xiv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 95,
- xv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
35 at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 96,

- xvi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 97,
- xvii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 98, and
- xviii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 99.

One embodiment of the invention relates to the use of a cleaning composition comprising a DNase and a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin for deep cleaning of an item or reduction of redeposition or malodor, wherein the a hexosaminidase is selected from the group consisting of polypeptides comprising;

- i) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 82,
- ii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 83,
- iii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 84,
- iv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 85,
- v) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 86,
- vi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 87,
- vii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 88,
- viii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 89,

- ix) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 90,
- x) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 91,
- xi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 92,
- xii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 93,
- xiii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 94,
- xiv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 95,
- xv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 96,
- xvi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 97,
- xvii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 98, and
- xviii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 99,

and wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO 13.

One embodiment of the invention relates to the use of a cleaning composition comprising a DNase and a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin for deep cleaning of an item or reduction of redeposition or malodor, wherein the a hexosaminidase is selected from the group consisting of polypeptides comprising;

- 5
- i) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 82,
- ii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 83,
- 10 iii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 84,
- iv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 85,
- 15 v) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 86,
- vi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 87,
- 20 vii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 88,
- viii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 89,
- 25 ix) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 90,
- x) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 91,
- 30 xi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 92,
- xii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 93,
- 35

- xiii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 94,
- xiv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 95,
- xv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 96,
- xvi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 97,
- xvii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 98, and
- xviii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 99,

and wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO 65.

One embodiment of the invention relates to the use of a cleaning composition comprising a DNase and a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin for deep cleaning of an item or reduction of redeposition or malodor, wherein the a hexosaminidase is selected from the group consisting of polypeptides comprising;

- i) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 82,
- ii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 83,
- iii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 84,
- iv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 85,

- v) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 86,
- 5 vi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 87,
- vii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 88,
- 10 viii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 89,
- ix) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 90,
- 15 x) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 91,
- xi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 92,
- 20 xii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 93,
- xiii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 94,
- 25 xiv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 95,
- 30 xv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 96,
- xvi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 97,
- 35

xvii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 98, and

xviii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 99,

and wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at  
least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence  
identity to the amino acid sequence shown in SEQ ID NO 66.

10 One embodiment of the invention relates to the use of a cleaning composition comprising a  
DNase and a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin for deep  
cleaning of an item or reduction of redeposition or malodor, wherein the hexosaminidase is  
selected from the group consisting of polypeptides comprising;

i) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 82,

ii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 83,

iii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 84,

iv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 85,

v) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 86,

vi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 87,

vii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 88,

viii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 89,

- ix) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 90,
- x) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 91,
- xi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 92,
- xii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 93,
- xiii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 94,
- xiv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 95,
- xv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 96,
- xvi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 97,
- xvii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 98, and
- xviii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 99, and

wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO 67.

One embodiment of the invention relates to the use of a cleaning composition comprising a DNase and a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin for deep cleaning of an item or reduction of redeposition or malodor, wherein the a hexosaminidase is selected from the group consisting of polypeptides comprising;

- 5
- i) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 82,
- ii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 83,
- 10 iii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 84,
- iv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 85,
- 15 v) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 86,
- vi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 87,
- 20 vii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 88,
- viii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 89,
- 25 ix) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 90,
- x) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 91,
- 30 xi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 92,
- 35 xii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 93,

- xiii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 94,
- xiv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 95,
- xv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 96,
- xvi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 97,
- xvii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 98, and
- xviii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 99, and

wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO 68.

The invention further relates to a method of deep cleaning an item, comprising the steps of:

- a) contacting the item with a cleaning composition comprises a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin and a cleaning component; and
- b) and optionally rinsing the item, wherein the item is preferably a textile.

The invention further relates to a method of deep cleaning an item, comprising the steps of:

a) contacting the item with a cleaning composition comprises a DNase, wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO 13, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin, wherein the hexosaminidase is selected from the group consisting of the polypeptides;

- i) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 82,

- ii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 83,
- 5 iii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 84,
- iv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 85,
- 10 v) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 86,
- vi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
15 to the polypeptide shown in SEQ ID NO: 87,
- vii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 88,
- viii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
20 at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 89,
- ix) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 90,
- 25 x) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 91,
- xi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
30 to the polypeptide shown in SEQ ID NO: 92,
- xii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 93,
- xiii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
35 at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 94,

- xiv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 95,
- xv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 96,
- xvi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 97,
- xvii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 98, and
- xviii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 99,

and a cleaning component; and

- b) and optionally rinsing the item, wherein the item is preferably a textile.

The invention further relates to a method of deep cleaning an item, comprising the steps of:

a) contacting the item with a cleaning composition comprises a DNase, wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO 65, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin, wherein the hexosaminidase is selected from the group consisting of the polypeptides;

- i) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 82,
- ii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 83,
- iii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 84,
- iv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 85,

- v) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 86,
- 5 vi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 87,
- vii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 88,
- 10 viii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 89,
- ix) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 90,
- 15 x) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 91,
- xi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 92,
- 20 xii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 93,
- xiii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 94,
- 25 xiv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 95,
- 30 xv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 96,
- xvi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 97,
- 35

xvii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 98, and

xviii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 99,

and a cleaning component; and

b) and optionally rinsing the item, wherein the item is preferably a textile.

10 The invention further relates to a method of deep cleaning an item, comprising the steps of:

a) contacting the item with a cleaning composition comprises a DNase, wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO 66, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin, wherein the hexosaminidase is selected from the group consisting of the polypeptides;

i) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 82,

ii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 83,

iii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 84,

iv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 85,

v) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 86,

vi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 87,

vii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 88,

- viii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 89,
- ix) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 90,
- x) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 91,
- xi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 92,
- xii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 93,
- xiii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 94,
- xiv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 95,
- xv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 96,
- xvi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 97,
- xvii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 98, and
- xviii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 99,

and a cleaning component; and

- b) and optionally rinsing the item, wherein the item is preferably a textile.

The invention further relates to a method of deep cleaning an item, comprising the steps of:

a) contacting the item with a cleaning composition comprises a DNase, wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO 66, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin, wherein the hexosaminidase is selected from the group consisting of the polypeptides;

- i) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 82,
- ii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 83,
- iii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 84,
- iv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 85,
- v) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 86,
- vi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 87,
- vii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 88,
- viii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 89,
- ix) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 90,
- x) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 91,

- xi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 92,
- xii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 93,
- xiii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 94,
- xiv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 95,
- xv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 96,
- xvi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 97,
- xvii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 98, and
- xviii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 99,
- and a cleaning component; and
- b) and optionally rinsing the item, wherein the item is preferably a textile.

The invention further relates to a method of deep cleaning an item, comprising the steps of:

- a) contacting the item with a cleaning composition comprises a DNase, wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO 67, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin, wherein the hexosaminidase is selected from the group consisting of the polypeptides;
- i) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 82,

- ii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 83,
- 5 iii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 84,
- iv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 85,
- 10 v) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 86,
- vi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 87,
- 15 vii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 88,
- viii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 89,
- 20 ix) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 90,
- 25 x) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 91,
- xi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 92,
- 30 xii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 93,
- xiii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 94,
- 35

- xiv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 95,
  - xv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 96,
  - xvi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 97,
  - xvii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 98, and
  - xviii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 99,
- and a cleaning component; and
- b) and optionally rinsing the item, wherein the item is preferably a textile.

The invention further relates to a method of deep cleaning an item, comprising the steps of:

- a) contacting the item with a cleaning composition comprises a DNase, wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO 68, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin, wherein the hexosaminidase is selected from the group consisting of the polypeptides;
  - i) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 82,
  - ii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 83,
  - iii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 84,
  - iv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 85,

- v) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 86,
- 5 vi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 87,
- vii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 88,
- 10 viii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 89,
- ix) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 90,
- 15 x) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 91,
- xi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 92,
- 20 xii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 93,
- xiii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 94,
- 25 xiv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 95,
- 30 xv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 96,
- xvi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 97,
- 35

xvii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 98, and

xviii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 99,

and a cleaning component; and

b) and optionally rinsing the item, wherein the item is preferably a textile.

The invention further relates to a kit intended for deep cleaning, wherein the kit comprises a solution of an enzyme mixture comprising a DNase and a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin.

The DNase is preferably selected from polypeptides having at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO 13, SEQ ID NO 65, SEQ ID NO 66, SEQ ID NO 67 and SEQ ID NO 68, and the a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin is preferably selected from the group consisting of the polypeptides;

i) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 82,

ii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 83,

iii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 84,

iv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 85,

v) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 86,

vi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 87,

- vii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 88,
- viii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 89,
- ix) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 90,
- x) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 91,
- xi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 92,
- xii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 93,
- xiii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 94,
- xiv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 95,
- xv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 96,
- xvi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 97,
- xvii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 98, and
- xviii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 99.

The invention is further described in the following paragraphs

Paragraph 1 A cleaning composition comprising a DNase, a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin and a cleaning component.

5 Paragraph 2 A cleaning composition according to paragraph 1, wherein the DNase is microbial, preferably obtained from bacteria or fungi.

Paragraph 3 A cleaning composition according to paragraph 2, wherein the DNase is obtained from *Bacillus*, preferably *Bacillus cibi*, *Bacillus horikoshii*, *Bacillus licheniformis*, *Bacillus subtilis*,  
10 *Bacillus horneckiae*, *Bacillus idriensis*, *Bacillus algicola*, *Bacillus vietnamensis*, *Bacillus hwajinpoensis*, *Bacillus indicus*, *Bacillus marisflavi* or *Bacillus luciferensis*.

Paragraph 4 A cleaning composition of paragraph 3, wherein the DNase comprises one or both of the motif(s) [D/M/L][S/T]GYSR[D/N] (SEQ ID NO: 73) or ASXNRSKG (SEQ ID NO: 74).

15 Paragraph 5 A cleaning composition according to any of paragraphs 2 to 4, wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO 13.

20 Paragraph 6 A cleaning composition according to any of paragraphs 2 to 4, wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO: 65.

25 Paragraph 7 A cleaning composition according to any of paragraphs 2 to 4, wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO: 66.

30 Paragraph 8 A cleaning composition according to paragraph 2, wherein the DNase is fungal, preferably obtained from *Aspergillus* and even more preferably from *Aspergillus oryzae* and wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid  
35 sequence shown in SEQ ID NO: 67.

Paragraph 9 A cleaning composition according to paragraph 2, wherein the DNase is fungal,

preferably obtained from *Trichoderma* and even more preferably from *Trichoderma harzianum* and wherein the DNase has at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98% or 100% sequence identity to the amino acid sequence shown in SEQ ID NO: 68.

5

Paragraph 10 A cleaning composition according to any of the proceeding paragraphs, wherein the hexosaminidase is selected from the group of hexosaminidases comprising an amino acid sequence with;

- 10 i) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 82,
- 15 ii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 83,
- 20 iii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 84,
- 25 iv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 85,
- v) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 86,
- 30 vi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 87,
- vii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 88,
- 35 viii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 89,
- ix) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity to the polypeptide shown in SEQ ID NO: 90,

- 5 x) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 91,
- xi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 92,
- 10 xii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 93,
- xiii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 94,
- 15 xiv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 95,
- xv) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 96,
- 20 xvi) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 97,
- xvii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 98, and
- 25 xviii) at least 60%, at least 65%, at least 70%, at least 75%, at least 80%, at least 85%,  
at least 90%, at least 95%, at least 98%, at least 99% or 100% sequence identity  
to the polypeptide shown in SEQ ID NO: 99.

30 Paragraph 11 A cleaning composition according to any of the preceding paragraphs wherein the  
amount of DNase in the composition is from 0.01 to 1000 ppm and the amount of hexosaminidase  
is from 0.01 to 1000 ppm.

35 Paragraph 12 A cleaning composition according to any of the preceding paragraphs, wherein the  
cleaning component is selected from surfactants, preferably anionic and/or nonionic, builders and  
bleach components.

Paragraph 13 Use of a cleaning composition according to any of paragraphs 1 to 12 for deep cleaning of an item, wherein the item is a textile or a surface.

Paragraph 14 A method of formulating a cleaning composition according to any of paragraphs 1 to 12 comprising adding a DNase, a hexosaminidase and at least one cleaning component.

Paragraph 15 A kit intended for deep cleaning, wherein the kit comprises a solution of an enzyme mixture comprising a DNase and a hexosaminidase, preferably a  $\beta$ -N-acetylglucosaminidase e.g. a dispersin e.g. a  $\beta$ -N-acetylglucosaminidase.

Paragraph 16 A method of deep cleaning an item, comprising the steps of:

- a) contacting the item with a cleaning composition according to any of paragraphs 1 to 12; and
- b) and optionally rinsing the item, wherein the item is preferably a textile.

## Definitions

Biofilm is produced by any group of microorganisms in which cells stick to each other or stick to a surface, such as a textile, dishware or hard surface or another kind of surface. These adherent cells are frequently embedded within a self-produced matrix of extracellular polymeric substance (EPS). Biofilm EPS is a polymeric conglomeration generally composed of extracellular DNA, proteins, and polysaccharides. Biofilms may form on living or non-living surfaces. The microbial cells growing in a biofilm are physiologically distinct from planktonic cells of the same organism, which, by contrast, are single-cells that may float or swim in a liquid medium. Bacteria living in a biofilm usually have significantly different properties from planktonic bacteria of the same species, as the dense and protected environment of the film allows them to cooperate and interact in various ways. One benefit of this environment for the microorganisms is increased resistance to detergents and antibiotics, as the dense extracellular matrix and the outer layer of cells protect the interior of the community. On laundry biofilm producing bacteria can be found among the following species: *Acinetobacter* sp., *Aeromicrobium* sp., *Brevundimonas* sp., *Microbacterium* sp., *Micrococcus luteus*, *Pseudomonas* sp., *Staphylococcus epidermidis*, and *Stenotrophomonas* sp. On hard surfaces biofilm producing bacteria can be found among the following species: *Acinetobacter* sp., *Aeromicrobium* sp., *Brevundimonas* sp., *Microbacterium* sp., *Micrococcus luteus*, *Pseudomonas* sp., *Staphylococcus epidermidis*, *Staphylococcus aureus* and *Stenotrophomonas* sp. In one aspect, the biofilm producing strain is *Brevundimonas* sp. In one aspect, the biofilm producing strain is *Pseudomonas alcaliphila* or *Pseudomonas fluorescens*. In one aspect, the biofilm producing strain is *Staphylococcus aureus*.

By the term “deep cleaning” is meant disruption, removal or reduction of components of organic matter, e.g. biofilm, such as polysaccharides, proteins, DNA, soil or other components present in the organic matter.

Cleaning component: The cleaning component is different from the DNase and hexosaminidase. The precise nature of these cleaning component, and levels of incorporation thereof, will depend on the physical form of the composition and the nature of the operation for which it is to be used. Suitable cleaning components include, but are not limited to the components described below such as surfactants, builders, flocculating aid, chelating agents, dye transfer inhibitors, enzymes, enzyme stabilizers, enzyme inhibitors, catalytic materials, bleach activators, hydrogen peroxide, sources of hydrogen peroxide, preformed peracids, polymeric agents, clay soil removal/anti-redeposition agents, brighteners, suds suppressors, dyes, perfumes, structure elasticizing agents, fabric softeners, carriers, hydrotropes, builders and co-builders, fabric huing agents, anti-foaming agents, dispersants, processing aids, and/or pigments.

Cleaning Composition: The term “cleaning composition” refers to compositions that find use in the removal of undesired compounds from items to be cleaned, such as textiles. The cleaning composition may be a detergent composition and may be used to e.g. clean textiles for both household cleaning and industrial cleaning. The terms encompass any materials/compounds selected for the particular type of cleaning composition desired and the form of the product (e.g., liquid, gel, powder, granulate, paste, or spray compositions) and includes, but is not limited to, detergent compositions (e.g., liquid and/or solid laundry detergents and fine fabric detergents; fabric fresheners; fabric softeners; and textile and laundry pre-spotters/pretreatment). In addition to containing the enzyme of the invention, the detergent formulation may contain one or more additional enzymes (such as proteases, amylases, lipases, cutinases, cellulases, endoglucanases, xyloglucanases, pectinases, pectin lyases, xanthanases, peroxidases, haloperoxygenases, catalases and mannanases, or any mixture thereof), and/or detergent adjunct ingredients such as surfactants, builders, chelators or chelating agents, bleach system or bleach components, polymers, fabric conditioners, foam boosters, suds suppressors, dyes, perfume, tannish inhibitors, optical brighteners, bactericides, fungicides, soil suspending agents, anti-corrosion agents, enzyme inhibitors or stabilizers, enzyme activators, transferase(s), hydrolytic enzymes, oxido reductases, bluing agents and fluorescent dyes, antioxidants, and solubilizers. The term “cleaning composition” is used interchangeably with “detergent composition”. The cleaning composition of the present invention can be diluted with water to form a wash liquor solution upon application.

The term “enzyme detergency benefit” is defined herein as the advantageous effect an enzyme may add to a detergent compared to the same detergent without the enzyme. Important detergency benefits which can be provided by enzymes are stain removal with no or very little

visible soils after washing and/or cleaning, prevention or reduction of redeposition of soils released in the washing process (an effect that also is termed anti-redeposition), restoring fully or partly the whiteness of textiles which originally were white but after repeated use and wash have obtained a greyish or yellowish appearance (an effect that also is termed whitening). Textile care benefits, which are not directly related to catalytic stain removal or prevention of redeposition of soils, are also important for enzyme detergency benefits. Examples of such textile care benefits are prevention or reduction of dye transfer from one fabric to another fabric or another part of the same fabric (an effect that is also termed dye transfer inhibition or anti-backstaining), removal of protruding or broken fibers from a fabric surface to decrease pilling tendencies or remove already existing pills or fuzz (an effect that also is termed anti-pilling), improvement of the fabric-softness, colour clarification of the fabric and removal of particulate soils which are trapped in the fibers of the fabric or garment. Enzymatic bleaching is a further enzyme detergency benefit where the catalytic activity generally is used to catalyze the formation of bleaching components such as hydrogen peroxide or other peroxides. Textile care benefits, which are not directly related to catalytic stain removal or prevention of redeposition of soils, are also important for enzyme detergency benefits. Examples of such textile care benefits are prevention or reduction of dye transfer from one textile to another textile or another part of the same textile (an effect that is also termed dye transfer inhibition or anti-backstaining), removal of protruding or broken fibers from a textile surface to decrease pilling tendencies or remove already existing pills or fuzz (an effect that also is termed anti-pilling), improvement of the textile-softness, colour clarification of the textile and removal of particulate soils which are trapped in the fibers of the textile. Enzymatic bleaching is a further enzyme detergency benefit where the catalytic activity generally is used to catalyze the formation of bleaching component such as hydrogen peroxide or other peroxides or other bleaching species.”

The term “hard surface cleaning” is defined herein as cleaning of hard surfaces wherein hard surfaces may include floors, tables, walls, roofs etc. as well as surfaces of hard objects such as cars (car wash) and dishes (dish wash). Dish washing includes but are not limited to cleaning of plates, cups, glasses, bowls, cutlery such as spoons, knives, forks, serving utensils, ceramics, plastics, metals, china, glass and acrylics.

The term “wash performance” is used as an enzyme’s ability to remove stains present on the object to be cleaned during e.g. wash or hard surface cleaning.

The term “whiteness” is defined herein as a greying, yellowing of a textile. Loss of whiteness may be due to removal of optical brighteners/hueing agents. Greying and yellowing can be due to soil redeposition, body soils, colouring from e.g. iron and copper ions or dye transfer. Whiteness might include one or several issues from the list below: colourant or dye effects; incomplete stain removal (e.g. body soils, sebum etc.); redeposition (greying, yellowing or other discolourations of the object) (removed soils reassociate with other parts of textile, soiled or

unsoiled); chemical changes in textile during application; and clarification or brightening of colours.

The term "laundering" relates to both household laundering and industrial laundering and means the process of treating textiles with a solution containing a cleaning or detergent composition of the present invention. The laundering process can for example be carried out using e.g. a household or an industrial washing machine or can be carried out by hand.

By the term "malodor" is meant an odor which is not desired on clean items. The cleaned item should smell fresh and clean without malodors adhered to the item. One example of malodor is compounds with an unpleasant smell, which may be produced by microorganisms. Another example is unpleasant smells can be sweat or body odor adhered to an item which has been in contact with human or animal. Another example of malodor can be the odor from spices, which sticks to items for example curry or other exotic spices which smells strongly.

The term "mature polypeptide" means a polypeptide in its final form following translation and any post-translational modifications, such as N-terminal processing, C-terminal truncation, glycosylation, phosphorylation, etc.

The term "textile" means any textile material including yarns, yarn intermediates, fibers, non-woven materials, natural materials, synthetic materials, and any other textile material, fabrics made of these materials and products made from fabrics (e.g., garments and other articles). The textile or fabric may be in the form of knits, wovens, denims, non-wovens, felts, yarns, and towelling. The textile may be cellulose based such as natural cellulose, including cotton, flax/linen, jute, ramie, sisal or coir or manmade cellulose (e.g. originating from wood pulp) including viscose/rayon, cellulose acetate fibers (tricell), lyocell or blends thereof. The textile or fabric may also be non-cellulose based such as natural polyamides including wool, camel, cashmere, mohair, rabbit and silk or synthetic polymers such as nylon, aramid, polyester, acrylic, polypropylene and spandex/elastane, or blends thereof as well as blends of cellulose based and non-cellulose based fibers. Examples of blends are blends of cotton and/or rayon/viscose with one or more companion material such as wool, synthetic fiber (e.g. polyamide fiber, acrylic fiber, polyester fiber, polyvinyl chloride fiber, polyurethane fiber, polyurea fiber, aramid fiber), and/or cellulose-containing fiber (e.g. rayon/viscose, ramie, flax/linen, jute, cellulose acetate fiber, lyocell). Fabric may be conventional washable laundry, for example stained household laundry. When the term fabric or garment is used it is intended to include the broader term textiles as well.

The term "variant" means a polypeptide having the activity of the parent or precursor polypeptide and comprising an alteration, i.e., a substitution, insertion, and/or deletion, at one or more (e.g., several) positions compared to the precursor or parent polypeptide. A substitution means replacement of the amino acid occupying a position with a different amino acid; a deletion means removal of the amino acid occupying a position; and an insertion means adding an amino acid adjacent to and immediately following the amino acid occupying a position.

Sequence identity: The relatedness between two amino acid sequences or between two nucleotide sequences is described by the parameter “sequence identity”. For purposes of the present invention, the sequence identity between two amino acid sequences is determined using the Needleman-Wunsch algorithm (Needleman and Wunsch, 1970, J. Mol. Biol. 48: 443-453) as implemented in the Needle program of the EMBOSS package (EMBOSS: The European Molecular Biology Open Software Suite, Rice et al., 2000, Trends Genet. 16: 276-277), preferably version 6.6.0 or later. The parameters used are a gap open penalty of 10, a gap extension penalty of 0.5, and the EBLOSUM62 (EMBOSS version of BLOSUM62) substitution matrix. The output of Needle labeled “longest identity” (obtained using the –nobrief option) is used as the percent identity and is calculated as follows:

$$(\text{Identical Residues} \times 100) / (\text{Length of Alignment} - \text{Total Number of Gaps in Alignment}).$$

NUC1, NUC1A DNase: The term includes DNases comprising a certain domain. The domain termed NUC1 and polypeptides of this domain are in addition to having DNase activity, characterized by comprising certain motifs e.g. one or more of the motifs [F/L/Y/I]A[N/R]D[L/I/P/V] (SEQ ID NO: 100) or C[D/N]T[A/R] (SEQ ID NO: 101); the letters indicate amino acids in one letter code thus F is phenylalanine, L is leucine, A is alanine, N is asparagine, D is aspartic acid, I is isoleucine, V is valine, H is histidine, G is glycine, C cysteine, T is threonine, R is arginine and so forth. The brackets indicate that the amino acids within the bracket are alternatives. The NUC1\_A domain share the common motif [D/Q][I/V]DH (SEQ ID NO 102).

## Examples

### Assays

#### Assay I: testing of DNase activity

DNase activity was determined on DNase Test Agar with Methyl Green (BD, Franklin Lakes, NJ, USA), which was prepared according to the manual from supplier. Briefly, 21 g of agar was dissolved in 500 ml water and then autoclaved for 15 min at 121°C. Autoclaved agar was tempered to 48°C in water bath, and 20 ml of agar was poured into petridishes with and allowed to solidify by incubation o/n at room temperature. On solidified agar plates, 5 µl of enzyme solutions are added and DNase activity is observed as colorless zones around the spotted enzyme solutions

#### Assay II: testing of hexosaminidase activity

The hexosaminidase activity of the polypeptides listed in the table below was determined using 4-nitrophenyl N-acetyl-β-D-glucosaminide (Sigma-Aldrich) as substrate. The enzymatic reaction was performed in triplicates in a 96 well flat bottom polystyrene microtiter plate (Thermo Scientific) with the following conditions: 50 mM 2-(N-morpholino)ethanesulfonic acid pH 6 buffer, 1.5 mg/ml

4-nitrophenyl N-acetyl-β-D-glucosaminide and 20 μg/ml purified enzyme sample in a total reaction volume of 100 μl. Blank samples without polypeptide were run in parallel. The reactions were carried out at 37°C in a Thermomixer comfort (Eppendorf). After 10 minutes of incubation, 5 μl 1 M NaOH was added to each reaction mixture to stop the enzymatic reaction. The absorbance was read at 405 nm using a POLARstar Omega plate reader (BMG LABTECH) to estimate the formation of 4-nitrophenolate ion released because of enzymatic hydrolysis of the 4-nitrophenyl N-acetyl-β-D-glucosaminide substrate.

Assay III: Mini wash assay

Wash performance may be assessed in laundry wash experiment using a Mini wash assay, which is a test method where soiled textile is continuously is lifted up and down into the test solution and subsequently rinsed.

The wash experiment is conducted under various experimental conditions one examples specified below:

Table 1

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Detergent      | Model A detergent<br>Model detergent A wash liquor (100%) is prepared by dissolving 3.33 g/l of model detergent A containing 12% LAS, 1.1% AEO Biosoft N25-7 (NI), 7% AEOS (SLES), 6% MPG, 3% ethanol, 3% TEA (triethanolamine), 2.75% cocoa soap, 2.75% soya soap, 2% glycerol, 2% sodium hydroxide, 2% sodium citrate, 1% sodium formiate, 0.2% DTMPA and 0.2% PCA (all percentages are w/w (weight volume) in water with hardness 15 dH. |
| Detergent dose | 3.33 g/l                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| pH             | Example: "as is" in the current detergent solution and is not adjusted.                                                                                                                                                                                                                                                                                                                                                                     |
| Water hardness | 15°dH, adjusted by adding CaCl <sub>2</sub> *2H <sub>2</sub> O, MgCl <sub>2</sub> *6H <sub>2</sub> O and NaHCO <sub>3</sub> (4:1:7.5) to milli-Q water.                                                                                                                                                                                                                                                                                     |
| Enzymes        | Enzyme blend according to the invention                                                                                                                                                                                                                                                                                                                                                                                                     |
| Enzyme conc.   | Example 2.5 nM, 5 nM, 10 nM, 30 nM, 60 nM                                                                                                                                                                                                                                                                                                                                                                                                   |
| Test material  | Example: Biofilm or EPS swatches                                                                                                                                                                                                                                                                                                                                                                                                            |
| Temperature    | e.g. 15°C, 20°C, 30°C, 40°C or 60°C                                                                                                                                                                                                                                                                                                                                                                                                         |
| Test system    | Soiled textile continuously lifted up and down into the test solutions, 50 times per minute the test solutions are kept in 125 ml glass beakers. After wash of the textiles are continuously lifted up and down into tap water, aprox. 50 times per minute.                                                                                                                                                                                 |

Test materials may be obtained from EMPA Testmaterials AG Mövenstrasse 12, CH-9015 St. Gallen, Switzerland, from Center for Testmaterials BV, P.O. Box 120, 3133 KT Vlaardingen, the Netherlands, and WFK Testgewebe GmbH, Christenfeld 10, D-41379 Brüggen, Germany. The textiles are subsequently air-dried and the wash performance is measured as the brightness of the colour of these textiles. Brightness can also be expressed as the Remission (R), which is a measure for the light reflected or emitted from the test material when illuminated with white light. The Remission (R) of the textiles is measured at 460 nm using a Zeiss MCS 521 VIS spectrophotometer. The measurements are done according to the manufacturer's protocol.

#### Assay IV: testing of DNase activity

DNase activity was determined by using the DNaseAlert™ Kit (11-02-01-04, IDT Intergrated DNA Technologies) according to the supplier's manual. Briefly, 95 µl DNase sample was mixed with 5 µl substrate in a microtiter plate, and fluorescence was immediately measured using a Clariostar microtiter reader from BMG Labtech (536 nm excitation, 556 nm emission).

#### Example 1: Synergistic effect between hexosaminidase and DNase on cleaning in liquid model detergent on biofilm swatches

Preparation of the biofilm swatches: A PNAG-producing *Pseudomonas fluorescens* isolate was used as model microorganism in the present example. Hexosaminidases such as dispersin has previously been shown to effectively target the PNAG in *Pseudomonas fluorescens* biofilms (Itoh, Y. *et al.*, J. Bacteriol. 2005, 187, 382–387). The *Pseudomonas fluorescens* strain was restreaked on Tryptone Soya Agar (TSA) (pH 7.3) (CM0131; Oxoid Ltd, Basingstoke, UK) and incubated for 3 days at ambient temperature. A single colony was inoculated into 10 mL of TSB and the culture was incubated for 16 hours at ambient temperature with shaking (Tetramax 1000, 460rpm). After propagation, the culture was diluted (1:100) in fresh TSB and 1.65 mL aliquots were added to the wells of 12-well polystyrene flat-bottom microplates (3512; Costar, Corning Incorporated, Corning, NY, USA), in which round swatches (diameter 2 cm) of sterile textile (WFK20A) had been placed. Sterile TSB was added to control wells. The biofilm swatches were cultivated for 48h at ambient temperature (static incubation).

The prepared biofilm swatches were then rinsed twice with 0.9% (w/v) NaCl. Five rinsed swatches (sterile or with *P.fluourescens*) were placed in 50 mL test tubes, and 10 mL of wash liquor (15<sup>0</sup>dH water with 0.2 g/L iron(III) oxide nanopowder (544884; Sigma-Aldrich) with 3.33g/L liquid model A detergent and 0.2ppm enzyme(s) was added to each tube. Washes without enzyme were included as controls. The test tubes were placed in a Stuart rotator and incubated for 1 hour at 30°C at 20rpm. The wash liquor was then removed, and the swatches were rinsed twice with 15<sup>0</sup>dH water and dried on filter paper over night.

The tri-stimulus light intensity (Y) values of the swatches were measured using a DigiEYE colour measurement and imaging system (VeriVide) equipped with a Nikon D90 digital camera.

Delta values ( $Y_{(\text{swatch washed with enzyme})} - Y_{(\text{swatch washed without enzyme})}$ ) are also indicated.

Table 2. Synergistic effect between hexosaminidase and DNase on cleaning in model A detergent on wfk20A, swatches.

Table 2

| Enzyme                                                                  | Enzyme conc.<br>( $\mu\text{g/ml}$ ) | Y    | $\Delta Y$ |
|-------------------------------------------------------------------------|--------------------------------------|------|------------|
| wfk20A, sterile medium                                                  | 0                                    | 84.2 |            |
| wfk20A w/biofilm, no enzyme                                             | 0                                    | 65.2 |            |
| wfk20A w/biofilm + hexosaminidase (SEQ ID NO 84)                        | 0.2                                  | 69.4 | 4.3 (4.25) |
| wfk20A, w/biofilm, DNase (SEQ ID NO 13)                                 | 0.2                                  | 65.4 | 0.3 (0.28) |
| wfk20A, w/biofilm, hexosaminidase (SEQ ID NO 84) + DNase (SEQ ID NO 13) | 0.2 + 0.2                            | 73.0 | 7.8 (7.85) |

As seen in table 2, the DNase is capable of boosting the effect of the hexosaminidase on the PNAG-containing biofilm. Thus, an enzyme blend comprising hexosaminidase and DNase provides superior cleaning e.g. deep properties in model A detergent as compared to the individual enzymes. Given that the wash performance of the enzyme blend ( $\Delta Y_{\text{blend}}$ ) clearly exceed the sum of the performances seen for of the individual enzymes ( $\Delta Y_{\text{Hexos}} + \Delta Y_{\text{DNase}}$ ), this suggests that there is a synergetic effect between the two enzymes on the deep-cleaning properties in a detergent (model A).

### Example 2. Synergistic effect between hexosaminidase and DNase on cleaning in liquid model detergent on biofilm swatches

Example 2 were conducted essentially the same as described above for Example 1, except that a different hexosaminidase (SEQ ID NO: 98) was used.

The tristimulus light intensity (Y) values were measured using a DigiEYE colour measurement and imaging system (VeriVide) equipped with a Nikon D90 digital camera, and are displayed in table 3.

Delta values ( $Y_{(\text{swatch washed with enzyme})} - Y_{(\text{swatch washed without enzyme})}$ ) are also indicated.

Table 3. Synergistic effect between hexosaminidases and DNase on cleaning in model A detergent.

| Enzyme                                                                  | Enzyme concentration (µg/ml) | Y values | $\Delta Y$ (Ywith enzyme – Y(without enzyme)) |
|-------------------------------------------------------------------------|------------------------------|----------|-----------------------------------------------|
| wfk20A, sterile medium                                                  | 0                            | 84,2     |                                               |
| wfk20A, biofilm, no enzyme                                              | 0                            | 65,2     |                                               |
| wfk20A, biofilm, hexosaminidase (SEQ ID NO: 98)                         | 0,2                          | 70,3     | 5,2                                           |
| wfk20A, biofilm, DNase (SEQ ID NO: 13)                                  | 0,2                          | 65,4     | 0,2                                           |
| wfk20A, biofilm, hexosaminidase (SEQ ID NO: 98) + DNase (SEQ ID NO: 13) | 0.2 + 0.2                    | 74,5     | 9,4                                           |

As seen in table 3, the DNase is capable of boosting the effect of the hexosaminidase (SEQ ID NO: 98) on the PNAG containing biofilm. Thus, an enzyme blend comprising hexosaminidase and DNase provides superior cleaning e.g. deep properties in model A detergent as compared to the individual enzymes. Given that the wash performance of the enzyme blend ( $\Delta Y_{blend}$ ) clearly exceed the sum of the performances seen for of the individual enzymes ( $\Delta Y_{Hexos} + \Delta Y_{DNase}$ ), this suggests that there is a synergetic effect between the two enzymes on the deep-cleaning properties in a detergent (model A).

**Example 3 Synergistic effect between hexosaminidase and DNase on deep-cleaning in liquid model detergent on EPS (extracellular polymeric substances) swatches**

EPS from the PNAG-producing *Pseudomonas fluorescens* isolate was isolated and used as follows: The strain was restreaked on Tryptone Soya Agar (TSA) (pH 7.3) (CM0131; Oxoid Ltd, Basingstoke, UK) and incubated at 23°C. The strain was then inoculated into 500ml DURAN® laboratory bottles containing T-broth (10g/L Bacto™ Tryptone (211705, BD), 5g/L sodium chloride (31434, Sigma-Aldrich)) and incubated statically for 3 days at 23°C. The biofilm pellicles were subsequently extracted, pelleted by centrifugation (10 min, 6000g), resuspended in 3M NaCl and incubated for 15 min at ambient temperature to extract the surface-associated EPS (extracellular polymeric substances). The EPS-containing supernatants obtained after centrifugation (4min, 10000g, 25°C) were pooled and stored at -20°C until further use (termed crude EPS).

For testing wash performance, 50ul aliquots of the crude EPS were spotted on sterile textile swatches (WFK20A) and incubated for 15 min at ambient temperature. Swatches spotted with sterile 3M NaCl were included as controls. The swatches (sterile or with EPS) were placed in 50 mL test tubes and 10 mL of wash liquor (15°dH water with 0.7 g/L WFK 09V pigment soil (Wfk-Testgewebe GmbH, #00500) and 3.33g/L liquid model A detergent (12% LAS, 11% AEO

5 Biosoft N25-7 (NI), 5% AEOS (SLES), 6% MPG (monopropylene glycol), 3% ethanol, 3% TEA, 2.75% coco soap, 2.75% soya soap, 2% glycerol, 2% sodium hydroxide, 2% sodium citrate, 1% sodium formate, 0.2% DTMPA and 0.2% PCA (all percentages are w/w)) and 0.2 µg/ml enzyme(s) was added to each tube. Washes without enzyme were included as controls. The test  
10 tubes were placed in a Stuart rotator and incubated for 1 hour at 30°C at 20rpm. The wash liquor was then removed, and the swatches were rinsed twice with 15<sup>0</sup>dH water and dried on filter paper over night. The remission (REM<sup>460nm</sup>) values were measured using a Macbeth Color-Eye 7000 (CE7000), and are displayed in table 4. Delta values (REM<sup>460nm</sup><sub>(swatch washed with enzyme)</sub> – REM<sup>460nm</sup><sub>(swatch washed without enzyme)</sub>) and the wash performance synergies, WP<sub>syn</sub> (ΔREM<sup>460nm</sup><sub>(Blend)</sub> – ΔREM<sup>460nm</sup><sub>(sum of individual enzyme treatments)</sub>) are also indicated.

Table 4. Synergistic effect of hexosaminidase and DNase on cleaning in model A detergent on EPS swatches.

| Enzyme                                                                  | Enzyme concentration (µg/ml) | REM <sup>460nm</sup> values | ΔREM <sup>460nm</sup> (REM <sup>460nm</sup> <sub>with enzyme</sub> – REM <sup>460nm</sup> <sub>without enzyme</sub> ) | WP <sub>Synergy</sub> (ΔREM <sup>460nm</sup> <sub>(Blend)</sub> – ΔREM <sup>460nm</sup> <sub>(sum of individual enzyme treatments)</sub> ) |
|-------------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Wfk20A, no EPS                                                          | 0                            | 68,0                        |                                                                                                                       |                                                                                                                                            |
| Wfk20A EPS swatch, No enzyme                                            | 0                            | 34,2                        |                                                                                                                       |                                                                                                                                            |
| Wfk20A EPS swatch, DNase (SEQ ID NO 13)                                 | 0,2                          | 35,5                        | 1,3                                                                                                                   |                                                                                                                                            |
| Wfk20A EPS swatch, hexosaminidase (SEQ ID NO 84)                        | 0,2                          | 40,8                        | 6,6                                                                                                                   |                                                                                                                                            |
| Wfk20A EPS swatch, hexosaminidase (SEQ ID NO 98)                        | 0,2                          | 46,4                        | 12,2                                                                                                                  |                                                                                                                                            |
| Wfk20A EPS swatch, hexosaminidase (SEQ ID NO 84) + DNase (SEQ ID NO 13) | 0,2 + 0,2                    | 55,3                        | 21,1                                                                                                                  | 13,2                                                                                                                                       |
| Wfk20A EPS swatch,                                                      | 0,2 + 0,2                    | 59,5                        | 25,3                                                                                                                  | 11,8                                                                                                                                       |

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|                                                         |  |  |  |  |
|---------------------------------------------------------|--|--|--|--|
| hexosaminidase (SEQ ID NO 98) +<br>DNase (SEQ ID NO 13) |  |  |  |  |
|---------------------------------------------------------|--|--|--|--|

5

As seen in table 4, an enzyme blend comprising hexosaminidase and DNase provides superior deep-cleaning properties in model A detergent as compared to the individual enzymes, given that the wash performance of the enzyme blend ( $\Delta\text{REM}^{460\text{nm}}$  (blend)) clearly exceed the sum of the performances seen for of the individual enzymes ( $\Delta\text{REM}^{460\text{nm}}$  (sum of individual enzyme treatments)), i.e.  $\text{WP}_{\text{syn}} > 0$ . This clearly suggests that there is a synergetic effect between the two enzymes on the deep-cleaning properties in model A. This also suggests that the different EPS components targeted by these enzymes are localized in complex macromolecular structures, which shield each other from enzymatic hydrolysis.

**Claims****What is claimed is:**

5           1.       A cleaning composition comprising at least 0.01 ppm DNase, at least 0.01 ppm hexosaminidase and cleaning component(s), wherein the cleaning component(s) is selected from a group consisting of:

- a.   0.1 to 60 wt% of at least one surfactant;
- b.   0 to 50 wt% of a builder; and
- 10       c.   0 to 20 wt% of a bleach component,

and combinations thereof.

2.   The cleaning composition according to claim 1 wherein the DNase is a NUC1 or NUC1A DNase and comprises one or both of the motifs [D/M/L][S/T]GYSR[D/N] (SEQ ID NO: 73),  
15   ASXNRSKG (SEQ ID NO: 74).

3.   The cleaning composition according to claim 1 or 2, wherein the DNase is selected from the group of polypeptides:

- a)   a polypeptide having at least 80% sequence identity to the polypeptide shown in  
20   SEQ ID NO: 1,
- b)   a polypeptide having at least 80% sequence identity to the polypeptide shown in  
SEQ ID NO: 2,
- c)   a polypeptide having at least 80% sequence identity to the polypeptide shown in  
SEQ ID NO: 3,
- 25       d)   a polypeptide having at least 80% sequence identity to the polypeptide shown in  
SEQ ID NO: 4,
- e)   a polypeptide having at least 80% sequence identity to the polypeptide shown in  
SEQ ID NO: 5,
- f)   a polypeptide having at least 80% sequence identity to the polypeptide shown in  
30   SEQ ID NO: 6,
- g)   a polypeptide having at least 80% sequence identity to the polypeptide shown in  
SEQ ID NO: 7,
- h)   a polypeptide having at least 80% sequence identity to the polypeptide shown in  
SEQ ID NO: 8,
- 35       i)   a polypeptide having at least 80% sequence identity to the polypeptide shown in  
SEQ ID NO: 9,

j) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 10,

k) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 11,

5 l) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 12,

m) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 13,

10 n) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 14,

o) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 15,

p) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 16,

15 q) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 17,

r) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 18,

20 s) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 19,

t) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 20,

u) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 21,

25 v) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 22,

w) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 23,

30 x) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 24, and

y) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 25,

and combinations thereof.

35 4. The cleaning composition according to claim 1, wherein the DNase is a NUC1 or NUC1A DNase and comprises one or both of the motifs [V/I]PL[S/A]NAWK (SEQ ID NO: 75) or NPQL (SEQ ID NO: 76).

5. The cleaning composition according to claim 1 or 4, wherein the DNase is selected from the group of polypeptides:

a) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 26,

b) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 27,

c) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 28,

d) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 29,

e) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 30,

f) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 31,

g) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 32,

h) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 33,

i) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 34,

j) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 35,

k) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 36,

l) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 37, and

m) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 38,

and combinations thereof.

6. The cleaning composition according to claim 1, wherein the DNase is a NUC1 or NUC1A DNase and comprises one or both of the motifs P[Q/E]L[W/Y] (SEQ ID NO: 77) or [K/H/E]NAW (SEQ ID NO: 78).

7. The cleaning composition according to claim 1 or 6, wherein the DNase is selected from the group of polypeptides:

a) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 39,

b) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 40,

5 c) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 41,

d) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 42,

10 e) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 43

f) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 44,

g) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 45,

15 h) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 46,

i) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 47,

20 j) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 48,

k) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 49,

l) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 50, and

25 m) a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 51,

and combinations thereof.

8. The cleaning composition according to claim 1, wherein the DNase is selected from the group consisting of:

a) polypeptide obtainable from *Bacillus licheniformis* having a sequence identity to the polypeptide shown in SEQ ID NO: 65 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity,

35 b) polypeptide obtainable from *Bacillus subtilis* having a sequence identity to the polypeptide shown in SEQ ID NO: 66 of at least 60%, e.g., at least 65%, at least 70%, at

least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity,

c) polypeptide obtainable from *Aspergillus oryzae* having a sequence identity to the polypeptide shown in SEQ ID NO: 67 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity,

d) polypeptide obtainable from *Trichoderma harzianum* having a sequence identity to the polypeptide shown in SEQ ID NO: 68 of at least 60%, e.g., at least 65%, at least 70%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% and which have DNase activity, and combinations thereof.

9. The cleaning composition of any of claims 1 to 8, wherein the hexosaminidase is selected from:

a) a polypeptide having hexosaminidase activity selected from the group consisting of: a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 82, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 83, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 84, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 85, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 86, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 87, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 88, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 89, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 90, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 91, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 92, a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 93; a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 94; a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 95; a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 96; a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 97; a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 98; a polypeptide having at least 80% sequence identity to the polypeptide shown in SEQ ID NO: 99;

b) a polypeptide having N-acetylglucosaminidase activity, preferably  $\beta$ -N-acetylglucosaminidase activity; and

c) a polypeptide comprising a GH20 domain,  
and combinations thereof.

5 10. The use of the cleaning composition according to any of the previous claims for cleaning  
of an item, wherein the item is a textile or a surface.

11. A method of formulating a cleaning composition comprising adding a DNase, a  
hexosaminidase and at least one cleaning component.

10 12. A kit intended for deep cleaning, wherein the kit comprises a solution of an enzyme  
mixture comprising a DNase, and a hexosaminidase.

13. A method of deep cleaning of an item, comprising the steps of:

15 a) contacting the item with a wash liquor solution comprising an enzyme mixture  
comprising at least 0.00001 ppm of a DNase, at least 0.00001 ppm of a hexosaminidase;  
and a cleaning component, wherein the cleaning component comprises at least a  
surfactant; optionally a builder, and optionally a bleach component; and

b) optionally rinsing the item,  
wherein the item is preferably a textile.

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