

(19)



(11) Publication number:

SG 182961 A1

(43) Publication date:

30.08.2012

(51) Int. Cl:

;

(12)

Patent Application

(21) Application number: **2012047692**

(71) Applicant:

**NOVARTIS AG LICHTSTRASSE 35,
CH-4056 BASEL SWITZERLAND CH**

(22) Date of filing: **26.06.2008**

(30) Priority: **EP 07111316.1 28.06.2007**

EP 07115197.1 29.08.2007

(72) Inventor:

**FLOHR, STEFANIE
PASSWANGSTRASSE 3 CH-4153
REINACH CH
RANDL, STEFAN ANDREAS
GARTNERSTRASSE 55 CH-4057 BASEL
CH
OSTERMANN, NILS MÜHLENSTRASSE
43 79589 BINZEN DE
HASSIEPEN, ULRICH
PESTALOZZISTRASSE 56 79540
LÖRRACH DE
BERST, FREDERIC 21, RUE DES
VALLONS F-68130 ALTKIRCH FR
BODENDORF, URSULA
SARNERSTRASSE 10 CH-4055 BASEL
CH
GERHARTZ, BERND HALTINGER PFAD
8 79539 LÖRRACH DE
MARZINZIK, ANDREAS
WOLLBACHERSTRASSE 4 79576 WEIL
DE
EHRHARDT, CLAUS
GROSSMANNSTRASSE 17 79541
LÖRRACH DE
MEINGASSNER, JOSEF GOTTFRIED
NOVARTIS INSTITUTES FOR
BIOMEDICAL RESEARCH GMBH & CO
KG POSTFACH 80 A-1235 WIEN AT**

(54) Title:

KALLIKREIN 7 MODULATORS

(57) Abstract:

- 188 - ABSTRACT KALLIKREIN 7 MODULATORS The present invention relates to the crystal structure of the serine protease kallikrein 7 and to the use of this crystal structure in drug discovery. The present invention also relates to compounds binding specifically to this active site of kallikrein 7. No Suitable Figure.

ABSTRACT

KALLIKREIN 7 MODULATORS

The present invention relates to the crystal structure of the serine protease kallikrein 7 and to the use of this crystal structure in drug discovery. The present invention also relates to compounds binding specifically to this active site of kallikrein 7.

No Suitable Figure.

Kallikrein 7 modulators

Field of the Invention

The present invention relates to the crystal structure of the serine protease kallikrein 7 and to the use of this crystal structure in drug discovery. The present invention also relates to compounds binding specifically to this active site of kallikrein 7.

Background of the Invention

Kallikrein 7 is a S1 serine protease of the kallikrein gene family displaying a chymotrypsin like activity. Human kallikrein 7 (hK7, KLK7 or stratum corneum chymotryptic enzyme (SCCE), Swissprot P49862) is mainly expressed in the skin and appears to play an important role in skin physiology (1, 2, 3). hK7 is involved in the degradation of the intercellular cohesive structure in cornified squamous epithelia in the process of desquamation. The desquamation process is well regulated and delicately balanced with the *de novo* production of corneocytes to maintain a constant thickness of the stratum corneum. In this regard, hK7 is reported to be able to cleave the corneodesmosomal proteins corneodesmosin and desmocollin 1 (4, 5, 6). In addition, recently it has been shown that the two lipid processing enzymes β -glucocerebrosidase and acidic sphingomyelinase can be degraded by hK7 (7). Both lipid processing enzymes are co-secreted with their substrates glucosylceramides and sphingomyelin and process these polar lipid precursors into their more non-polar products e.g. ceramides, which are subsequently incorporated into the extracellular lamellar membranes. The lamellar membrane architecture is critical for a functional skin barrier. Finally, hK7 has been shown to activate the pro-inflammatory cytokine Pro-interleukin-1 β (IL-1 β) (8) and to (in)activate cathelicidines (hCAP18) which regulate an important defense mechanism to prevent infections against a wide variety of microbial pathogens (34).

Recent studies link an increased activity of hK7 to inflammatory skin diseases like atopic dermatitis, psoriasis or Netherton's syndrome. An increased hK7 activity might lead to an uncontrolled degradation of corneodesmosomes resulting in a miss-regulated desquamation,

an enhanced degradation of lipid processing enzymes resulting in a disturbed lamellar membrane architecture or an uncontrolled (in)activation of the pro-inflammatory cytokine IL-1 β or the cathelicidin hCAP18. The net result could lead to an impaired skin barrier function and inflammation (see also WO-A-2004/108139).

The hK7 activity is controlled on several levels. Various factors might be responsible for an increased hK7 activity in inflammatory skin diseases. Firstly, the amount of protease being expressed might be influenced by genetic factors. Such a genetic link, a polymorphism in the 3'-UTR in the hK7 gene, was recently described (9). The authors hypothesis that the described 4 base pair insertion in the 3'-UTR of the kallikrein 7 gene stabilizes the hK7 mRNA and results in an overexpression of hK7. Secondly, since hK7 is secreted via lamellar bodies to the stratum corneum extracellular space as zymogen and it is not able to autoactivate, it needs to be activated by another protease e.g. kallikrein 5 (5). Uncontrolled activity of such an activating enzyme might result in an overactivation of hK7. Thirdly, activated hK7 can be inhibited by natural inhibitors like LEKTI, ALP or elafin (10, 11). The decreased expression or the lack of such inhibitors might result in an enhanced activity of hK7. Recently it was found, that mutations in the spink5 gene, coding for LEKTI, are causative for Netherton's syndrome (12) and a single point mutation in the gene is linked to atopic dermatitis (13, 14). Finally, another level of controlling the activity of hK7 is the pH. hK7 has a neutral to slightly alkaline pH optimum (2) and there is a pH gradient from neutral to acidic from the innermost to the outermost layers in the skin. Environmental factors like soap might result in a pH increase in the outermost layers of the stratum corneum towards the pH optimum of hK7 thereby increasing the hK7 activity.

The hypothesis that an increased activity of hK7 is linked to inflammatory skin diseases is supported by the following studies: Firstly, Netherton's syndrome patients show a phenotype dependent increase in serine protease activity, a decrease in corneodesmosomes, a decrease in the lipid processing enzymes β -glucocerebrosidase and acidic sphingomyelinase, and an impaired barrier function (15, 16). Secondly, a transgenic mice overexpressing human kallikrein 7 shows a skin phenotype similar to that found in patients with atopic dermatitis (17, 18, 19). Thirdly, in the skin of atopic dermatitis and psoriasis patients elevated levels of hK7 were described (17, 20).

Therefore, hK7 is considered to be a potential target for the treatment of inflammatory skin diseases like atopic dermatitis, psoriasis or Netherton's syndrome and there is a need for specific modulators (agonists or inhibitors) thereof.

In order to fulfill this need, the present inventors have developed methods for cloning, expression, purification and crystallization of hK7, and have been able to obtain for the first time the structure of human kallikrein 7 at a very high resolution.

This structure of human kallikrein 7 at a very high resolution has allowed for the identification of the active site of the enzyme, and compounds binding specifically to said active site of kallikrein 7.

Summary of the Invention

In order to fulfill the needs identified herein-above, the present inventors have developed methods for cloning, expression, purification and crystallization of hK7, and have been able to obtain for the first time the structure of human kallikrein 7 at a very high resolution.

The obtained structure of human kallikrein 7 at a very high resolution has allowed to identify the active site of the enzyme and compounds binding specifically to said active site of kallikrein 7. The present inventors have furthermore been able to confirm that these compounds have a modulatory effect on kallikrein 7.

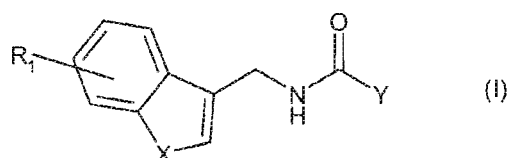
The present invention thus pertains to a crystal of human kallikrein 7 comprising the binding pocket having a three-dimensional structure characterized by the structure coordinates of Table 3 below. This crystal can also comprise a co-crystallised ligand.

The present invention also pertains to a computer readable medium comprising data storage material encoded with computer readable data wherein said data comprises the structure coordinates of a crystal according to the invention, and to the use of this crystal for the generation of crystal structure data.

Another embodiment of the present invention is a method of identifying a ligand that binds to kallikrein 7, this method comprising the steps of (i) using the three dimensional structure data generated according to the invention to select and/or design a potential ligand that

binds to kallikrein 7, and (ii) identifying among the potential ligand selected in step (i), those ligands that bind to kallikrein 7 in an *in vitro*, *in vivo* or cell-based assay.

Yet another embodiment of the present invention relates to a modulator of kallikrein 7 characterised in that it binds in the binding pocket having a three-dimensional structure characterized by the structure coordinates of Table 3. This modulator of kallikrein 7 can be a compound of formula

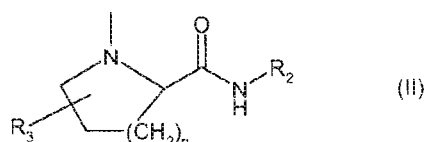


wherein

R₁ is hydrogen, cyano, (C₁₋₈)alkyl, (C₂₋₈)alkenyl, (C₂₋₈)alkynyl, halogen, (C₁₋₈)alkylamino, (C₁₋₈)alkylamino(C₁₋₈)alkyl, (C₁₋₈)alkoxy, halo(C₁₋₈)alkyl,

X is CH=CH, NH, N=CH, O or S,

Y is a group of formula



wherein

- the N-containing ring system is optionally annelated with (C₃₋₈)cycloalkyl, (C₆₋₁₈)aryl or heterocyclyl having 5 to 6 ring members and 1 to 4 heteroatoms selected from N, O, S,
- n is 1, 2 or 3,
- R₂ is
 - (C₁₋₈)alkyl, (C₁₋₈)alkylamino, (C₁₋₈)alkylamino(C₁₋₈)alkyl, di(C₁₋₈)alkylamino(C₁₋₈)alkyl, halo(C₁₋₈)alkyl, (C₁₋₈)alkoxy, (C₁₋₈)alkoxy(C₁₋₈)alkyl, or
 - (CH₂)_m-Z, wherein Z is unsubstituted or substituted (C₃₋₈)cycloalkyl, (C₆₋₁₈)aryl or heterocyclyl having 5 to 6 ring members and 1 to 4 heteroatoms selected from N, O, S and m is 0, 1 or 2,
- R₃ is hydrogen, (C₁₋₈)alkyl, (C₁₋₈)alkoxy, (C₆₋₁₈)aryl or heterocyclyl having 5 to 6 ring members and 1 to 4 heteroatoms selected from N, O, S.

In particular, this modulator can be a compound, wherein

R₁ is hydrogen, ethynyl, chloro or bromo,

X is CH=CH or S,

Y is a group of formula (II), wherein

- the N-containing ring system is optionally annelated with cyclopropyl, cyclopentyl or phenyl,
- n is 1 or 2,
- R₂ is (C₁₋₈)alkyl, (C₁₋₄)alkylamino, di(C₁₋₄)alkylamino(C₁₋₄)alkyl, (C₁₋₄)alkoxy, (C₁₋₄)alkoxy(C₁₋₄)alkyl or a group (CH₂)_m-Z, wherein Z is unsubstituted cyclohexyl, unsubstituted phenyl, phenyl substituted by (C₁₋₄)alkoxy, phenyl substituted by heterocyclyl having 6 ring members and 1 or 2 heteroatoms selected from N, O, or unsubstituted or substituted heterocyclyl having 6 ring members and 1 or 2 heteroatoms selected from N, O;
- m is 1 or 2,
- R₃ is hydrogen or (C₁₋₄)alkoxy.

In another embodiment of such a modulator, Y can be a group of formula (II), wherein

- the N-containing ring system is optionally annelated with cyclopropyl, cyclopentyl or phenyl,
- R₂ is methyl, dimethylaminoethyl, methoxyethyl, or a group (CH₂)_m-Z, wherein Z is unsubstituted cyclohexyl, unsubstituted phenyl, phenyl substituted by methoxy, piperazinyl or morpholinyl; pyridinyl, piperidinyl, tetrahydrofuranyl, unsubstituted piperazinyl or piperazinyl substituted by methyl or phenyl,

and m, n, R₁, R₃ and X are as defined above.

The compounds of the invention can be in the form of a salt and/or for use as a pharmaceutical. The present invention hence also relates to a pharmaceutical composition comprising a compound as described herein-above in association with at least one pharmaceutical excipient, and to a method of treating disorders mediated by kallikrein-7 activity, which treatment comprises administering to a subject in need of such treatment an effective amount of a compound of the invention.

According to the present invention, a disorder which is mediated by kallikrein-7 activity can be selected from the group consisting of inflammatory and/or hyperproliferative and pruritic skin diseases such as keloids, hypertrophic scars, acne, atopic dermatitis, psoriasis, pustular

psoriasis, rosacea, Netherton's syndrome or other pruritic dermatoses such as prurigo nodularis, unspecified itch of the elderly as well as other diseases with epithelial barrier dysfunction such as aged skin, inflammatory bowel disease and Crohn's disease, as well as pancreatitis, or of cancer, in particular ovarian cancer.

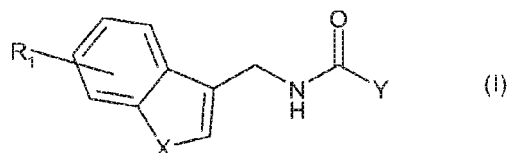
Detailed Description of the Invention

List of abbreviations

Abbreviation	Description
DMSO	dimethylsulfoxide
hK7	human kallikrein 7
UTR	untranslated region
LEKTI	lympho-epithelial Kazal-type related inhibitor
Spink5	serine protease inhibitor Kazal-type 5
ALP	antileukoprotease
HPLC	high performance liquid chromatography
GluHCl	glucosamine hydrochloride
pro-hK7	pro-human kallikrein 7
PEG	polyethylene glycol
SDS	sodium dodecyl sulfate
Tris	tris-(hydroxymethyl)-amino methane
IPTG	isopropyl- β -D-thiogalactoside
GSH	Glutathion or γ -L-Glutamyl-L-cysteinylglycin
GSSH	oxidized form of glutathion
EDTA	ethylenediaminetetraacetic acid
DMSO	dimethylsulfoxide
HCl	hydrochloric acid
SLS	Swiss Light Source
a.u.	asymmetric unit
DTT	D,L-dithiothreitol

Kallikrein 7 is a S1 serine protease of the kallikrein gene family displaying a chymotrypsin like activity. Human kallikrein 7 (hK7, KLK7 or stratum corneum chymotryptic enzyme (SCCE), Swissprot P49862) plays an important role in skin physiology (1, 2, 3).

The present invention provides a crystal of human kallikrein 7 comprising the binding pocket having a three-dimensional structure characterized by the structure coordinates of Table 3 below. The present invention also provides to a computer readable medium comprising data storage material encoded with computer readable data wherein said data comprises the structure coordinates of a crystal according to the invention, and the use of this crystal for the generation of crystal structure data. Moreover, the present invention provides a method of identifying a ligand that binds to kallikrein 7, this method comprising the steps of (i) using the three dimensional structure data generated according to the invention to select and/or design a potential ligand that binds to kallikrein 7, and (ii) identifying among the potential ligand selected in step (i), those ligands that bind to kallikrein 7 in an *in vitro*, *in vivo* or cell-based assay. Modulator of kallikrein 7 according to the present invention are characterised in that it binds in the binding pocket having a three-dimensional structure characterized by the structure coordinates of Table 3 and can be a compound of formula

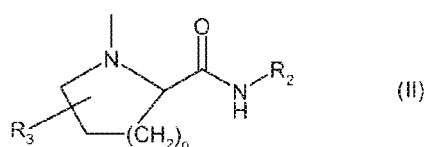


wherein

R₁ is hydrogen, cyano, (C₁₋₈)alkyl, (C₂₋₈)alkenyl, (C₂₋₈)alkynyl, halogen, (C₁₋₈)alkylamino, (C₁₋₈)alkylamino(C₁₋₈)alkyl, (C₁₋₈)alkoxy, halo(C₁₋₈)alkyl,

X is CH=CH, NH, N=CH, O or S,

Y is a group of formula



wherein

- the N-containing ring system is optionally annelated with (C₃₋₈)cycloalkyl, (C₆₋₁₈)aryl or heterocyclyl having 5 to 6 ring members and 1 to 4 heteroatoms selected from N, O, S,
- n is 1, 2 or 3,

- 8 -

- R_2 is
 - (C_{1-8}) alkyl, (C_{1-8}) alkylamino, (C_{1-8}) alkylamino (C_{1-8}) alkyl, di (C_{1-8}) alkylamino (C_{1-8}) alkyl, halo (C_{1-8}) alkyl, (C_{1-8}) alkoxy, (C_{1-8}) alkoxy (C_{1-8}) alkyl, or
 - $(CH_2)_m$ -Z, wherein Z is unsubstituted or substituted (C_{3-8}) cycloalkyl, (C_{6-18}) aryl or heterocyclyl having 5 to 6 ring members and 1 to 4 heteroatoms selected from N, O, S and m is 0, 1 or 2,
- R_3 is hydrogen, (C_{1-8}) alkyl, (C_{1-8}) alkoxy, (C_{6-18}) aryl or heterocyclyl having 5 to 6 ring members and 1 to 4 heteroatoms selected from N, O, S.

The crystals according to the invention preferably belong to the orthorhombic space group $P2_12_12_1$ (triclinic). The crystals have 1 molecule per asymmetric unit.

Depending on the conditions used for crystallization, the parameters characterising the unit cell may vary with a limited range, at least within the range of the resolution. The resolution of the X-ray crystallography is typically ≤ 5 Ångstroms and by means of the purification method described therein, it is possible to provide crystals of such high internal order that a resolution of ≤ 2 Å can be achieved..

The term "unit cell" refers to the basic shape block. The entire volume of a crystal may be constructed by regular assembly of such blocks. Each unit cell comprises a complete representation of the unit of pattern, the repetition of which builds up the crystal.

The term "space group" according to the invention refers to the arrangement of symmetry elements of a crystal.

The term "structure coordinates" or "atomic coordinates" refers to mathematical coordinates derived from the mathematical equations related to the pattern obtained on diffraction of a monochromatic beam of X-rays by the atoms (scattering centers) of a crystal comprising hK7. The diffraction data are used to calculate an electron density map of the repeating unit of the crystal. The electron density maps are used to establish the positions of the individual atoms within the unit cell of the crystal. The structure coordinates of hK7 can be found in Table 3.

A "fragment" of Kallikrein 7 comprises more than 50% consecutive amino acids of the sequence of the Kallikrein 7.

As used herein, a "homologue" of that sequence shares at least 70% identity, preferably 80% identity, more preferably 90%, and even more preferably 95% identity with the corresponding sequence when performing optimal alignment. Optimal alignment of sequences for determining a comparison window may be conducted by the local homology algorithm of Smith and Waterman (*J. Theor. Biol.*, 91 (2) pgs. 370-380 (1981), by the homology alignment algorithm of Needleman and Wunsch, *J. Mol. Biol.*, 48(3) pgs. 443-453 (1972), by the search for similarity via the method of Pearson and Lipman, *PNAS, USA*, 85(5) pgs. 2444-2448 (1988) or by computerized implementations of these algorithms (GAP, BESTFIT, FASTA and TFASTA in the Wisconsin Genetics Software Package Release 7.0, Genetic Computer Group, 575, Science Drive, Madison, Wisconsin).

The best alignment (*i.e.*, resulting in the highest percentage of identity over the comparison window) generated by the various methods is selected for determining percentage identity.

The terms "ligand" or "modulator", which are used interchangeably herein, refers to a molecule or group of molecules that bind to one or more specific sites of Kallikrein 7. A ligand according to the invention can be an agonist or an antagonist. In addition, ligands according to the invention are preferably low molecular weight molecules.

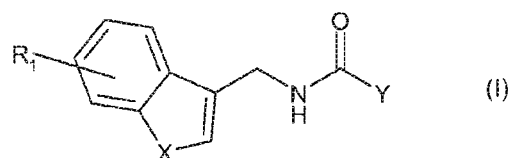
The term "low molecular weight molecules" according to the invention refers to preferably organic compounds generally having a molecular weight less than about 1000, more preferably less than about 500.

More preferably, said ligand inhibits kallikrein 7 biological activity. A compound is considered as an kallikrein 7 inhibitor if it has an IC_{50} ranging from 0.001nM to 1.0 μ M.

Preferred modulators are organic compounds, e.g. 1,2-dicarboxylic acid amides of an N-containing ring system, such as e.g. pyrrolidine, e.g. which are antagonists of Kallikrein-7 activity.

In one aspect the present invention is a compound of formula

- 10 -

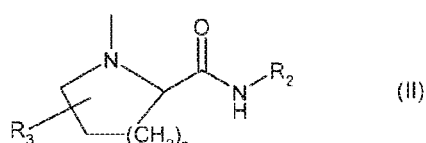


wherein

R₁ is hydrogen, cyano, alkyl, alkenyl, alkynyl, halogen, alkylamino, alkylaminoalkyl, alkoxy, haloalkyl,

X is CH=CH, NH, N=CH, O or S,

Y is a group of formula



wherein

- the N-containing ring system is optionally annelated with cycloalkyl, aryl or heterocyclyl having 5 to 6 ring members and 1 to 4 heteroatoms selected from N, O, S,

- n is 1, 2 or 3,

- R₂ is

- alkyl, alkylamino, alkylaminoalkyl, dialkylaminoalkyl, haloalkyl, alkoxy, alkoxyalkyl,

or

- (CH₂)_m-Z, wherein Z is unsubstituted or substituted cycloalkyl, aryl or heterocyclyl having 5 to 6 ring members and 1 to 4 heteroatoms selected from N, O, S and m is 0, 1 or 2,

- R₃ is hydrogen, alkyl, alkoxy, aryl or heterocyclyl having 5 to 6 ring members and 1 to 4 heteroatoms selected from N, O, S.

Any group (substituent) defined herein may comprise 1 to 18 carbon atoms, for example

- alkyl e.g. includes (C1-12)alkyl, such as (C1-4)alkyl, e.g. methyl, ethyl, propyl, isopropyl, n-butyl, tert-butyl, sec-butyl, n-pentyl, neopentyl, n-hexyl;

- alkenyl e.g. includes (C2-12)alkenyl, such as ethenyl, propenyl, butenyl, 1-methyl-2-buten-1-

yl, alkadienes and the like;

- alkynyl e.g. includes (C2-12)alkynyl, such as ethynyl;

- cycloalkyl e.g. includes (C3-12)cycloalkyl, such as cyclopropyl, cyclobutyl, cyclopentyl,

- 11 -

cyclohexyl;

- alkoxy e.g. includes (C1-12)alkoxy, such as methoxy, ethoxy;
- aryl includes (C6-18)aryl, e.g. phenyl, naphthyl;
- aliphatic heterocyclyl and aromatic heterocyclyl;
- heterocyclyl having 1 to 4 heteroatoms selected from N, O, S; such as heterocyclyl having
 - 1 to 2 heteroatoms selected from N, O, e.g. including
 - pyridinyl, e.g. pyridin-3-yl, pyridin-4-yl;
 - piperidinyl, e.g. piperidin-4-yl;
 - piperazinyl, e.g. piperazin-1-yl;
 - morpholinyl, e.g. morpholin-4-yl;
 - tetrahydrofuranyl, e.g. tetrahydrofuran-2-yl;
- halogen includes F, Cl, Br, I, such as chloro, bromo;

Any group defined herein may be unsubstituted or substituted, e.g. one or morefold.

Substituents include e.g. methyl, methoxy, ethynyl, chloro, bromo.

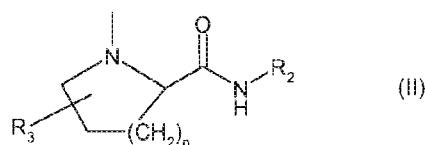
Alkyl, alkenyl, alkynyl, aryl and heterocyclyl include unsubstituted or substituted alkyl, aryl or heterocyclyl, e.g. substituted by groups which are conventional in organic chemistry.

In one aspect the present invention is a compound of formula (I) as defined above, wherein

R₁ is hydrogen, cyano, (C₁₋₈)alkyl, (C₂₋₈)alkenyl, (C₂₋₈)alkynyl or halogen

X is CH=CH, NH, N=CH, O or S,

Y is a group of formula



wherein

- the N-containing ring system is optionally annelated with (C₃₋₈)cycloalkyl, (C₆₋₁₈)aryl or heterocyclyl having 5 to 6 ring members and 1 to 2 heteroatoms selected from N, O, S,
- n is 1, 2 or 3,
- R₂ is
 - (C₁₋₈)alkyl, (C₁₋₈)alkylamino, (C₁₋₈)alkylamino(C₁₋₈)alkyl, di(C₁₋₈)alkylamino(C₁₋₈)alkyl, (C₁₋₈)alkoxy, (C₁₋₈)alkoxy(C₁₋₈)alkyl, or

- 12 -

- $(\text{CH}_2)_m\text{-Z}$, wherein Z is unsubstituted or substituted (C_{3-8}) cycloalkyl, (C_{6-18}) aryl or heterocyclyl having 5 to 6 ring members and 1 to 2 heteroatoms selected from N, O, S and m is 1 or 2,
- R_3 is hydrogen, (C_{1-8}) alkyl or (C_{1-8}) alkoxy.

In one aspect the present invention is a compound of formula (I), wherein

R_1 is hydrogen, ethynyl, chloro or bromo,

X is CH=CH or S,

Y is a group of formula (II), wherein

- the N-containing ring system is optionally annelated with cyclopropyl, cyclopentyl or phenyl,
- n is 1 or 2,
- R_2 is (C_{1-8}) alkyl, (C_{1-4}) alkylamino, $\text{di}(\text{C}_{1-4})$ alkylamino (C_{1-4}) alkyl, (C_{1-4}) alkoxy, (C_{1-4}) alkoxy (C_{1-4}) alkyl or a group $(\text{CH}_2)_m\text{-Z}$, wherein Z is unsubstituted cyclohexyl, unsubstituted phenyl, phenyl substituted by (C_{1-4}) alkoxy, phenyl substituted by heterocyclyl having 6 ring members and 1 or 2 heteroatoms selected from N, O, or unsubstituted or substituted heterocyclyl having 6 ring members and 1 or 2 heteroatoms selected from N, O;
- m is 1 or 2,
- R_3 is hydrogen or (C_{1-4}) alkoxy.

In one aspect the present invention is a compound of formula (I) and Y is a group of formula (II), wherein

- the N-containing ring system is optionally annelated with cyclopropyl, cyclopentyl or phenyl,
- R_2 is methyl, dimethylaminoethyl, methoxyethyl, or a group $(\text{CH}_2)_m\text{-Z}$, wherein Z is unsubstituted cyclohexyl, unsubstituted phenyl, phenyl substituted by methoxy, piperazinyl or morpholinyl; pyridinyl, piperidinyl, tetrahydrofuranyl, unsubstituted piperazinyl or piperazinyl substituted by methyl or phenyl,

and m, n, R_1 , R_3 and X are as defined above.

In one aspect the present invention is a compound of formula (I), wherein

X is CH=CH,

R₁ is ethynyl or chloro,

Y is a group of formula (II), wherein

n is 1,

R₃ is hydrogen,

R₂ is methyl, methoxyethyl, dimethylaminoethyl, pyridin-3-ylmethyl, pyridin-4-ylmethyl, pyridin-3-yl-ethyl, pyridin-4-yl-ethyl, 6-methoxy-pyridin-3-ylmethyl, (4-methoxy-phenyl)-ethyl, (4-methyl-piperazin-1-yl)-ethyl, (4-benzyl-piperazin-1-yl)-ethyl, 4-(4-methyl-piperazin-1-yl)-benzyl, 1-methyl-piperidin-4-ylmethyl, 2-(4-morpholin-4-ylmethyl)-benzyl.

In one aspect the present invention is a compound of formula (I), wherein

X is CH=CH,

R₁ is hydrogen,

Y is a group of formula (II), wherein

The N-containing ring system is optionally annelated with phenyl,

R₃ is hydrogen or phenyl,

n is 1 or 2,

R₂ is benzyl, phenethyl, cyclohexylmethyl, (4-methoxy-phenyl)-ethyl, 3-methyl-butyl, tetrahydrofuran-2-ylmethyl.

In one aspect the present invention is a compound of formula (I), wherein

X is CH=CH,

R₁ is ethynyl,

Y is a group of formula (II), wherein

The N-containing ring system is optionally annelated with cyclopropyl, cyclopentyl, phenyl,

R₃ is hydrogen,

n is 1,

R₂ is pyridin-3-ylmethyl.

In one aspect the present invention is a compound of formula (I), wherein

X is CH=CH

R₁ is ethynyl,

Y is a group of formula (II), wherein

R₃ is methoxy,

n is 1,

R₂ is pyridin-3-ylmethyl.

In one aspect the present invention is a compound of formula (I), wherein

X is CH=CH

R₁ is ethynyl,

Y is a group of formula (II), wherein

R₃ is hydrogen,

n is 2,

R₂ is pyridin-3-ylmethyl.

In one aspect the present invention is a compound of formula (I), wherein

X is S

R₁ is chloro or bromo,

Y is a group of formula (II), wherein

R₃ is hydrogen,

n is 1,

R₂ is (4-methoxy-phenyl)-ethyl.

In a compound of formula I each single defined substituent may be a preferred substituent, e.g. independently of each other substituent defined.

In another aspect the present invention provides a compound of formula I, selected from the group consisting of

- (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(2-pyridin-3-yl-ethyl)-amide],
- (S)-Pyrrolidine-1,2-dicarboxylic acid 2-[(2-dimethylamino-ethyl)-amide] 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide],
- (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(2-pyridin-4-yl-ethyl)-amide],
- (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(6-methoxy-pyridin-3-ylmethyl)-amide],
- (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(1-methyl-piperidin-4-ylmethyl)-amide],

- (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[4-(4-methyl-piperazin-1-yl)-benzylamide],
- (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-(4-morpholin-4-ylmethyl-benzylamide),
- (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-methylamide,
- (S)-Pyrrolidine-1,2-dicarboxylic acid 2-[(2-(4-benzyl-piperazin-1-yl)-ethyl)-amide] 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide],
- (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(2-methoxy-ethyl)-amide],
- (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(pyridin-3-ylmethyl)-amide],
- (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(pyridin-4-ylmethyl)-amide],
- (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(2-(4-methyl-piperazin-1-yl)-ethyl)-amide],
- (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(6-chloro-naphthalen-1-ylmethyl)-amide] 2-[(2-(4-methoxy-phenyl)-ethyl)-amide],
- (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-chloro-naphthalen-1-ylmethyl)-amide] 2-[(2-(4-methoxy-phenyl)-ethyl)-amide],
- (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(5-bromo-benzo[b]thiophen-3-ylmethyl)-amide] 2-[(2-(4-methoxy-phenyl)-ethyl)-amide],
- (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(5-chloro-benzo[b]thiophen-3-ylmethyl)-amide] 2-[(2-(4-methoxy-phenyl)-ethyl)-amide],
- (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(2-(4-methoxy-phenyl)-ethyl)-amide],
- (2S,4R)-4-Methoxy-pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(pyridin-3-ylmethyl)-amide],
- (S)-Piperidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(pyridin-3-ylmethyl)-amide],
- (S)-Hexahydro-cyclopenta[c]pyrrole-1,2-dicarboxylic acid 2-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 1-[(pyridin-3-ylmethyl)-amide],
- (S)-2,3-Dihydro-indole-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(pyridin-3-ylmethyl)-amide],

- (S)-1,3-Dihydro-isoindole-1,2-dicarboxylic acid 2-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 1-[(pyridin-3-ylmethyl)-amide],
- (1R,2S,5S)-3-Aza-bicyclo[3.1.0]hexane-2,3-dicarboxylic acid 3-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(pyridin-3-ylmethyl)-amide],
- (1S,2S,5R)-3-Aza-bicyclo[3.1.0]hexane-2,3-dicarboxylic acid 3-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(pyridin-3-ylmethyl)-amide],
- (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(naphthalen-1-ylmethyl)-amide] 2-(phenethyl-amide),
- (2S,4S)-4-Phenyl-pyrrolidine-1,2-dicarboxylic acid 1-[(naphthalen-1-ylmethyl)-amide] 2-(phenethyl-amide),
- (2S,4R)-4-Phenyl-pyrrolidine-1,2-dicarboxylic acid 1-[(naphthalen-1-ylmethyl)-amide] 2-(phenethyl-amide),
- (S)-3,4-Dihydro-1H-isoquinoline-2,3-dicarboxylic acid 2-[(naphthalen-1-ylmethyl)-amide] 3-(phenethyl-amide),
- (S)-Piperidine-1,2-dicarboxylic acid 1-[(naphthalen-1-ylmethyl)-amide] 2-(phenethyl-amide),
- (S)-Pyrrolidine-1,2-dicarboxylic acid 2-[[2-(4-methoxy-phenyl)-ethyl]-amide] 1-[(naphthalen-1-ylmethyl)-amide],
- (S)-Pyrrolidine-1,2-dicarboxylic acid 2-benzylamide 1-[(naphthalen-1-ylmethyl)-amide],
- (S)-Pyrrolidine-1,2-dicarboxylic acid 2-cyclohexylmethyl-amide 1-[(naphthalen-1-ylmethyl)-amide],
- (S)-Pyrrolidine-1,2-dicarboxylic acid 2-[(3-methyl-butyl)-amide] 1-[(naphthalen-1-ylmethyl)-amide],
- (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(naphthalen-1-ylmethyl)-amide] 2-[(tetrahydro-furan-2-ylmethyl)-amide],
- (1S,2S,5R)-3-aza-bicyclo[3.1.0]hexane-2,3-dicarboxylic acid 3-[(7-chloro-naphthalen-1-ylmethyl)-amide] 2-[(pyridin-3-ylmethyl)-amide], and
- (1S,2S,5R)-3-aza-bicyclo[3.1.0]hexane-2,3-dicarboxylic acid 3-[(7-chloro-naphthalen-1-ylmethyl)-amide] 2-[[2-(4-methoxy-phenyl)-ethyl]-amide].

The chemical names of the compounds of the present invention as indicated herein are copied from ISIS, version 2.5 (AutoNom 2000 Name).

Compounds provided by the present invention are hereinafter designated as "compound(s) of (according to) the present invention". A compound of the present invention includes a

compound in any form, e.g. in free form, in the form of a salt, in the form of a solvate and in the form of a salt and a solvate.

In another aspect the present invention provides a compound of the present invention in the form of a salt.

Such salts include preferably pharmaceutically acceptable salts, although pharmaceutically unacceptable salts are included, e.g. for preparation / isolation / purification purposes.

A compound of the present invention in free form may be converted into a corresponding compound in the form of a salt; and vice versa. A compound of the present invention in free form or in the form of a salt and in the form of a solvate may be converted into a corresponding compound in free form or in the form of a salt in non-solvated form; and vice versa.

A compound of the present invention may exist in the form of isomers and mixtures thereof; e.g. optical isomers, diastereoisomers, cis/trans conformers. A compound of the present invention may e.g. contain asymmetric carbon atoms and may thus exist in the form of enantiomers or diastereoisomers and mixtures thereof, e.g. racemates. A compound of the present invention may be present in the (R)-, (S)- or (R,S)-configuration preferably in the (R)- or (S)-configuration regarding specified positions in the compound of the present invention.

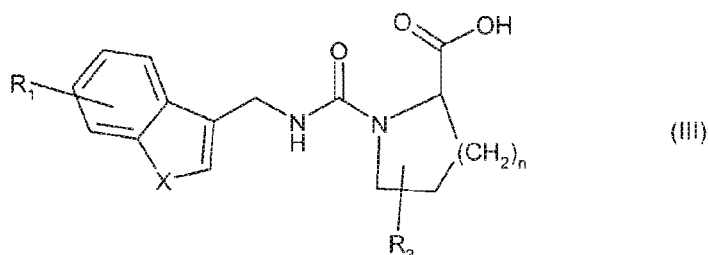
A compound provided by the present invention may be in the (R)- and in the (S)-configuration, e.g. including mixtures thereof, in a compound of formula I, and is preferably in the (R)- or in the (S)-configuration.

Isomeric mixtures may be separated as appropriate, e.g. according, e.g. analogously, to a method as conventional, to obtain pure isomers. The present invention includes a compound of the present invention in any isomeric form and in any isomeric mixture.

The present invention also includes tautomers of a compound of the present invention, where tautomers can exist.

In another aspect the present invention provides a process for the production of a compound of the present invention, e.g. of formula I, comprising the steps

A. reacting a compound of formula



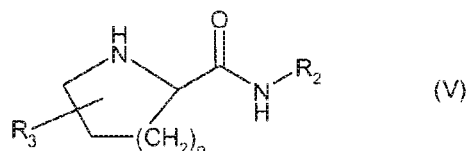
wherein R_1 and R_3 are as defined above, with a compound of formula



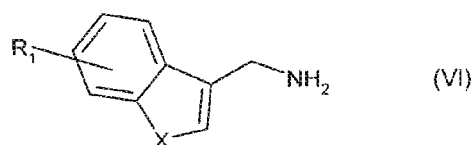
wherein R_2 is as defined above, under appropriate conditions, e.g. in the presence of N-(3-dimethylamino-propyl)-N-carbodiimide-HCl, N,N-diisopropylethylamine, CH_2Cl_2 , trifluoroacetic acid, acetonitril, at appropriate temperatures, e.g. room temperature, for an appropriate time, e.g. over night;

OR

B) reacting a compound of formula



wherein R_2 , R_3 and n are as defined above, with a compound of formula



wherein R_1 and X are as defined above, under appropriate conditions, e.g. in the presence of 4-nitrophenylchloroformate, pyridine, N,N-diisopropylethylamine, CH_2Cl_2 , at appropriate temperatures, e.g. room temperature, for an appropriate time, e.g. over night; and isolating a compound of formula I obtained from the reaction mixture.

In an intermediate of formulae (III), (IV), (V) or (VI) (starting materials), functional groups, if present, optionally may be in protected form or in the form of a salt, if a salt-forming group is present. Protecting groups, optionally present, may be removed at an appropriate stage, e.g. according, e.g. analogously, to a method as conventional

A compound of formula I thus obtained may be converted into another compound of formula I, e.g. or a compound of formula I obtained in free form may be converted into a salt of a compound of formula I and vice versa.

Intermediates (starting materials) of formulae (III), (IV), (V) or (VI) are known or may be prepared according, e.g. analogously, to a method as conventional or as specified herein.

Any compound described herein, e.g. a compound of the present invention and intermediates of formulae (III), (IV), (V) or (VI) may be prepared as appropriate, e.g. according, e.g. analogously, to a method as conventional, e.g. or as specified herein.

The compounds of the present invention, e.g. including a compound of formula I, exhibit pharmacological activity and are therefore useful as pharmaceuticals. E.g., the compounds of the present invention are found to inhibit Kallikrein-7 activity.

Compounds of the present invention have IC_{50} values between 1 nM and 10 μ M e.g. determined in the following assay:

Materials and buffers

The fluorescence-quenched substrate Ac-Glu-Asp(EDANS)-Lys-Pro-Ile-Leu-Phe[^]Arg-Leu-Gly-Lys(DABCYL)-Glu-NH₂ (where [^] indicates the scissile bond, identified by MS analysis) is purchased from Biosyntan (Berlin, Germany) and kept as a 5 mM stock solution in DMSO at -20°C. All other chemicals are of analytical grade.

Enzymatic reactions are conducted in 50 mM sodium citrate buffer at pH 5.6 containing 150 mM NaCl and 0.05 % (w/v) CHAPS.

All protein and peptide containing solutions are handled in siliconized tubes (Life Systems Design, Merenschwand, Switzerland). The compound solutions as well as the enzyme and the substrate solutions are transferred to the 384-well plates (black Cliniplate; cat. no. 95040020 Labsystems Oy, Finland) by means of a CyBi-Well 96-channel pipettor (CyBio AG, Jena, Germany).

Instrumentation for FI measurements

For fluorescence intensity (FI) measurements an Ultra Evolution reader (TECAN, Maennedorf, Switzerland) is used. The instrument is equipped with a combination of a 350 nm (20 nm bandwidth) and a 500 nm (25 nm bandwidth) bandpath filter for fluorescence

excitation and emission acquisition, respectively. To increase the signal:background ratio, an appropriate dichroic mirror is employed. The optical filters and the dichroic mirror are purchased from TECAN. The fluorophores in each well are excited by three flashes per measurement.

Determination of IC₅₀ values

For the determination of IC₅₀ values the assay is performed at room temperature in 384-well plates. All final assay volumes were 30 µl. Test compounds are dissolved in 90 % (v/v) DMSO/water and diluted in water (containing 0.05 % (w/v) CHAPS) to 3-times the desired assay concentration. The 11 final compound concentrations are: 0.3 nM, 1 nM, 3 nM, 10 nM, 30 nM, 100 nM, 300 nM, 1 µM, 3 µM, 10 µM and 30 µM. For each assay, 10 µl water/CHAPS (± test compound) are added per well, followed by 10 µl protease solution (diluted with 1.5x assay buffer). The protease concentration in final assay solution is 0.2 nM (according to the enzyme concentrations determined by the Bradford method). After 1 hour of incubation at room temperature, the reaction is started by addition of 10 µl substrate solution (substrate dissolved in 1.5x assay buffer, final concentration was 2 µM). The effect of the compound on the enzymatic activity is obtained from the linear progress curves and determined from two readings, the first one taken directly after the addition of substrate and the second one after 1 hour. The IC₅₀ value is calculated from the plot of percentage of inhibition vs. inhibitor concentration using non-linear regression analysis software (XLfit, Vers. 4.0; ID Business Solution Ltd., Guildford, Surrey, UK).

The compounds of the present invention show activity in that ASSAY and are therefore indicated for the treatment of disorders (diseases) mediated by Kallikrein-7 activity.

IC₅₀ values for compounds of the present invention are in the range of below 10 µM, preferably below 10 nM, e.g. the compound of example 36 has an IC₅₀ value of 3 nM.

Disorders, e.g. including diseases, mediated by Kallikrein-7 activity and which are prone to be successfully treated with Kallikrein-7 antagonists, e.g. with compounds of the present invention, include disorders, wherein the activity of Kallikrein-7 play a causal or contributory role, e.g. diseases involved with epithelial dysfunction such as inflammatory and/or hyperproliferative and pruritic skin diseases like e.g. atopic dermatitis, psoriasis, Netherton syndrome or other pruritic dermatoses such as prurigo nodularis, unspecified itch as well as other diseases with epithelial barrier dysfunction such as inflammatory bowel disease or

Crohn's disease.

In another aspect the present invention provides

- a compound of the present invention for use as a pharmaceutical,
- the use of a compound of the present invention as a pharmaceutical,
- the use of a compound of the present invention for the manufacture of a medicament, e.g. for the treatment of disorders mediated by Kallikrein-7 activity.

For pharmaceutical use one or more compounds of the present invention may be used, e.g. one, or a combination of two or more compounds of the present invention, preferably one compound of the present invention is used.

A compound of the present invention may be used as a pharmaceutical in the form of a pharmaceutical composition.

In another aspect the present invention provides a pharmaceutical composition comprising a compound of the present invention in association with at least one pharmaceutically acceptable excipient, e.g. appropriate carrier and/or diluent, e.g. including fillers, binders, disintegrants, flow conditioners, lubricants, sugars or sweeteners, fragrances, preservatives, stabilizers, wetting agents and/or emulsifiers, solubilizers, salts for regulating osmotic pressure and/or buffers.

In another aspect the present invention provides

- a pharmaceutical composition of the present invention for use of treating disorders which are mediated by Kallikrein-7 activity.
- the use of a pharmaceutical composition of the present invention for treating disorders which are mediated by Kallikrein-7 activity.

In a further aspect the present invention provides a method of treating disorders which are mediated by Kallikrein-7 activity, e.g. including disorders as specified above, which treatment comprises administering to a subject in need of such treatment an effective amount of a compound of the present invention; e.g. in the form of a pharmaceutical composition.

In another aspect the present invention provides

- a compound of the present invention for the manufacture of a medicament,
- the use of a compound of the present invention for the manufacture of a medicament, e.g. a pharmaceutical composition, for the treatment of disorders, which are mediated by Kallikrein-7 activity, e.g. for the treatment of skin diseases like e.g. atopic dermatitis, psoriasis, Netherton syndrome or other pruritic dermatoses such as prurigo nodularis, unspecified itch.

Treatment includes treatment and prophylaxis (prevention). Treatment can be by local or systemic application such as e.g. creams, ointments or suppositories or by oral, sc or iv application, respectively.

For such treatment, the appropriate dosage will, of course, vary depending upon, for example, the chemical nature and the pharmacokinetic data of a compound of the present invention used, the individual host, the mode of administration and the nature and severity of the conditions being treated. However, in general, for satisfactory results in larger mammals, for example humans, an indicated daily dosage includes a range

- from about 0.001 g to about 1.5 g, such as 0.001 g to 1.5 g;
- from about 0.01 mg/kg body weight to about 20 mg/kg body weight, such as 0.01 mg/kg body weight to 20 mg/kg body weight,

for example administered in divided doses up to four times a day.

A compound of the present invention may be administered to larger mammals, for example humans, by similar modes of administration than conventionally used with other mediators, e.g. low molecular weight inhibitors, of Kallikrein-7 activity.

A compound of the present invention may be administered by any conventional route, for example enterally, e.g. including nasal, buccal, rectal, oral, administration; parenterally, e.g. including intravenous, intraarterial, intramuscular, intracardiac, subcutaneous, intraosseous infusion, transdermal (diffusion through the intact skin), transmucosal (diffusion through a mucous membrane), inhalational administration; topically; e.g. including epicutaneous, intranasal, intratracheal administration; intraperitoneal (infusion or injection into the peritoneal cavity); epidural (peridural) (injection or infusion into the epidural space); intrathecal (injection or infusion into the cerebrospinal fluid); intravitreal (administration via the eye); e.g. in form of coated or uncoated tablets, capsules, (injectable) solutions, infusion solutions, solid solutions, suspensions, dispersions, solid dispersions; e.g. in the form of

ampoules, vials, in the form of creams, gels, pastes, inhaler powder, foams, tinctures, lip sticks, drops, sprays, or in the form of suppositories. Preferably a compound of the present invention is applied topically.

For topical use, e.g. including administration to the eye, satisfactory results may be obtained with local administration of a 0.5-10 %, such as 1-3% concentration of active substance several times daily, e.g. 2 to 5 times daily.

The compounds of the present invention may be administered in the form of a pharmaceutically acceptable salt, or in free form; optionally in the form of a solvate. A compound of the present invention in the form of a salt and/or in the form of a solvate exhibit the same order of activity as a compound of the present invention in free form.

A compound of the present invention may be used for any method or use as described herein alone or in combination with one or more, at least one, other, second drug substance.

In another aspect the present invention provides

- A combination of a compound of the present invention with at least one second drug substance;
- A pharmaceutical combination comprising a compound of the present invention in combination with with at least one second drug substance;
- A pharmaceutical composition comprising a compound of the present invention in combination with with at least one second drug substance and one or more pharmaceutically acceptable excipient(s).;
- A compound of the present invention in combination with at least one second drug substance, e.g. in the form of a pharmaceutical combination or composition, for use in any method as defined herein, e.g.
 - A combination, a pharmaceutical combination or a pharmaceutical composition, comprising a compound of the present invention and at least one second drug substance for use as a pharmaceutical;
- The use as a pharmaceutical of a compound of the present invention in combination with at least one second drug substance, e.g. in the form of a pharmaceutical combination or composition;
- The use of a compound of the present invention for the manufacture of a medicament for use in combination with a second drug substance

- A method for treating disorders mediated by Kallikrein-7 activity in a subject in need thereof, comprising co-administering, concomitantly or in sequence, a therapeutically effective amount of a compound of the present invention and at least one second drug substance, e.g. in the form of a pharmaceutical combination or composition;
- A compound of the present invention in combination with at least one second drug substance, e.g. in the form of a pharmaceutical combination or composition, for use in the preparation of a medicament for use in disorders mediated by Kallikrein-7 activity.

Combinations include fixed combinations, in which a compound of the present invention and at least one second drug substance are in the same formulation; kits, in which a compound of the present invention and at least one second drug substance in separate formulations are provided in the same package, e.g. with instruction for co-administration; and free combinations in which a compound of the present invention and at least one second drug substance are packaged separately, but instruction for concomitant or sequential administration are given.

In another aspect the present invention provides

- A pharmaceutical package comprising a first drug substance which is a compound of the present invention and at least one second drug substance, beside instructions for combined administration;
- A pharmaceutical package comprising a compound of the present invention beside instructions for combined administration with at least one second drug substance;
- A pharmaceutical package comprising at least one second drug substance beside instructions for combined administration with a compound of the present invention.

Treatment with combinations according to the present invention may provide improvements compared with single treatment.

In another aspect the present invention provides

- A pharmaceutical combination comprising an amount of a compound of the present invention and an amount of a second drug substance, wherein the amounts are appropriate to produce a synergistic therapeutic effect;

- A method for improving the therapeutic utility of a compound of the present invention comprising co-administering, e.g. concomitantly or in sequence, of a therapeutically effective amount of a compound of the present invention and a second drug substance.
- A method for improving the therapeutic utility of a second drug substance comprising co-administering, e.g. concomitantly or in sequence, of a therapeutically effective amount of a compound of the present invention and a second drug substance.

A combination of the present invention and a second drug substance as a combination partner may be administered by any conventional route, for example as set out above for a compound of the present invention. A second drug may be administered in dosages as appropriate, e.g. in dosage ranges which are similar to those used for single treatment, or, e.g. in case of synergy, even below conventional dosage ranges.

Pharmaceutical compositions according to the present invention may be manufactured according, e.g. analogously, to a method as conventional, e.g. by mixing, granulating, coating, dissolving or lyophilizing processes. Unit dosage forms may contain, for example, from about 0.1 mg to about 1500 mg, such as 1 mg to about 1000 mg.

Pharmaceutical compositions comprising a combination of the present invention and pharmaceutical compositions comprising a second drug as described herein, may be provided as appropriate, e.g. according, e.g. analogously, to a method as conventional, or as described herein for a pharmaceutical composition of the present invention.

By the term "second drug substance" is meant an anti-inflammatory, immunomodulatory drug, anticancer drug, anesthetic drug or chemotherapeutic drug. A "second drug substance" can also be a compound having Kallikrein-7 activity, but not being a compound of the present invention.

If the compounds of the present invention are administered in combination with other drugs dosages of the co-administered second drug will of course vary depending on the type of co-drug employed, on the specific drug employed, on the condition being treated, as in case of a compound of the present invention. In general dosages similar than those as provided by the second drug supplier may be appropriate

In the following Examples all temperatures indicated are in degree Celsius (°).

The following abbreviations are also used:

aq.	aqueous
Ac ₂ O	acetic anhydride
AcOH	acetic acid
CH ₂ Cl ₂	dichloromethane
DCE	1,2-dichloroethane
DIPEA	<i>N,N</i> -diisopropylethylamine
DMA	<i>N,N</i> -dimethylacetamide
EtOAc	ethylacetate
HATU	O-(7-azabenzotriazol-1-yl)- <i>N,N,N',N'</i> -tetramethyluronium hexafluorophosphate
NMP	<i>N</i> -methylpyrrolidinone
rt	room temperature
TFA	trifluoroacetic acid
THF	tetrahydrofuran
TLC	thin layer chromatography
TMOF	trimethylorthoformate

A kallikrein 7 inhibitor can also be a "peptide" or a "peptide derivative", which terms are intended to embrace a "peptidomimetic" or "peptide analogue" which complement the three-dimensional structure of the binding pocket of kallikrein 7 or can be designed with improved physical or chemical properties to bind with the three-dimensional binding pocket of the kallikrein 7 as provided in the present invention.

The term "mutant" refers to a mutated sequence by deletion, insertion or preferably replacement of one or more selected amino acids, provided that such mutant sequence shares at least 90% identity, more preferably 95%, and even more preferably 99% identity with the corresponding fragment sequence when performing optimal alignment.

Methods for the preparation of protein mutants are commonly known in the art. For example, kallikrein 7 mutants may be prepared by expression of kallikrein 7 DNA previously modified in its coding region by oligonucleotide directed mutagenesis.

As used herein, the term "binding pocket" refers to the region of kallikrein 7 that, as a result of its shape and physico-chemical properties favorably associates with another chemical entity or compound and is defined in by the coordinates of Table 3.

The kallikrein 7 protein to be used for crystallization may be biologically active or inactive. Such ability may be determined by morphological, biochemical or viability analysis well-known in the art.

Expression of recombinant kallikrein 7 or fragment thereof is achievable in eukaryotic or prokaryotic systems or *in vitro* expression systems.

According to a preferred embodiment, kallikrein 7 is bound to at least one ligand at any step prior to crystallization.

Kallikrein 7 may be expressed as a fusion protein, e.g. a glutathione-S-transferase (GST) or histidine-tagged fusion protein. If desired, the fusion partner is removed before crystallization.

For carrying out the step of crystallization of the method for making a crystal, various methods can be used including vapour diffusion, dialysis or batch crystallization according to methods known in the art ("Crystallization of Biological Macromolecules", A. McPherson, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York, USA).

In vapour diffusion crystallization, a small volume (i.e., a few microliters) of protein solution is mixed with a solution containing a precipitant. This mixed volume is suspended over a well containing a small amount, i.e. about 1 ml, of precipitant. Vapour diffusion from the drop to the well will result in crystal formation in the drop.

The dialysis method of crystallization utilizes a semipermeable size-exclusion membrane that retains the protein but allows small molecules (i.e. buffers and precipitants) to diffuse in and out. In dialysis, rather than concentrating the protein and the precipitant by evaporation, the precipitant is allowed to slowly diffuse through the membrane and reduce the solubility of the protein while keeping the protein concentration fixed.

The batch method generally involves the slow addition of a precipitant to an aqueous solution of protein until the solution just becomes turbid, at this point the container can be sealed and left undisturbed for a period of time until crystallization occurs. In the batch technique the precipitant and the target molecule solution are simply mixed. Supersaturation is achieved directly rather than by diffusion. Often the batch technique is performed under oil. The oil prevents evaporation and extremely small drops can be used. For this, the term "microbatch" is used. A modification of this technique is not to use paraffin oil (which prevents evaporation completely) but rather use silicone oil or a mixture of silicone and paraffin oils so that a slow evaporation is possible.

The claimed invention can encompass any and all methods of crystallization. One skilled in the art can choose any of such methods and vary the parameters such that the chosen method results in the desired crystals.

One preferred method of crystallization of kallikrein 7 involves mixing a kallikrein 7 solution with a "reservoir buffer". For crystal formation, the concentration of the precipitating agent in the mixture has to be increased, e.g. by addition of precipitating agent, for example by titration, or by allowing the concentration of precipitating agent to balance by diffusion between the crystallization buffer and a reservoir buffer (not necessarily the same as the original reservoir buffer). Under suitable conditions such diffusion of precipitating agent occurs along the gradient of precipitating agent, e.g. from the reservoir buffer having a higher concentration of precipitating agent into the crystallization buffer having a lower concentration of precipitating agent. Diffusion may be achieved e.g. by vapour diffusion techniques allowing diffusion of water in the common gas phase. Known techniques are e.g. vapour diffusion methods, such as the "hanging drop" or the "sitting drop" method. In the vapour diffusion method a drop of crystallization buffer containing the protein is hanging above or sitting beside a much larger pool of reservoir buffer. Alternatively, the balancing of the precipitating agent can be achieved through a semipermeable membrane that separates the crystallization buffer from the reservoir buffer and prevents dilution of the protein into the reservoir buffer.

Formation of kallikrein 7 can be achieved under various conditions which are essentially determined by the following parameters: pH, presence of salts and additives, precipitating

agent, protein concentration and temperature. The pH may range, for example, from about 4.0 to 9.0.

In another specific embodiment, the invention relates to a method for making a co-crystal of kallikrein 7 in complex with a ligand.

The crystal form of kallikrein 7 crystal may also be used for exchanging the ligand by soaking compounds of interest, for example, for compound optimization, or for the discovery of novel scaffolds in fragment based screening approaches.

Structure coordinates of a crystalline composition of this invention may be stored in a machine-readable form on a machine-readable storage medium, e.g. a computer hard drive, diskette, DAT tape, etc., for display as a three-dimensional shape or for other uses involving computer-assisted manipulation of, or computation based on, the structural coordinates or the three-dimensional structures they define. For example, data defining the three dimensional structure of a protein of the kallikrein family, or portions or structurally similar homologues of such proteins, may be stored in a machine-readable storage medium, and may be displayed as a graphical three-dimensional representation of the protein structure, typically using a computer capable of reading the data from said storage medium and programmed with instructions for creating the representation from such data.

According to the present invention, a three-dimensional kallikrein 7 model is obtainable from a kallikrein 7 crystal comprising the kallikrein 7, fragment or homologue thereof.

The present invention also relates to a computer readable medium having stored a model of the kallikrein 7 crystal structure. In a preferred embodiment, said model is built from all or a selected portion of it, of the atomic coordinates of Table 3 derived from the X-ray diffraction data.

By "selected portion", it is meant the structure coordinates of at least 10 consecutive amino acids shown in Table 3 and preferably at least 50 amino acids, and more preferably at least 100 consecutive amino acids.

The knowledge obtained from the three-dimensional model of kallikrein 7 can be used in various ways. For example, it can be used to identify chemical entities, for example, small organic and bioorganic molecules such as peptidomimetics and synthetic organic molecules that bind to kallikrein 7 and preferably block or prevent a kallikrein 7-mediated or associated process or event, or that act as kallikrein 7 agonists. Furthermore, this information can be used to design and prepare kallikrein 7 mutants, e.g. mutants with altered catalytic activity, model the three-dimensional structure and solve the crystal structure of proteins, such as kallikrein 7 homologues, kallikrein 7 mutants or kallikrein 7 co-complexes, involving e.g. molecular replacement or homology modeling.

The term "molecular replacement" refers to a method that involves generating a preliminary structural model of a crystal whose structural coordinates are unknown, by orienting and positioning a molecule whose structural coordinates are known, e.g., the kallikrein 7 coordinates within the unit cell of the unknown crystal, so as to best account for the observed diffraction pattern of the unknown crystal. Phases can then be calculated from this model, and combined with the observed amplitudes to give an approximated Fourier synthesis of the structure whose coordinates are unknown. This in turn can be subject to any of the several forms of refinement to provide a final accurate structure of the unknown crystal. Using the structural coordinates provided by this invention, molecular replacement may be used to determine the structural coordinates of a crystalline co complex, unknown ligand, mutant, or homolog, or of a different crystalline form of kallikrein 7. Additionally, the claimed crystal and its coordinates may be used to determine the structural coordinates of a chemical entity that associates with kallikrein 7.

"Homology modeling" according to the invention involves constructing a model of an unknown structure using structural coordinates of one or more related proteins, protein domains and/or one subdomains such as kallikrein 7. Homology modeling may be conducted by fitting common or homologous portions of the protein or peptide whose three dimensional structure is to be solved to the three dimensional structure of homologous structural elements. Homology modeling can include rebuilding part or all of a three dimensional structure with replace of amino acids or other components by those of the related structure to be solved.

Based on the three-dimensional structure of kallikrein 7 as provided in the present invention and using the atomic coordinates of Table 3, or a selected portion of it, the effects of site-specific mutations can be predicted. More specifically, the structural information provided herein permits the identification of desirable sites for amino acid modification, particularly amino acid mutation resulting in substitutional, insertional or deletional variants. Such variants may be designed to have special properties, particularly properties distinct from wild-type kallikrein 7, such as altered catalytic activity. Substitutions, deletions and insertions may be combined to arrive at a desired variant. Such variants can be prepared by methods well-known in the art, e.g. starting from wild-type kallikrein 7 or by de novo synthesis.

The kallikrein 7 structural information provided herein is useful for the design of ligands which are capable of selectively interacting with kallikrein 7, but not other proteases other than Kallikrein 7, and thereby specifically modulating the biological activity of kallikrein 7 and not other kallikrein 7 proteases.

Chemical entities that have a surface that mimics the accessible surface of the binding pocket of kallikrein 7 can be constructed by those skilled in the art. By way of example, the skilled artisan can screen three-dimensional structural databases of compounds to identify those compounds that position appropriate functional groups in similar three dimensional structural arrangement, then build combinatorial chemistry libraries around such chemical entities to identify those with high affinity to the binding pocket of kallikrein 7.

In a specific embodiment of the invention, a cell-based assay is designed to identify ligands which inhibit the biological activity of kallikrein 7.

Ligands, such as small molecular weight compounds can be identified from screening compound databases or libraries and using a computational means to form a fitting operation to a binding site on the kallikrein 7. The three dimensional structure of kallikrein 7 as provided in the present invention by the structure coordinates of Table 3 or a selected portion of it, can be used together with various docking programs.

The potential inhibitory or binding effect of a chemical entity on kallikrein 7 may be analyzed prior to its actual synthesis and testing by the use of computer-modeling techniques. If the theoretical structure of the given chemical entity suggests insufficient interaction and

association between it and Kallikrein 7, the need for synthesis and testing of the chemical entity is obviated. However, if computer modeling indicates a strong interaction, the molecule may then be synthesized and tested for its ability to bind to kallikrein 7. Thus, expensive and time-consuming synthesis of inoperative compounds may be avoided.

This "*in silico*" analysis may begin by visual inspection of, for example, the binding pocket on a computer screen based on the structural coordinates of Table 3 in whole or in part. Selected fragments or chemical entities may then be positioned in a variety of orientations, or "docked," within the binding pocket of kallikrein 7. Docking may be accomplished using software such as Quanta and SYBYL, followed by energy minimization and molecular dynamics with standard molecular mechanics force fields, such as CHARMM and AMBER. Specialized computer programs may be of use for selecting interesting fragments or chemical entities. These programs include, for example, GRID, available from Oxford University, Oxford, UK; 5 MCSS or CATALYST, available from Molecular Simulations, Burlington, MA; AUTODOCK, available from Scripps Research Institute, La Jolla, CA; DOCK, available from University of California, San Francisco, CA, and XSITE, available from University College of London, UK.

Preferred is a method for designing a kallikrein 7 inhibitor which interacts at the substrate binding site of kallikrein 7 or any other binding sites. One approach enabled by this invention is the use of the structure coordinates of kallikrein 7 to design chemical entities that bind to or associate with Kallikrein 7 and alter the physical properties of the chemical entities in different ways. Thus, properties such as, for example, solubility, affinity, specificity, potency, on/off rates, or other binding characteristics may all be altered and/or maximized. One may design desired chemical entities by probing a kallikrein 7 comprising the binding pocket of the invention with a library of different entities to determine optimal sites for interaction between candidate chemical entities and kallikrein 7. For example, high-resolution X-ray diffraction data collected from crystals saturated with solvent allows the determination of where each type of solvent molecule adheres. Small molecules that bind tightly to those sites can then be designed and synthesized and tested for the desired activity. Once the desired activity is obtained, the molecules can be further altered to maximize desirable properties.

Once a compound has been designed or selected by the above methods, the efficiency with which that compound may bind to kallikrein 7 may be tested and modified for the maximum

desired characteristic(s) using computational or experimental evaluation. Various parameters can be maximized depending on the desired result. These include, but are not limited to, specificity, affinity, on/off rates, hydrophobicity, solubility, and other characteristics readily identifiable by the skilled artisan.

In a preferred embodiment, the structure coordinates of Table 3 of kallikrein 7 is used in the above computer-based design step.

The invention further relates to a method for selecting a ligand that binds to kallikrein 7, comprising:

- a. co-crystallizing or incubating a candidate compound or mix of compounds with kallikrein 7 under appropriate conditions,
- b. determining by X-ray or NMR methods the amino acids of kallikrein 7 which interacts with the candidate compound,
- c. selecting the compound which interacts at least with one or more amino acids of the binding pocket.

For carrying out step b., mapping of the binding site of ligand is usually performed by recording NMR spectra with and without the candidate compound, and identifying those resonances of the protein that are affected by ligand binding. This requires assignment of the protein resonance prior to the analysis, or comparison with the pattern of chemical shift changes that occur upon binding of ligands with known binding sites. Alternatively, competition experiments using said ligands with known binding sites can yield equivalent information.

The present invention further provides methods to design novel ligands of kallikrein 7, using fragment linking approaches. Compounds binding to different binding regions of Kallikrein 7 are first selected. The ligands are linked together based on the spatial orientation, so that the designed novel compounds fits within the two binding sites.

The invention thus relates to a method to design ligands to kallikrein 7, wherein said method comprises:

- a. providing a first ligand that binds to one or more amino acids of a first binding region of kallikrein 7,

- b. providing a second ligand that binds to one or more amino acids of a second binding region of Kallikrein 7, and,
- c. linking said first ligand to said second ligand to design a ligand that binds to the first and second binding pockets of kallikrein 7.

The selection of an appropriate linking group is made by maintaining the spatial orientation of the ligands to one another and to kallikrein 7 based upon principles of bond angle and bond length information well known in the organic chemical art.

In addition, antagonists of kallikrein 7 can be used to treat patients, or for the manufacture of a medicament to treat, for inflammatory and/or hyperproliferative and pruritic skin diseases such as keloids, hypertrophic scars, acne, atopic dermatitis, psoriasis, pustular psoriasis, rosacea, Netherton's syndrome or other pruritic dermatoses such as prurigo nodularis, unspecified itch of the elderly as well as other diseases with epithelial barrier dysfunction such as aged skin, inflammatory bowel disease and Crohn's disease, as well as pancreatitis, or of cancer, in particular ovarian cancer.

The following examples serve to illustrate the present invention but should not be construed as a limitation thereof. The invention particularly relates to the specific embodiments described in these examples.

Examples

Cloning

To prevent autocleavage of hK7, the autocleavage site at position Tyr180 (numbering according to Swiss-Prot entry P49862) has been mutated to Arg by site-directed mutagenesis according to the standard protocol using pET24_His-Pro-EK-KLK7(aa37-253) as template (QuickChange site-directed mutagenesis kit; Stratagene; mutagenesis primer: 5' GACTGCACGAAGGTTTCGCAAGGACTTACTGGAAAATTCCATGC). Cloning of vector pET24_His-Pro-EK-KLK7(aa37-253) has been in a manner usual in the art. The final vector was named pET24c-His-ProKLK7-Enterok-KLK7(aa37-253)_Y180R.

Expression and purification

E. coli strain BL21(DE3) harboring the expression plasmid for pro-hK7 was cultivated at 37 °C in LB medium containing 34 µg/ml chloramphenicol and 30 µg/ml kanamycin. Induction was started with 0.4 mM IPTG at an OD₆₀₀ of 1.0 for 4 hours at 37 °C. Subsequently, the cells were harvested by centrifugation. All purification steps were done at 4 °C, unless stated otherwise. Cells from 10 liter *E. coli* cell culture (25 g cell pellet) were resuspended in 200 ml 50 mM Tris/HCl buffer, pH 8.0 containing 1 mM MgCl₂ and stored at -20°C overnight. After thawing, 1 µl Benzonase (ROCHE) was added and the sample was incubated for 10 min at 37°C. The cells were ruptured by sonication (4 times 20 seconds at 70 % amplitude; Branson Digital Sonifier W-450D) and the homogenate was centrifuged at 7000 g for 15 min. The inclusion body-containing pellet was washed three times with 50 mM Tris pH 8.0 buffer containing 25% sucrose, 1% Triton 100 and 1 µl Benzonase and finally two times with H₂O containing 1 mM MgCl₂. The inclusion bodies were further purified by HPLC using a reverse phase column. For this, the inclusion bodies were dissolved in 6 M GuHCl (10 mg/ml) and 100 mM DTT and applied to a GE Source RPC column (Fine line 35S) equilibrated with 0.1 % TFA and 10 % acetonitrile. The protein was eluted by an increasing acetonitrile concentration from 10-100 %. Fractions containing the protease were pooled and lyophilized. The dried protein was diluted to a final concentration of 50 µg/ml in 50 mM Tris/HCl pH 8.0 buffer (10 °C cold) containing 2 M urea, 500 mM NaCl, 10 mM CaCl₂, 0.1 M NH₄Cl, 1 mM EDTA, 1.25 mM GSH and 0.5 mM GSSG. Subsequently, the sample was dialyzed against 10 mM Tris pH 8.0 buffer and loaded on a Q-sepharose column (50 ml). The protein was eluted by an increasing salt concentration from 0-0.5 M NaCl and fractions containing pro-hK7 were pooled and concentrated to approx. 5 ml. Subsequently, the sample was activated by the addition of enterokinase (1:100) for 24 h at 8 °C. Finally, hK7 was applied to a size exclusion chromatography column (Superdex 75, HiLoad 26/60, Amersham) equilibrated with 50 mM Tris, 100 mM NaCl, pH 8 at a flow rate of 2.5 ml/min. For crystallization trials the protein buffer was exchanged by dialysis against 50 mM sodium acetate at pH 5.6 and 100 mM sodium chloride and the protein was stored at 4 °C.

Crystallization

hK7 was concentrated to 24.6 mg/ml and crystallized at 20 °C by the vapor diffusion method in hanging drops. 0.5 µl protein solution containing 50 mM sodium acetate at pH 5.6, 100 mM sodium chloride, 2 mM inhibitor and 1.8 % (v/v) DMSO was mixed with 0.5 µl reservoir solution composed of 35 % (w/v) PEG 3350, 200 mM calcium chloride and 100 mM sodium

acetate at pH 4.8. The drops were equilibrated against 1 ml of the reservoir solution. Diffracting quality crystals appeared within 1-3 days.

Data collection

For X-ray data collection a crystal was flash frozen in liquid nitrogen without additional cryo-protectant. The X-ray diffraction data were collected from a single crystal for the hK7-inhibitor complex at 95 K at the beamline X10SA of the Swiss Light Source with a MAR225 mosaic CCD detector at a wavelength of 0.9799 Å. For the crystals of hK7 in complex with inhibitors, 299 or 300 images were collected, with 0.5° oscillation each. The exposure time was between 0.5 s and 1 s per image. The crystal-to-detector distance was between 100 mm and 120 mm. The raw diffraction data were processed and scaled with the HKL program suite version 1.98.0 (21) or with XDS/XSCALE (22) using the APRV (23) interface. The crystal data and data collection statistics are summarized in Table 1.

- 37 -

Modulator	Compound 1
X-ray source	SLS / X10SA
date of data collection	23.03.2006
Wavelength (Å)	0.979908
Detector	MARCCD 225
Temperature (K)	100
Number of crystals	1
Space group	P2 ₁ 2 ₁ 2 ₁
Unit cell dimensions: a,b,c (Å)	42.61, 60.34, 80.63
Number of monomers / a.u.	1
Packing coefficient (Å ³ /Da)	2.1
Solvent content (%)	41.5
Resolution range (Å)	33.5 – 1.1
Number of observations	312326
Number of unique reflections	81660
Overall	
Data redundancy	3.8
Data completeness (%)	96.0%
< I/σ (I) >	34.7
Rmerge	0.087
Highest resolution shell	
Resolution range	1.14 - 1.10Å
Completeness for shell	73.9%
< I/σ (I) >	2.2
Rmerge for shell	0.334

Table 1: Data collection statistics

$$R_{\text{merge}} = \sum |I_o - \langle I \rangle| / \sum \langle I \rangle$$

Structure determination and structure refinement

The hK7 structure in complex with compound 1 was solved by molecular replacement with the program MOLREP version 9.2.10 (24), using the coordinates of human kallikrein 1 (pdb code 1SPJ, refined to 1.7 Å resolution (25)) as a search model. With a high resolution data cut-off of 4.0 Å an unambiguous solution was found in space group $P2_12_12_1$ with one protein-modulator complex in the asymmetric unit (correlation coefficient of 0.34, R-factor of 0.48). An initial refinement cycle was applied using the *rigid-body*, *simulated-annealing* and *bindividual* refinement protocols of the program CNX version 2005 (26) and a high resolution data cut-off of 1.5 Å. The hK7 structure was build and refined by alternating cycles of manual model (re)building using the program O version 9 (27) and automated refinement using the *minimize* and *bindividual* protocols of the program CNX version 2005. Subsequently, the resolution was extended to 1.2 Å, 209 water molecules were added using the *water-pick* protocol of the program CNX version 2005 and finally the modulator was added. Anisotropic displacement parameters were included for the final refinement cycles at 1.2 Å resolution using the *adp* protocol of CNX 2005. The refinement target was the maximum likelihood function with the parameters described by Engh and Huber (28) using amplitudes. Cross validation was used throughout the refinement process, using 9.8 % of the reflections which were excluded from the refinement. The quality of the final model was assessed with the programs CNX 2005 and PROCHECK (29). The refinement statistics are summarized in Table 2.

Table 2: Refinement statistics

Inhibitor	Compound 1
Data used in refinement	
resolution range	33.5 – 1.2 Å
intensity cutoff (Sigma(F))	0.0
number of reflections (working/test set)	58820 / 6415
completeness (working + test set)	89.5 %
test set	9.8 %
Fit to data used in refinement	
overall Rcryst	0.181
overall Rfree	0.197
Fit in the highest resolution bin	
resolution range	1.28 - 1.20 Å
bin completeness (working + test set)	99.5 %
bin Rcryst	0.182
bin Rfree	0.195
Number of non-hydrogen atoms	
protein atoms	1785
inhibitor atoms	32
waters	209
Overall B value from Wilson plot	12.5 Å ²
Overall mean B value	16.4 Å ²
protein atoms	17.5 Å ²
inhibitor atoms	14.8 Å ²
water molecules	27.9 Å ²
Cross-validated estimated coordinate error	
from Luzzati plot	0.13 Å
from σ_A	0.01 Å
Rms deviations from ideal values	
bond lengths	0.018 Å
bond angles	1.7°
dihedral angles	21.5°
improper angles	1.3°
Ramachandran plot	
residues in most favorable regions	90.6 %
residues in additional allowed regions	9.4 %

$$R_{\text{cryst}} = \Sigma |F_o - F_c| / \Sigma F_o$$

219 of the 224 amino acids could be traced in the high quality electron density map. Amino acids ¹⁶⁶RKDLL¹⁷⁰ (amino acid numbering according to the chymotrypsinogen numbering scheme (30) is used throughout the document unless stated otherwise) lack electron density and were not included into the final structures. The arginine residue of this disordered loop is mutated in the construct used for crystallization (according to Swiss-Prot numbering entry P49862 this residue is Tyr180). The wild type tyrosine residue was prone to autocatalytic cleavage, which is not the case for the arginine mutant as was demonstrated by MS analysis.

As expected, six disulfide bonds were found between residues Cys22-Cys157, Cys42-Cys58, Cys129-Cys232, Cys136-Cys201, Cys168-Cys182 and Cys191-Cys220 and cis-peptide bonds were build for amino acids Pro147 and Pro219. Due to the high resolution of the structure the side chains of amino acids 30, 38, 39, 49, 50, 84, 90, 110, 138, 153, 161, 164, 187, 192 and 200 were build in two conformations

Structure of hK7

The structure of hK7 resembles the overall architecture of hK1, hK6 and hK8 (25, 31, 32) and follows the classical chymotrypsin like fold, composed of two β -barrels and a C-terminal α -helix. The active site, including the catalytic triad composed of His57, Asp102 and Ser195 is located at the interface of the two β -barrels.

Similar to hK5 and hK6 and in contrast to hK1, hK7 lacks the so called kallikrein loop. The kallikrein loop is an insertion of up to 11 amino acid residues between Thr96 and Gln97 characteristic for some of the kallikreins, especially the classical ones. It protrudes over the non-primed binding site like a lid. hK7 has no amino acid insertion in this region and is indistinguishable in length compared to trypsin or chymotrypsin.

Despite the overall structural similarity to other kallikreins, the S1 pocket of hK7 differs from the trypsin-like specificity of e.g. hK1, hK5, hK6 and hK8 in that the polar Asn189 replaces the negatively charged Asp at the bottom of the pocket and the hydrophobic Ala190 substitutes the polar Ser/Thr residues. These specific structural features of the S1 pocket are well in agreement with the observed chymotrypsin-like specificity of hK7 with a

preference for medium to large sized S1 residues with a polar tip. hK7 has a preferred specificity for Tyr over Ala, Met and Phe in P1 (1, 33).

A disordered loop is located at the far end of the S3/S4 substrate binding pocket. In other S1 serine proteases complexed with inhibitors binding from S1 to S3, the homologous loop is ordered and folds back forming part of the S3/S4 binding pocket, thereby contributing to inhibitor binding. Therefore, it might be possible that this part of the kallikrein 7 structure gets ordered upon binding of inhibitors that occupy the S3/S4 pockets. In addition, due to the autocleavage after the tyrosine residue of this loop during purification, this tyrosine has been replaced by an arginine residue, which might also influence the conformation of this loop.

Our modulators bind to the active site of kallikrein 7 adopting an unexpected binding mode spanning from S1 towards the primed binding site.

For compound 1 the naphthyl and methoxyphenyl moieties bind to the S1 and S2' pockets, respectively. The central pyrrolidine ring binds to the S1' pocket and induces a conformational change of the His57 side chain, thereby disturbing the catalytic triad composed of His57, Asp102 and Ser195. Upon inhibitor binding, the His57 side chain swings towards the S2 pocket (rotation around chi1 by 120° and around chi2 by 90° compared to the structure of hK6 pdb code 1L2E) and forms together with the disulfide bond between Cys42 and Cys58 a hydrophobic pocket occupied by the pyrrolidine ring of the inhibitor. The carbonyl oxygen atom of the inhibitor's urea moiety occupies the oxyanion hole and is in H-bonding distance to the backbone nitrogen atoms of Gly193 and Ser195. One urea nitrogen atom makes water mediated interactions to the side chain of His57 and the backbone carbonyl group of Ser214. The inhibitor amide nitrogen atom interacts with the backbone carbonyl oxygen atom of His41. The methoxyphenyl moiety is in Van-der-Waals distance to Val149 and Phe151 with the phenyl ring making an edge-to-face interaction to the side chain of Phe151.

Within the crystal environment a symmetry related hK7 molecule packs in close proximity to the active site of hK7. As previously mentioned, the modulator binding induces a movement of the catalytic His57 side chain. One nitrogen atom of this displaced His57 side chain is in H-bonding distance to the backbone carbonyl group of Phe151 of the symmetry related molecule. In addition, the primed site moieties of the modulators are in contact with the side chains of Pro21 and Asp154 of the same symmetry related molecule. Therefore, an influence on the binding modes of the modulators by the crystal contacts cannot be totally

excluded. However, the crystal contact does not prevent binding of different prime site scaffolds in different prime site pockets.

Table 3: Three-dimensional structure of the new binding pocket of kallikrein 7

CRYST1	42.611	60.343	80.633	90.00	90.00	90.00	P 21 21 21	4					
ORIGX1	1.000000	0.000000	0.000000			0.000000							
ORIGX2	0.000000	1.000000	0.000000			0.000000							
ORIGX3	0.000000	0.000000	1.000000			0.000000							
SCALE1	0.023468	0.000000	0.000000			0.000000							
SCALE2	0.000000	0.016572	0.000000			0.000000							
SCALE3	0.000000	0.000000	0.012402			0.000000							
ATOM	1	CB	ILE	A	16	5.077	12.746	32.116	1.00	10.74		A	C
ANISOU	1	CB	ILE	A	16	1357	1177	1385	9	1	0	A	C
SIGUIJ	1	CB	ILE	A	16	22	18	18	999999	999999	999999	A	C
ATOM	2	CG2	ILE	A	16	4.414	12.703	30.717	1.00	11.43		A	C
ANISOU	2	CG2	ILE	A	16	1373	1474	1390	7	-2	0	A	C
SIGUIJ	2	CG2	ILE	A	16	22	13	13	999999	852	999999	A	C
ATOM	3	CG1	ILE	A	16	5.646	11.351	32.538	1.00	10.15		A	C
ANISOU	3	CG1	ILE	A	16	1298	1167	1395	-13	-4	0	A	C
SIGUIJ	3	CG1	ILE	A	16	15	11	11	999999	999999	999999	A	C
ATOM	4	CD1	ILE	A	16	6.590	10.689	31.560	1.00	10.76		A	C
ANISOU	4	CD1	ILE	A	16	1346	1238	1417	29	5	-1	A	C
SIGUIJ	4	CD1	ILE	A	16	15	22	10	999999	999999	999999	A	C
ATOM	5	C	ILE	A	16	5.552	15.206	31.787	1.00	10.91		A	C
ANISOU	5	C	ILE	A	16	1183	1092	1440	4	-108	-3	A	C
SIGUIJ	5	C	ILE	A	16	12	15	9	999999	999999	999999	A	C
ATOM	6	O	ILE	A	16	4.774	15.767	32.532	1.00	10.79		A	O
ANISOU	6	O	ILE	A	16	1286	1171	1507	63	-57	-6	A	O
SIGUIJ	6	O	ILE	A	16	1	0	0	221	57	289	A	O
ATOM	7	N	ILE	A	16	6.698	13.966	33.589	1.00	9.90		A	N
ANISOU	7	N	ILE	A	16	1283	1064	1282	59	0	1	A	N
SIGUIJ	7	N	ILE	A	16	1	0	0	221	66	290	A	N
ATOM	8	CA	ILE	A	16	6.169	13.847	32.184	1.00	10.55		A	C
ANISOU	8	CA	ILE	A	16	1283	1114	1281	81	0	-1	A	C
SIGUIJ	8	CA	ILE	A	16	14	13	21	0	265989	999999	A	C
ATOM	9	N	ILE	A	17	5.926	15.671	30.585	1.00	11.18		A	N
ANISOU	9	N	ILE	A	17	1446	1153	1477	56	2	-2	A	N
SIGUIJ	9	N	ILE	A	17	1	0	0	221	66	290	A	N
ATOM	10	CA	ILE	A	17	5.417	16.952	30.064	1.00	12.10		A	C
ANISOU	10	CA	ILE	A	17	1450	1172	1618	57	-64	8	A	C
SIGUIJ	10	CA	ILE	A	17	8	9	12	156	1511	999999	A	C
ATOM	11	CB	ILE	A	17	6.529	17.735	29.350	1.00	12.26		A	C
ANISOU	11	CB	ILE	A	17	1537	1234	1787	48	55	9	A	C
SIGUIJ	11	CB	ILE	A	17	8	8	10	180	6	999999	A	C
ATOM	12	CG2	ILE	A	17	5.941	19.119	28.872	1.00	12.53		A	C
ANISOU	12	CG2	ILE	A	17	1893	1304	1900	189	2	15	A	C
SIGUIJ	12	CG2	ILE	A	17	8	8	8	191	617	999999	A	C
ATOM	13	CG1	ILE	A	17	7.750	17.957	30.263	1.00	12.96		A	C

ANISOU	13	CG1	ILE	A	17	1634	1643	1921	0	-58	-1	A	C
SIGUIJ	13	CG1	ILE	A	17	8	7	7	197	676	999999	A	C
ATOM	14	CD1	ILE	A	17	7.426	18.712	31.538	1.00	13.60		A	C
ANISOU	14	CD1	ILE	A	17	1963	1656	1929	44	2	1	A	C
SIGUIJ	14	CD1	ILE	A	17	8	7	6	201	676	999999	A	C
ATOM	15	C	ILE	A	17	4.313	16.687	29.037	1.00	12.56		A	C
ANISOU	15	C	ILE	A	17	1402	1257	1586	32	-21	0	A	C
SIGUIJ	15	C	ILE	A	17	8	7	5	204	659	988023	A	C
ATOM	16	O	ILE	A	17	4.516	15.889	28.122	1.00	12.36		A	O
ANISOU	16	O	ILE	A	17	1497	1275	1591	49	-5	1	A	O
SIGUIJ	16	O	ILE	A	17	1	0	0	221	57	289	A	O
ATOM	17	N	ASP	A	18	3.150	17.343	29.232	1.00	13.27		A	N
ANISOU	17	N	ASP	A	18	1416	1360	1685	89	-34	-3	A	N
SIGUIJ	17	N	ASP	A	18	1	0	0	221	66	290	A	N
ATOM	18	CA	ASP	A	18	2.007	17.349	28.291	1.00	14.05		A	C
ANISOU	18	CA	ASP	A	18	1544	1613	1897	46	-212	60	A	C
SIGUIJ	18	CA	ASP	A	18	7	7	4	206	638	855653	A	C
ATOM	19	CB	ASP	A	18	2.386	17.918	26.913	1.00	15.58		A	C
ANISOU	19	CB	ASP	A	18	2263	1479	1926	68	-18	-3	A	C
SIGUIJ	19	CB	ASP	A	18	7	7	4	208	617	754615	A	C
ATOM	20	CG	ASP	A	18	1.151	18.251	26.055	1.00	16.60		A	C
ANISOU	20	CG	ASP	A	18	2333	1838	1991	172	-63	-25	A	C
SIGUIJ	20	CG	ASP	A	18	7	7	3	209	596	674948	A	C
ATOM	21	OD1	ASP	A	18	0.112	18.577	26.628	1.00	18.23		A	O
ANISOU	21	OD1	ASP	A	18	2635	4119	2133	945	30	51	A	O
SIGUIJ	21	OD1	ASP	A	18	1	0	0	221	57	289	A	O
ATOM	22	OD2	ASP	A	18	1.233	18.185	24.829	1.00	17.67		A	O
ANISOU	22	OD2	ASP	A	18	2389	3156	1991	483	-53	-40	A	O
SIGUIJ	22	OD2	ASP	A	18	1	0	0	221	57	289	A	O
ATOM	23	C	ASP	A	18	1.403	15.964	28.130	1.00	14.19		A	C
ANISOU	23	C	ASP	A	18	1588	1641	1795	-3	-25	-1	A	C
SIGUIJ	23	C	ASP	A	18	7	7	3	210	576	610513	A	C
ATOM	24	O	ASP	A	18	0.895	15.606	27.045	1.00	14.18		A	O
ANISOU	24	O	ASP	A	18	1730	1957	1807	-162	-32	-33	A	O
SIGUIJ	24	O	ASP	A	18	1	0	0	221	57	289	A	O
ATOM	25	N	GLY	A	19	1.416	15.209	29.232	1.00	14.20		A	N
ANISOU	25	N	GLY	A	19	1512	1612	1803	-41	-23	-6	A	N
SIGUIJ	25	N	GLY	A	19	1	0	0	221	66	290	A	N
ATOM	26	CA	GLY	A	19	0.676	13.954	29.260	1.00	14.43		A	C
ANISOU	26	CA	GLY	A	19	1470	1590	2177	-13	-3	0	A	C
SIGUIJ	26	CA	GLY	A	19	7	7	2	16	2131	13262	A	C
ATOM	27	C	GLY	A	19	-0.615	14.053	30.048	1.00	14.46		A	C
ANISOU	27	C	GLY	A	19	1325	1580	1798	-38	-240	-26	A	C
SIGUIJ	27	C	GLY	A	19	7	8	2	156	1509	13262	A	C
ATOM	28	O	GLY	A	19	-1.228	15.140	30.140	1.00	15.36		A	O
ANISOU	28	O	GLY	A	19	1457	1603	3368	13	40	-1	A	O
SIGUIJ	28	O	GLY	A	19	1	0	0	221	57	289	A	O
ATOM	29	N	ALA	A	20	-1.039	12.931	30.604	1.00	14.61		A	N
ANISOU	29	N	ALA	A	20	1411	1582	1989	6	-73	2	A	N
SIGUIJ	29	N	ALA	A	20	1	0	0	221	66	290	A	N
ATOM	30	CA	ALA	A	20	-2.330	12.843	31.298	1.00	14.42		A	C

- 44 -

ANISOU	30	CA	ALA	A	20	1426	1559	2026	28	-54	5	A	C
SIGUIJ	30	CA	ALA	A	20	7	8	2	180	1232	13262	A	C
ATOM	31	CB	ALA	A	20	-3.444	12.549	30.291	1.00	15.24		A	C
ANISOU	31	CB	ALA	A	20	1603	2578	2199	-195	-182	-43	A	C
SIGUIJ	31	CB	ALA	A	20	7	9	1	191	1068	13262	A	C
ATOM	32	C	ALA	A	20	-2.215	11.693	32.256	1.00	14.43		A	C
ANISOU	32	C	ALA	A	20	1227	1549	1982	77	13	-2	A	C
SIGUIJ	32	C	ALA	A	20	6	9	1	197	955	13262	A	C
ATOM	33	O	ALA	A	20	-1.402	10.791	32.055	1.00	13.98		A	O
ANISOU	33	O	ALA	A	20	1331	1642	1760	183	-31	14	A	O
SIGUIJ	33	O	ALA	A	20	1	0	0	221	57	289	A	O
ATOM	34	N	PRO	A	21	-3.043	11.661	33.301	1.00	14.48		A	N
ANISOU	34	N	PRO	A	21	1288	1632	2007	39	59	-5	A	N
SIGUIJ	34	N	PRO	A	21	1	0	0	221	66	290	A	N
ATOM	35	CD	PRO	A	21	-4.048	12.644	33.756	1.00	14.83		A	C
ANISOU	35	CD	PRO	A	21	1541	1800	2794	175	325	-92	A	C
SIGUIJ	35	CD	PRO	A	21	7	11	1	201	872	13263	A	C
ATOM	36	CA	PRO	A	21	-2.941	10.505	34.219	1.00	14.80		A	C
ANISOU	36	CA	PRO	A	21	1375	1626	1987	3	4	0	A	C
SIGUIJ	36	CA	PRO	A	21	7	13	1	204	807	13263	A	C
ATOM	37	CB	PRO	A	21	-4.067	10.765	35.243	1.00	14.78		A	C
ANISOU	37	CB	PRO	A	21	1626	2137	2270	87	260	-36	A	C
SIGUIJ	37	CB	PRO	A	21	9	20	0	206	755	13263	A	C
ATOM	38	CG	PRO	A	21	-4.249	12.306	35.208	1.00	15.02		A	C
ANISOU	38	CG	PRO	A	21	1710	2137	2810	95	340	-30	A	C
SIGUIJ	38	CG	PRO	A	21	5	0	0	208	712	13264	A	C
ATOM	39	C	PRO	A	21	-3.124	9.168	33.462	1.00	15.07		A	C
ANISOU	39	C	PRO	A	21	1444	1620	1929	-40	41	6	A	C
SIGUIJ	39	C	PRO	A	21	5	1	1	209	675	13264	A	C
ATOM	40	O	PRO	A	21	-4.000	9.040	32.592	1.00	15.55		A	O
ANISOU	40	O	PRO	A	21	1692	2259	2177	-91	-215	-34	A	O
SIGUIJ	40	O	PRO	A	21	1	0	0	221	57	289	A	O
ATOM	41	N	CYS	A	22	-2.296	8.185	33.761	1.00	15.39		A	N
ANISOU	41	N	CYS	A	22	1549	1659	2056	23	-11	1	A	N
SIGUIJ	41	N	CYS	A	22	1	0	0	221	66	290	A	N
ATOM	42	CA	CYS	A	22	-2.418	6.865	33.130	1.00	15.88		A	C
ANISOU	42	CA	CYS	A	22	1853	1653	2100	10	-75	-3	A	C
SIGUIJ	42	CA	CYS	A	22	5	1	1	210	644	13265	A	C
ATOM	43	C	CYS	A	22	-3.697	6.228	33.607	1.00	16.58		A	C
ANISOU	43	C	CYS	A	22	1864	1719	2307	-16	-27	0	A	C
SIGUIJ	43	C	CYS	A	22	5	1	1	211	617	13265	A	C
ATOM	44	O	CYS	A	22	-4.105	6.448	34.723	1.00	16.62		A	O
ANISOU	44	O	CYS	A	22	2051	1809	2331	-14	49	-2	A	O
SIGUIJ	44	O	CYS	A	22	1	0	0	221	57	289	A	O
ATOM	45	CB	CYS	A	22	-1.259	5.925	33.523	1.00	15.41		A	C
ANISOU	45	CB	CYS	A	22	1802	1480	2278	-117	-147	4	A	C
SIGUIJ	45	CB	CYS	A	22	5	1	1	212	592	13266	A	C
ATOM	46	SG	CYS	A	22	0.421	6.523	33.162	1.00	14.69		A	S
ANISOU	46	SG	CYS	A	22	1822	1696	1955	-194	-224	61	A	S
SIGUIJ	46	SG	CYS	A	22	1	0	0	221	49	289	A	S
ATOM	47	N	ALA	A	23	-4.321	5.433	32.759	1.00	17.74		A	N

- 45 -

ANISOU	47	N	ALA	A	23	2277	1732	2634	5	-394	-34	A	N
SIGUIJ	47	N	ALA	A	23	1	0	0	221	66	290	A	N
ATOM	48	CA	ALA	A	23	-5.508	4.669	33.194	1.00	18.55		A	C
ANISOU	48	CA	ALA	A	23	2391	1809	3463	-41	-135	-3	A	C
SIGUIJ	48	CA	ALA	A	23	5	1	1	213	571	13267	A	C
ATOM	49	CB	ALA	A	23	-6.037	3.781	32.042	1.00	18.86		A	C
ANISOU	49	CB	ALA	A	23	2965	2068	3487	-401	-128	-35	A	C
SIGUIJ	49	CB	ALA	A	23	5	1	1	213	552	13268	A	C
ATOM	50	C	ALA	A	23	-5.166	3.804	34.407	1.00	19.23		A	C
ANISOU	50	C	ALA	A	23	1845	1832	3427	1	37	1	A	C
SIGUIJ	50	C	ALA	A	23	5	1	1	214	534	13269	A	C
ATOM	51	O	ALA	A	23	-4.112	3.144	34.461	1.00	18.85		A	O
ANISOU	51	O	ALA	A	23	1841	1831	3120	0	48	1	A	O
SIGUIJ	51	O	ALA	A	23	1	0	0	221	57	289	A	O
ATOM	52	N	ARG	A	24	-6.032	3.816	35.411	1.00	20.08		A	N
ANISOU	52	N	ARG	A	24	1882	2804	3472	5	75	-1	A	N
SIGUIJ	52	N	ARG	A	24	1	0	0	221	65	290	A	N
ATOM	53	CA	ARG	A	24	-5.697	3.207	36.691	1.00	20.80		A	C
ANISOU	53	CA	ARG	A	24	1855	2815	3452	129	140	-15	A	C
SIGUIJ	53	CA	ARG	A	24	5	1	1	214	518	13269	A	C
ATOM	54	CB	ARG	A	24	-6.822	3.458	37.694	1.00	22.17		A	C
ANISOU	54	CB	ARG	A	24	3555	4746	5612	306	2004	-298	A	C
SIGUIJ	54	CB	ARG	A	24	5	1	1	214	504	13270	A	C
ATOM	55	CG	ARG	A	24	-6.871	4.917	38.104	1.00	24.04		A	C
ANISOU	55	CG	ARG	A	24	7566	4653	3991	894	390	104	A	C
SIGUIJ	55	CG	ARG	A	24	5	1	1	215	490	13271	A	C
ATOM	56	CD	ARG	A	24	-5.651	5.348	38.911	1.00	25.58		A	C
ANISOU	56	CD	ARG	A	24	8395	7383	5215	-3	-385	2	A	C
SIGUIJ	56	CD	ARG	A	24	5	1	1	215	478	13273	A	C
ATOM	57	NE	ARG	A	24	-6.074	5.585	40.291	1.00	27.17		A	N
ANISOU	57	NE	ARG	A	24	10414	8862	5354	905	77	25	A	N
SIGUIJ	57	NE	ARG	A	24	1	0	0	221	65	290	A	N
ATOM	58	CZ	ARG	A	24	-6.285	6.793	40.812	1.00	27.52		A	C
ANISOU	58	CZ	ARG	A	24	6679	8752	5430	224	147	4	A	C
SIGUIJ	58	CZ	ARG	A	24	5	1	1	215	466	13274	A	C
ATOM	59	NH1	ARG	A	24	-6.098	7.887	40.064	1.00	28.32		A	N
ANISOU	59	NH1	ARG	A	24	6831	8764	5428	172	118	4	A	N
SIGUIJ	59	NH1	ARG	A	24	1	0	0	221	65	290	A	N
ATOM	60	NH2	ARG	A	24	-6.731	6.923	42.060	1.00	28.06		A	N
ANISOU	60	NH2	ARG	A	24	5890	11495	5319	752	-191	-109	A	N
SIGUIJ	60	NH2	ARG	A	24	1	0	0	221	65	290	A	N
ATOM	61	C	ARG	A	24	-5.476	1.724	36.489	1.00	20.46		A	C
ANISOU	61	C	ARG	A	24	1964	2810	3539	158	110	-16	A	C
SIGUIJ	61	C	ARG	A	24	5	1	1	216	455	13275	A	C
ATOM	62	O	ARG	A	24	-6.252	1.056	35.774	1.00	21.02		A	O
ANISOU	62	O	ARG	A	24	2562	3150	3998	-121	-294	-37	A	O
SIGUIJ	62	O	ARG	A	24	1	0	0	221	57	289	A	O
ATOM	63	N	GLY	A	25	-4.405	1.185	37.066	1.00	19.77		A	N
ANISOU	63	N	GLY	A	25	1694	2152	3266	-187	298	55	A	N
SIGUIJ	63	N	GLY	A	25	1	0	0	221	65	290	A	N
ATOM	64	CA	GLY	A	25	-4.142	-0.252	36.960	1.00	19.02		A	C

- 46 -

ANISOU	64	CA	GLY	A	25	2494	2178	3788	-31	221	-4	A	C
SIGUIJ	64	CA	GLY	A	25	5	1	1	216	445	13276	A	C
ATOM	65	C	GLY	A	25	-3.455	-0.704	35.691	1.00	18.44		A	C
ANISOU	65	C	GLY	A	25	1599	2043	3543	-102	-238	-3	A	C
SIGUIJ	65	C	GLY	A	25	5	1	1	216	436	13277	A	C
ATOM	66	O	GLY	A	25	-3.197	-1.879	35.566	1.00	18.78		A	O
ANISOU	66	O	GLY	A	25	2182	2069	3909	1	-69	-1	A	O
SIGUIJ	66	O	GLY	A	25	1	0	0	221	57	289	A	O
ATOM	67	N	SER	A	26	-3.101	0.199	34.775	1.00	17.58		A	N
ANISOU	67	N	SER	A	26	1637	1926	3293	-297	-416	-184	A	N
SIGUIJ	67	N	SER	A	26	1	0	0	221	65	290	A	N
ATOM	68	CA	SER	A	26	-2.521	-0.204	33.539	1.00	16.76		A	C
ANISOU	68	CA	SER	A	26	1639	1828	3224	-141	-487	-92	A	C
SIGUIJ	68	CA	SER	A	26	5	1	1	216	427	13279	A	C
ATOM	69	CB	SER	A	26	-2.959	0.744	32.420	1.00	17.50		A	C
ANISOU	69	CB	SER	A	26	2341	1960	3304	23	-634	-58	A	C
SIGUIJ	69	CB	SER	A	26	5	1	1	216	419	13280	A	C
ATOM	70	OG	SER	A	26	-2.523	2.081	32.633	1.00	17.84		A	O
ANISOU	70	OG	SER	A	26	2705	1973	2835	-62	-851	69	A	O
SIGUIJ	70	OG	SER	A	26	1	0	0	221	57	289	A	O
ATOM	71	C	SER	A	26	-0.983	-0.267	33.562	1.00	15.79		A	C
ANISOU	71	C	SER	A	26	1642	1901	2649	-132	-475	-100	A	C
SIGUIJ	71	C	SER	A	26	4	1	1	216	411	13282	A	C
ATOM	72	O	SER	A	26	-0.388	-0.642	32.569	1.00	15.91		A	O
ANISOU	72	O	SER	A	26	1789	1923	2633	5	-449	-18	A	O
SIGUIJ	72	O	SER	A	26	1	0	0	221	57	289	A	O
ATOM	73	N	HIS	A	27	-0.404	0.093	34.705	1.00	14.85		A	N
ANISOU	73	N	HIS	A	27	1597	1233	2583	-97	-450	88	A	N
SIGUIJ	73	N	HIS	A	27	1	0	0	221	65	290	A	N
ATOM	74	CA	HIS	A	27	1.073	0.045	34.891	1.00	14.13		A	C
ANISOU	74	CA	HIS	A	27	1596	1182	2242	-107	-396	104	A	C
SIGUIJ	74	CA	HIS	A	27	4	1	1	217	404	13283	A	C
ATOM	75	CB	HIS	A	27	1.648	1.471	34.961	1.00	14.38		A	C
ANISOU	75	CB	HIS	A	27	1622	1194	2354	-125	-156	-12	A	C
SIGUIJ	75	CB	HIS	A	27	4	1	1	217	397	13285	A	C
ATOM	76	CG	HIS	A	27	1.495	2.179	33.679	1.00	15.00		A	C
ANISOU	76	CG	HIS	A	27	1758	1278	2360	-48	-128	-2	A	C
SIGUIJ	76	CG	HIS	A	27	4	1	1	217	390	13286	A	C
ATOM	77	CD2	HIS	A	27	2.337	2.364	32.656	1.00	15.85		A	C
ANISOU	77	CD2	HIS	A	27	2142	1369	2619	15	183	34	A	C
SIGUIJ	77	CD2	HIS	A	27	4	1	1	217	384	13288	A	C
ATOM	78	ND1	HIS	A	27	0.259	2.638	33.259	1.00	15.70		A	N
ANISOU	78	ND1	HIS	A	27	1802	1462	2672	0	-210	2	A	N
SIGUIJ	78	ND1	HIS	A	27	1	0	0	221	65	290	A	N
ATOM	79	CE1	HIS	A	27	0.339	3.050	32.017	1.00	15.87		A	C
ANISOU	79	CE1	HIS	A	27	2573	1650	2706	234	-53	63	A	C
SIGUIJ	79	CE1	HIS	A	27	4	1	1	217	378	13290	A	C
ATOM	80	NE2	HIS	A	27	1.584	2.889	31.613	1.00	15.97		A	N
ANISOU	80	NE2	HIS	A	27	2579	1630	2756	223	-27	16	A	N
SIGUIJ	80	NE2	HIS	A	27	1	0	0	221	65	290	A	N
ATOM	81	C	HIS	A	27	1.499	-0.711	36.103	1.00	13.41		A	C

- 47 -

ANISOU	81	C	HIS	A	27	1335	1030	2120	-38	-247	-16	A	C
SIGUIJ	81	C	HIS	A	27	4	1	1	217	372	13292	A	C
ATOM	82	O	HIS	A	27	2.230	-0.213	36.943	1.00	12.83		A	O
ANISOU	82	O	HIS	A	27	1319	1289	1972	-233	-109	9	A	O
SIGUIJ	82	O	HIS	A	27	1	0	0	221	57	289	A	O
ATOM	83	N	PRO	A	28	1.059	-1.976	36.227	1.00	12.88		A	N
ANISOU	83	N	PRO	A	28	1587	1063	2237	-143	-402	36	A	N
SIGUIJ	83	N	PRO	A	28	1	0	0	221	65	290	A	N
ATOM	84	CD	PRO	A	28	0.178	-2.764	35.323	1.00	13.22		A	C
ANISOU	84	CD	PRO	A	28	1835	1215	2589	-167	-633	-88	A	C
SIGUIJ	84	CD	PRO	A	28	4	1	1	217	366	13294	A	C
ATOM	85	CA	PRO	A	28	1.373	-2.734	37.452	1.00	12.51		A	C
ANISOU	85	CA	PRO	A	28	1385	1110	2197	-28	-278	24	A	C
SIGUIJ	85	CA	PRO	A	28	4	1	1	217	361	13296	A	C
ATOM	86	CB	PRO	A	28	0.454	-3.952	37.370	1.00	13.00		A	C
ANISOU	86	CB	PRO	A	28	1841	1359	2863	-369	-419	98	A	C
SIGUIJ	86	CB	PRO	A	28	4	1	1	218	356	13298	A	C
ATOM	87	CG	PRO	A	28	0.220	-4.146	35.990	1.00	13.60		A	C
ANISOU	87	CG	PRO	A	28	1975	1284	2883	-96	-481	53	A	C
SIGUIJ	87	CG	PRO	A	28	4	1	1	218	351	13300	A	C
ATOM	88	C	PRO	A	28	2.842	-3.139	37.575	1.00	12.04		A	C
ANISOU	88	C	PRO	A	28	1377	1099	1824	-36	-239	19	A	C
SIGUIJ	88	C	PRO	A	28	4	1	1	218	347	13302	A	C
ATOM	89	O	PRO	A	28	3.260	-3.581	38.616	1.00	11.68		A	O
ANISOU	89	O	PRO	A	28	1326	1114	1831	-80	-229	36	A	O
SIGUIJ	89	O	PRO	A	28	1	0	0	221	57	289	A	O
ATOM	90	N	TRP	A	29	3.566	-2.991	36.501	1.00	11.90		A	N
ANISOU	90	N	TRP	A	29	1528	1241	1911	-72	-107	-4	A	N
SIGUIJ	90	N	TRP	A	29	1	0	0	221	65	290	A	N
ATOM	91	CA	TRP	A	29	4.996	-3.300	36.496	1.00	12.18		A	C
ANISOU	91	CA	TRP	A	29	1523	1332	1800	-64	-101	15	A	C
SIGUIJ	91	CA	TRP	A	29	4	1	1	218	342	13304	A	C
ATOM	92	CB	TRP	A	29	5.462	-3.949	35.170	1.00	13.13		A	C
ANISOU	92	CB	TRP	A	29	2014	1545	1850	145	-35	-22	A	C
SIGUIJ	92	CB	TRP	A	29	4	1	1	218	338	13306	A	C
ATOM	93	CG	TRP	A	29	4.557	-3.677	34.063	1.00	14.19		A	C
ANISOU	93	CG	TRP	A	29	1935	1421	1840	59	5	2	A	C
SIGUIJ	93	CG	TRP	A	29	4	1	1	218	334	13309	A	C
ATOM	94	CD2	TRP	A	29	4.456	-2.468	33.269	1.00	14.61		A	C
ANISOU	94	CD2	TRP	A	29	1678	1431	1845	15	-7	0	A	C
SIGUIJ	94	CD2	TRP	A	29	4	1	1	218	330	13311	A	C
ATOM	95	CE2	TRP	A	29	3.367	-2.647	32.397	1.00	14.65		A	C
ANISOU	95	CE2	TRP	A	29	1668	2320	1813	-130	26	14	A	C
SIGUIJ	95	CE2	TRP	A	29	4	1	1	218	326	13313	A	C
ATOM	96	CE3	TRP	A	29	5.164	-1.260	33.223	1.00	14.33		A	C
ANISOU	96	CE3	TRP	A	29	1697	1435	1778	16	3	0	A	C
SIGUIJ	96	CE3	TRP	A	29	4	1	1	218	322	13316	A	C
ATOM	97	CD1	TRP	A	29	3.550	-4.500	33.613	1.00	15.11		A	C
ANISOU	97	CD1	TRP	A	29	2761	2440	1961	-856	-156	143	A	C
SIGUIJ	97	CD1	TRP	A	29	4	1	1	218	319	13318	A	C
ATOM	98	NE1	TRP	A	29	2.846	-3.888	32.651	1.00	15.86		A	N

- 48 -

ANISOU	98	NE1 TRP A	29	2881	2580	1940	-698	-148	114	A	N
SIGUIJ	98	NE1 TRP A	29	1	0	0	221	65	290	A	N
ATOM	99	CZ2 TRP A	29	2.979	-1.691	31.498	1.00	15.40		A	C
ANISOU	99	CZ2 TRP A	29	2058	2335	1811	-28	17	0	A	C
SIGUIJ	99	CZ2 TRP A	29	4	1	1	218	315	13321	A	C
ATOM	100	CZ3 TRP A	29	4.756	-0.305	32.310	1.00	14.89		A	C
ANISOU	100	CZ3 TRP A	29	1979	1524	1775	179	30	17	A	C
SIGUIJ	100	CZ3 TRP A	29	4	1	1	218	312	13324	A	C
ATOM	101	CH2 TRP A	29	3.670	-0.537	31.460	1.00	14.79		A	C
ANISOU	101	CH2 TRP A	29	2012	2299	1774	13	28	0	A	C
SIGUIJ	101	CH2 TRP A	29	4	1	1	218	308	13326	A	C
ATOM	102	C TRP A	29	5.828	-2.043	36.737	1.00	12.02		A	C
ANISOU	102	C TRP A	29	1359	1288	1518	12	23	1	A	C
SIGUIJ	102	C TRP A	29	3	1	1	218	305	13329	A	C
ATOM	103	O TRP A	29	7.069	-2.125	36.796	1.00	12.59		A	O
ANISOU	103	O TRP A	29	1355	1715	2100	60	1	0	A	O
SIGUIJ	103	O TRP A	29	1	0	0	221	57	289	A	O
ATOM	104	N AGLN A	30	5.205	-0.863	36.830	0.50	11.35		A	N
ANISOU	104	N AGLN A	30	1329	1275	1273	-2	-1	0	A	N
SIGUIJ	104	N AGLN A	30	1	0	0	221	65	290	A	N
ATOM	105	N BGLN A	30	5.203	-0.881	36.850	0.50	13.54		A	N
ANISOU	105	N BGLN A	30	1323	1291	1407	0	0	0	A	N
SIGUIJ	105	N BGLN A	30	1	0	0	221	65	290	A	N
ATOM	106	CA AGLN A	30	5.894	0.403	37.181	0.50	11.36		A	C
ANISOU	106	CA AGLN A	30	1320	1267	1269	0	-2	0	A	C
SIGUIJ	106	CA AGLN A	30	3	1	1	218	302	13332	A	C
ATOM	107	CA BGLN A	30	5.970	0.313	37.155	0.50	13.55		A	C
ANISOU	107	CA BGLN A	30	1312	1301	1399	0	-2	0	A	C
SIGUIJ	107	CA BGLN A	30	3	1	1	218	299	13335	A	C
ATOM	108	CB AGLN A	30	5.001	1.609	36.822	0.50	12.26		A	C
ANISOU	108	CB AGLN A	30	1333	1253	1305	-2	0	0	A	C
SIGUIJ	108	CB AGLN A	30	3	1	1	218	296	13338	A	C
ATOM	109	CB BGLN A	30	5.267	1.540	36.592	0.50	14.45		A	C
ANISOU	109	CB BGLN A	30	1335	1312	1452	0	-6	0	A	C
SIGUIJ	109	CB BGLN A	30	3	1	2	219	294	13341	A	C
ATOM	110	CG AGLN A	30	5.508	3.025	37.334	0.50	14.52		A	C
ANISOU	110	CG AGLN A	30	1371	1241	1278	-7	1	0	A	C
SIGUIJ	110	CG AGLN A	30	3	1	2	219	291	13344	A	C
ATOM	111	CG BGLN A	30	6.161	2.794	36.722	0.50	16.71		A	C
ANISOU	111	CG BGLN A	30	1348	1315	1580	0	-35	0	A	C
SIGUIJ	111	CG BGLN A	30	3	1	2	219	288	13347	A	C
ATOM	112	CD AGLN A	30	6.288	3.795	36.261	0.50	14.95		A	C
ANISOU	112	CD AGLN A	30	1351	1153	1282	37	5	2	A	C
SIGUIJ	112	CD AGLN A	30	3	1	1	219	286	13350	A	C
ATOM	113	CD BGLN A	30	6.013	3.746	35.560	0.50	17.14		A	C
ANISOU	113	CD BGLN A	30	2113	1379	1582	255	76	29	A	C
SIGUIJ	113	CD BGLN A	30	3	1	1	35	2109	290	A	C
ATOM	114	OE1AGLN A	30	5.876	3.821	35.118	0.50	16.06		A	O
ANISOU	114	OE1AGLN A	30	1451	2071	1288	196	-24	-17	A	O
SIGUIJ	114	OE1AGLN A	30	1	0	0	221	57	289	A	O
ATOM	115	OE1BGLN A	30	5.231	3.488	34.662	0.50	18.25		A	O

ANISOU	115	OE1BGLN	A	30	2203	1420	1669	292	-14	-6	A	O	
SIGUIJ	115	OE1BGLN	A	30	1	0	0	221	57	289	A	O	
ATOM	116	NE2AGLN	A	30	7.403	4.428	36.640	0.50	16.36		A	N	
ANISOU	116	NE2AGLN	A	30	1381	1242	1350	-6	0	0	A	N	
SIGUIJ	116	NE2AGLN	A	30	1	0	0	221	65	289	A	N	
ATOM	117	NE2BGLN	A	30	6.748	4.850	35.586	0.50	18.55		A	N	
ANISOU	117	NE2BGLN	A	30	1820	1249	1612	450	53	57	A	N	
SIGUIJ	117	NE2BGLN	A	30	1	0	0	221	65	289	A	N	
ATOM	118	C	AGLN	A	30	6.208	0.473	38.664	0.50	10.74		A	C
ANISOU	118	C	AGLN	A	30	1091	1125	1264	-1	15	0	A	C
SIGUIJ	118	C	AGLN	A	30	3	1	1	157	1501	290	A	C
ATOM	119	C	BGLN	A	30	6.210	0.474	38.651	0.50	12.93		A	C
ANISOU	119	C	BGLN	A	30	1098	1088	1390	0	1	0	A	C
SIGUIJ	119	C	BGLN	A	30	3	1	1	181	1228	290	A	C
ATOM	120	O	AGLN	A	30	5.337	0.147	39.489	0.50	10.87		A	O
ANISOU	120	O	AGLN	A	30	1106	1331	1279	-50	25	6	A	O
SIGUIJ	120	O	AGLN	A	30	1	0	0	221	57	289	A	O
ATOM	121	O	BGLN	A	30	5.317	0.188	39.463	0.50	13.06		A	O
ANISOU	121	O	BGLN	A	30	1169	1313	1472	-63	66	19	A	O
SIGUIJ	121	O	BGLN	A	30	1	0	0	221	57	289	A	O
ATOM	122	N	VAL	A	31	7.422	0.905	39.005	1.00	9.60		A	N
ANISOU	122	N	VAL	A	31	1089	1057	1213	5	14	1	A	N
SIGUIJ	122	N	VAL	A	31	1	0	0	221	65	289	A	N
ATOM	123	CA	VAL	A	31	7.763	1.199	40.367	1.00	9.54		A	C
ANISOU	123	CA	VAL	A	31	1166	1082	1207	-8	1	0	A	C
SIGUIJ	123	CA	VAL	A	31	3	1	1	191	1065	290	A	C
ATOM	124	CB	VAL	A	31	8.754	0.156	40.963	1.00	9.53		A	C
ANISOU	124	CB	VAL	A	31	1198	1106	1235	11	-1	0	A	C
SIGUIJ	124	CB	VAL	A	31	3	1	1	197	953	290	A	C
ATOM	125	CG1	VAL	A	31	8.192	-1.238	40.888	1.00	10.19		A	C
ANISOU	125	CG1	VAL	A	31	1457	1140	1524	-82	-5	-3	A	C
SIGUIJ	125	CG1	VAL	A	31	3	1	1	201	870	290	A	C
ATOM	126	CG2	VAL	A	31	10.134	0.266	40.296	1.00	9.91		A	C
ANISOU	126	CG2	VAL	A	31	1206	1164	1260	3	4	0	A	C
SIGUIJ	126	CG2	VAL	A	31	3	1	1	204	806	290	A	C
ATOM	127	C	VAL	A	31	8.337	2.615	40.423	1.00	9.25		A	C
ANISOU	127	C	VAL	A	31	1145	1079	1094	12	1	0	A	C
SIGUIJ	127	C	VAL	A	31	3	1	1	206	754	290	A	C
ATOM	128	O	VAL	A	31	8.676	3.230	39.417	1.00	9.42		A	O
ANISOU	128	O	VAL	A	31	1235	1123	1098	8	18	1	A	O
SIGUIJ	128	O	VAL	A	31	1	0	0	221	57	289	A	O
ATOM	129	N	ALA	A	32	8.436	3.153	41.652	1.00	9.37		A	N
ANISOU	129	N	ALA	A	32	1272	1099	1098	-23	16	-2	A	N
SIGUIJ	129	N	ALA	A	32	1	0	0	221	65	289	A	N
ATOM	130	CA	ALA	A	32	9.210	4.366	41.898	1.00	9.78		A	C
ANISOU	130	CA	ALA	A	32	1249	1094	1197	-13	-1	0	A	C
SIGUIJ	130	CA	ALA	A	32	3	1	0	208	711	290	A	C
ATOM	131	CB	ALA	A	32	8.351	5.460	42.481	1.00	9.76		A	C
ANISOU	131	CB	ALA	A	32	1359	1149	1201	66	10	3	A	C
SIGUIJ	131	CB	ALA	A	32	3	1	0	209	675	290	A	C
ATOM	132	C	ALA	A	32	10.330	4.050	42.873	1.00	10.12		A	C

- 50 -

ANISOU	132	C	ALA	A	32	1242	1129	1199	-11	-1	0	A	C
SIGUIJ	132	C	ALA	A	32	3	1	0	210	643	290	A	C
ATOM	133	O	ALA	A	32	10.139	3.271	43.844	1.00	10.36		A	O
ANISOU	133	O	ALA	A	32	1456	1231	1233	-165	-69	41	A	O
SIGUIJ	133	O	ALA	A	32	1	0	0	221	57	289	A	O
ATOM	134	N	LEU	A	33	11.476	4.682	42.664	1.00	10.54		A	N
ANISOU	134	N	LEU	A	33	1224	1112	1226	3	0	0	A	N
SIGUIJ	134	N	LEU	A	33	1	0	0	221	65	289	A	N
ATOM	135	CA	LEU	A	33	12.560	4.613	43.607	1.00	11.11		A	C
ANISOU	135	CA	LEU	A	33	1222	1142	1244	7	-3	0	A	C
SIGUIJ	135	CA	LEU	A	33	3	1	0	211	616	290	A	C
ATOM	136	CB	LEU	A	33	13.898	4.466	42.877	1.00	12.76		A	C
ANISOU	136	CB	LEU	A	33	1307	1723	1534	78	145	-32	A	C
SIGUIJ	136	CB	LEU	A	33	3	1	0	212	592	290	A	C
ATOM	137	CG	LEU	A	33	14.013	3.133	42.096	1.00	13.82		A	C
ANISOU	137	CG	LEU	A	33	2005	1782	1606	316	-131	-94	A	C
SIGUIJ	137	CG	LEU	A	33	3	1	0	213	570	290	A	C
ATOM	138	CD1	LEU	A	33	15.339	3.077	41.298	1.00	15.26		A	C
ANISOU	138	CD1	LEU	A	33	2152	3310	1943	551	89	191	A	C
SIGUIJ	138	CD1	LEU	A	33	3	1	0	213	551	290	A	C
ATOM	139	CD2	LEU	A	33	13.824	1.976	43.017	1.00	14.92		A	C
ANISOU	139	CD2	LEU	A	33	3327	1868	1759	214	9	1	A	C
SIGUIJ	139	CD2	LEU	A	33	3	1	0	214	534	290	A	C
ATOM	140	C	LEU	A	33	12.540	5.910	44.392	1.00	11.52		A	C
ANISOU	140	C	LEU	A	33	1208	1140	1249	-7	-1	0	A	C
SIGUIJ	140	C	LEU	A	33	3	1	0	214	518	290	A	C
ATOM	141	O	LEU	A	33	12.664	7.004	43.780	1.00	10.87		A	O
ANISOU	141	O	LEU	A	33	1395	1137	1241	-18	13	-1	A	O
SIGUIJ	141	O	LEU	A	33	1	0	0	221	57	289	A	O
ATOM	142	N	LEU	A	34	12.396	5.788	45.715	1.00	11.68		A	N
ANISOU	142	N	LEU	A	34	1170	1376	1248	15	3	0	A	N
SIGUIJ	142	N	LEU	A	34	1	0	0	221	65	289	A	N
ATOM	143	CA	LEU	A	34	12.314	6.943	46.604	1.00	12.60		A	C
ANISOU	143	CA	LEU	A	34	1479	1370	1243	7	73	3	A	C
SIGUIJ	143	CA	LEU	A	34	3	1	0	214	503	290	A	C
ATOM	144	CB	LEU	A	34	11.081	6.842	47.541	1.00	12.95		A	C
ANISOU	144	CB	LEU	A	34	1514	1734	1296	-17	119	10	A	C
SIGUIJ	144	CB	LEU	A	34	3	1	0	215	490	290	A	C
ATOM	145	CG	LEU	A	34	9.777	6.385	46.830	1.00	12.96		A	C
ANISOU	145	CG	LEU	A	34	1607	1906	1508	-69	-3	1	A	C
SIGUIJ	145	CG	LEU	A	34	3	1	0	215	477	290	A	C
ATOM	146	CD1	LEU	A	34	8.650	6.238	47.872	1.00	13.74		A	C
ANISOU	146	CD1	LEU	A	34	1687	2206	1548	-130	51	-19	A	C
SIGUIJ	146	CD1	LEU	A	34	3	1	0	215	466	290	A	C
ATOM	147	CD2	LEU	A	34	9.357	7.365	45.767	1.00	13.15		A	C
ANISOU	147	CD2	LEU	A	34	1786	1933	1514	11	-1	0	A	C
SIGUIJ	147	CD2	LEU	A	34	3	1	0	216	455	290	A	C
ATOM	148	C	LEU	A	34	13.565	7.002	47.468	1.00	13.57		A	C
ANISOU	148	C	LEU	A	34	1511	1624	1306	-12	30	1	A	C
SIGUIJ	148	C	LEU	A	34	3	1	0	216	445	290	A	C
ATOM	149	O	LEU	A	34	14.159	5.987	47.850	1.00	13.68		A	O

- 51 -

ANISOU	149	O	LEU	A	34	1564	1637	1416	2	-11	0	A	O
SIGUIJ	149	O	LEU	A	34	1	0	0	221	57	289	A	O
ATOM	150	N	SER	A	35	13.936	8.232	47.793	1.00	14.73		A	N
ANISOU	150	N	SER	A	35	1898	1654	1350	-116	-70	21	A	N
SIGUIJ	150	N	SER	A	35	1	0	0	221	65	289	A	N
ATOM	151	CA	SER	A	35	14.881	8.464	48.857	1.00	16.41		A	C
ANISOU	151	CA	SER	A	35	2180	2469	1578	-157	-305	-116	A	C
SIGUIJ	151	CA	SER	A	35	3	1	0	216	436	290	A	C
ATOM	152	CB	SER	A	35	15.753	9.660	48.459	1.00	17.26		A	C
ANISOU	152	CB	SER	A	35	2216	2459	2653	-95	0	0	A	C
SIGUIJ	152	CB	SER	A	35	3	1	0	216	427	290	A	C
ATOM	153	OG	SER	A	35	16.663	9.949	49.532	1.00	19.50		A	O
ANISOU	153	OG	SER	A	35	2541	5015	2800	-738	-110	-149	A	O
SIGUIJ	153	OG	SER	A	35	1	0	0	221	57	289	A	O
ATOM	154	C	SER	A	35	14.032	8.785	50.083	1.00	16.90		A	C
ANISOU	154	C	SER	A	35	2398	2366	1625	-6	-193	2	A	C
SIGUIJ	154	C	SER	A	35	3	1	0	216	419	290	A	C
ATOM	155	O	SER	A	35	13.521	9.891	50.175	1.00	16.99		A	O
ANISOU	155	O	SER	A	35	2400	2365	1781	0	-161	-2	A	O
SIGUIJ	155	O	SER	A	35	1	0	0	221	57	289	A	O
ATOM	156	N	GLY	A	36	13.870	7.816	50.996	1.00	17.66		A	N
ANISOU	156	N	GLY	A	36	2457	2401	1660	-24	-183	29	A	N
SIGUIJ	156	N	GLY	A	36	1	0	0	221	65	289	A	N
ATOM	157	CA	GLY	A	36	12.902	7.996	52.076	1.00	18.35		A	C
ANISOU	157	CA	GLY	A	36	2983	2300	2129	-149	320	-62	A	C
SIGUIJ	157	CA	GLY	A	36	3	1	0	217	411	290	A	C
ATOM	158	C	GLY	A	36	11.499	8.004	51.475	1.00	18.74		A	C
ANISOU	158	C	GLY	A	36	2927	2453	1870	-152	436	-76	A	C
SIGUIJ	158	C	GLY	A	36	3	1	0	217	404	290	A	C
ATOM	159	O	GLY	A	36	11.031	6.959	50.980	1.00	19.36		A	O
ANISOU	159	O	GLY	A	36	3305	2782	2182	-526	835	-406	A	O
SIGUIJ	159	O	GLY	A	36	1	0	0	221	57	289	A	O
ATOM	160	N	AASN	A	38	10.841	9.156	51.477	0.50	19.21		A	N
ANISOU	160	N	AASN	A	38	2998	2481	1260	-106	463	-60	A	N
SIGUIJ	160	N	AASN	A	38	1	0	0	221	65	289	A	N
ATOM	161	N	BASN	A	38	10.837	9.161	51.484	0.50	21.40		A	N
ANISOU	161	N	BASN	A	38	2935	2451	1681	-163	415	-91	A	N
SIGUIJ	161	N	BASN	A	38	1	0	0	221	65	289	A	N
ATOM	162	CA	AASN	A	38	9.525	9.292	50.867	0.50	19.45		A	C
ANISOU	162	CA	AASN	A	38	3071	2625	1630	-86	299	-37	A	C
SIGUIJ	162	CA	AASN	A	38	3	1	0	217	397	290	A	C
ATOM	163	CA	BASN	A	38	9.584	9.336	50.746	0.50	21.64		A	C
ANISOU	163	CA	BASN	A	38	3238	2455	2604	-245	-109	36	A	C
SIGUIJ	163	CA	BASN	A	38	3	1	0	217	390	290	A	C
ATOM	164	CB	AASN	A	38	8.565	9.931	51.867	0.50	21.32		A	C
ANISOU	164	CB	AASN	A	38	3969	3097	1906	520	779	254	A	C
SIGUIJ	164	CB	AASN	A	38	3	1	0	217	384	290	A	C
ATOM	165	CB	BASN	A	38	8.446	9.760	51.678	0.50	23.51		A	C
ANISOU	165	CB	BASN	A	38	3600	3504	2904	159	143	64	A	C
SIGUIJ	165	CB	BASN	A	38	3	1	0	217	378	290	A	C
ATOM	166	CG	AASN	A	38	9.047	11.305	52.305	0.50	22.29		A	C

ANISOU	166	CG	AASN	A	38	4334	3158	2340	437	629	163	A	C
SIGUIJ	166	CG	AASN	A	38	3	1	0	217	372	290	A	C
ATOM	167	CG	BASN	A	38	7.797	8.601	52.331	0.50	24.48		A	C
ANISOU	167	CG	BASN	A	38	3999	3561	3006	25	316	14	A	C
SIGUIJ	167	CG	BASN	A	38	3	1	0	217	366	290	A	C
ATOM	168	OD1AASN	A	A	38	9.518	11.483	53.418	0.50	23.94		A	O
ANISOU	168	OD1AASN	A	A	38	13642	4902	4099	786	-3366	-264	A	O
SIGUIJ	168	OD1AASN	A	A	38	1	0	0	221	57	289	A	O
ATOM	169	OD1BASN	A	A	38	7.643	8.557	53.549	0.50	26.13		A	O
ANISOU	169	OD1BASN	A	A	38	4651	7786	3014	-907	366	32	A	O
SIGUIJ	169	OD1BASN	A	A	38	1	0	0	221	57	289	A	O
ATOM	170	ND2AASN	A	A	38	8.954	12.272	51.420	0.50	23.58		A	N
ANISOU	170	ND2AASN	A	A	38	3506	2961	2202	-23	218	-6	A	N
SIGUIJ	170	ND2AASN	A	A	38	1	0	0	221	65	289	A	N
ATOM	171	ND2BASN	A	A	38	7.399	7.631	51.525	0.50	25.77		A	N
ANISOU	171	ND2BASN	A	A	38	5305	3691	3182	-249	-8	1	A	N
SIGUIJ	171	ND2BASN	A	A	38	1	0	0	221	65	289	A	N
ATOM	172	C	AASN	A	38	9.587	10.171	49.609	0.50	18.94		A	C
ANISOU	172	C	AASN	A	38	2703	2575	1608	-86	266	-69	A	C
SIGUIJ	172	C	AASN	A	38	3	1	0	217	361	290	A	C
ATOM	173	C	BASN	A	38	9.640	10.322	49.580	0.50	21.13		A	C
ANISOU	173	C	BASN	A	38	2703	2394	2572	-42	49	-10	A	C
SIGUIJ	173	C	BASN	A	38	3	1	0	218	356	290	A	C
ATOM	174	O	AASN	A	38	8.557	10.475	49.008	0.50	19.09		A	O
ANISOU	174	O	AASN	A	38	2944	2973	2298	-1	-114	-3	A	O
SIGUIJ	174	O	AASN	A	38	1	0	0	221	57	289	A	O
ATOM	175	O	BASN	A	38	8.597	10.687	49.032	0.50	21.28		A	O
ANISOU	175	O	BASN	A	38	2746	2555	2688	7	-5	0	A	O
SIGUIJ	175	O	BASN	A	38	1	0	0	221	57	289	A	O
ATOM	176	N	AGLN	A	39	10.789	10.602	49.221	0.50	17.84		A	N
ANISOU	176	N	AGLN	A	39	2564	1698	1697	277	233	69	A	N
SIGUIJ	176	N	AGLN	A	39	1	0	0	221	65	289	A	N
ATOM	177	N	BGLN	A	39	10.842	10.756	49.195	0.50	20.03		A	N
ANISOU	177	N	BGLN	A	39	2585	2227	1629	17	-247	-9	A	N
SIGUIJ	177	N	BGLN	A	39	1	0	0	221	65	289	A	N
ATOM	178	CA	AGLN	A	39	10.911	11.552	48.118	0.50	16.87		A	C
ANISOU	178	CA	AGLN	A	39	2168	1642	1636	149	59	16	A	C
SIGUIJ	178	CA	AGLN	A	39	3	1	0	218	351	290	A	C
ATOM	179	CA	BGLN	A	39	10.968	11.684	48.078	0.50	19.06		A	C
ANISOU	179	CA	BGLN	A	39	2140	2182	1656	365	-2	-1	A	C
SIGUIJ	179	CA	BGLN	A	39	3	1	0	218	346	290	A	C
ATOM	180	CB	AGLN	A	39	12.010	12.556	48.439	0.50	18.21		A	C
ANISOU	180	CB	AGLN	A	39	2485	2055	1554	-214	134	-43	A	C
SIGUIJ	180	CB	AGLN	A	39	3	1	0	218	342	290	A	C
ATOM	181	CB	BGLN	A	39	12.119	12.679	48.323	0.50	20.40		A	C
ANISOU	181	CB	BGLN	A	39	2467	2609	1793	-4	-34	2	A	C
SIGUIJ	181	CB	BGLN	A	39	3	1	0	218	338	290	A	C
ATOM	182	CG	AGLN	A	39	11.590	13.519	49.543	0.50	20.94		A	C
ANISOU	182	CG	AGLN	A	39	4813	2247	1558	498	400	67	A	C
SIGUIJ	182	CG	AGLN	A	39	3	1	0	218	334	290	A	C
ATOM	183	CG	BGLN	A	39	12.162	13.856	47.333	0.50	23.13		A	C

- 53 -

ANISOU	183	CG	BGLN	A	39	6609	2671	1942	540	793	97	A	C
SIGUIJ	183	CG	BGLN	A	39	3	1	0	218	330	290	A	C
ATOM	184	CD	AGLN	A	39	10.530	14.487	49.057	0.50	22.09		A	C
ANISOU	184	CD	AGLN	A	39	4844	1804	3110	132	-396	-23	A	C
SIGUIJ	184	CD	AGLN	A	39	3	1	0	218	326	290	A	C
ATOM	185	CD	BGLN	A	39	13.249	14.884	47.642	0.50	24.28		A	C
ANISOU	185	CD	BGLN	A	39	7887	3880	5011	-575	13	-2	A	C
SIGUIJ	185	CD	BGLN	A	39	3	1	0	218	322	290	A	C
ATOM	186	OE1AGLN	A	39		10.757	15.244	48.122	0.50	23.85		A	O
ANISOU	186	OE1AGLN	A	39		7952	1817	3362	285	481	26	A	O
SIGUIJ	186	OE1AGLN	A	39		1	0	0	221	57	289	A	O
ATOM	187	OE1BGLN	A	39		14.098	14.668	48.508	0.50	26.04		A	O
ANISOU	187	OE1BGLN	A	39		9118	6539	6004	151	-1012	-51	A	O
SIGUIJ	187	OE1BGLN	A	39		1	0	0	221	57	289	A	O
ATOM	188	NE2AGLN	A	39		9.365	14.454	49.682	0.50	23.39		A	N
ANISOU	188	NE2AGLN	A	39		5096	5212	3983	41	71	-10	A	N
SIGUIJ	188	NE2AGLN	A	39		1	0	0	221	65	289	A	N
ATOM	189	NE2BGLN	A	39		13.221	16.010	46.939	0.50	25.58		A	N
ANISOU	189	NE2BGLN	A	39		6178	3851	4926	-526	159	-50	A	N
SIGUIJ	189	NE2BGLN	A	39		1	0	0	221	65	289	A	N
ATOM	190	C	AGLN	A	39	11.215	10.869	46.777	0.50	15.25		A	C
ANISOU	190	C	AGLN	A	39	1586	1583	1636	0	0	0	A	C
SIGUIJ	190	C	AGLN	A	39	3	1	0	218	318	290	A	C
ATOM	191	C	BGLN	A	39	11.231	10.914	46.773	0.50	17.44		A	C
ANISOU	191	C	BGLN	A	39	1636	2081	1649	161	-1	3	A	C
SIGUIJ	191	C	BGLN	A	39	3	1	0	218	315	290	A	C
ATOM	192	O	AGLN	A	39	12.145	10.050	46.676	0.50	14.48		A	O
ANISOU	192	O	AGLN	A	39	1594	1581	1457	0	-14	0	A	O
SIGUIJ	192	O	AGLN	A	39	1	0	0	221	57	289	A	O
ATOM	193	O	BGLN	A	39	12.138	10.069	46.696	0.50	16.67		A	O
ANISOU	193	O	BGLN	A	39	1674	2111	1542	191	-4	-4	A	O
SIGUIJ	193	O	BGLN	A	39	1	0	0	221	57	289	A	O
ATOM	194	N	LEU	A	40	10.460	11.236	45.742	1.00	13.93		A	N
ANISOU	194	N	LEU	A	40	1491	1582	1598	-2	66	1	A	N
SIGUIJ	194	N	LEU	A	40	1	0	0	221	65	289	A	N
ATOM	195	CA	LEU	A	40	10.683	10.606	44.410	1.00	12.92		A	C
ANISOU	195	CA	LEU	A	40	1356	1524	1597	-31	53	8	A	C
SIGUIJ	195	CA	LEU	A	40	3	1	0	218	312	290	A	C
ATOM	196	CB	LEU	A	40	9.769	11.223	43.394	1.00	12.72		A	C
ANISOU	196	CB	LEU	A	40	1493	1494	1694	-1	-55	-8	A	C
SIGUIJ	196	CB	LEU	A	40	3	1	0	218	308	290	A	C
ATOM	197	CG	LEU	A	40	10.039	10.715	41.963	1.00	12.55		A	C
ANISOU	197	CG	LEU	A	40	1722	1387	1706	-5	0	0	A	C
SIGUIJ	197	CG	LEU	A	40	3	1	0	218	305	290	A	C
ATOM	198	CD1	LEU	A	40	9.679	9.246	41.850	1.00	12.53		A	C
ANISOU	198	CD1	LEU	A	40	1609	1377	1747	14	2	0	A	C
SIGUIJ	198	CD1	LEU	A	40	3	1	0	218	302	290	A	C
ATOM	199	CD2	LEU	A	40	9.166	11.497	40.989	1.00	12.87		A	C
ANISOU	199	CD2	LEU	A	40	2090	1780	1721	377	-27	-22	A	C
SIGUIJ	199	CD2	LEU	A	40	3	1	0	218	299	290	A	C
ATOM	200	C	LEU	A	40	12.119	10.859	43.997	1.00	12.46		A	C

ANISOU	200	C	LEU	A	40	1335	1197	1424	25	5	0	A	C
SIGUIJ	200	C	LEU	A	40	3	1	0	218	296	290	A	C
ATOM	201	O	LEU	A	40	12.604	12.013	44.012	1.00	12.88		A	O
ANISOU	201	O	LEU	A	40	1625	1248	1672	-94	3	3	A	O
SIGUIJ	201	O	LEU	A	40	1	0	0	221	57	289	A	O
ATOM	202	N	HIS	A	41	12.788	9.810	43.565	1.00	11.50		A	N
ANISOU	202	N	HIS	A	41	1248	1160	1302	-24	1	0	A	N
SIGUIJ	202	N	HIS	A	41	1	0	0	221	65	289	A	N
ATOM	203	CA	HIS	A	41	14.095	9.947	42.933	1.00	10.71		A	C
ANISOU	203	CA	HIS	A	41	1249	1155	1274	-28	0	0	A	C
SIGUIJ	203	CA	HIS	A	41	3	1	0	219	293	290	A	C
ATOM	204	CB	HIS	A	41	15.128	9.142	43.722	1.00	10.98		A	C
ANISOU	204	CB	HIS	A	41	1266	1209	1307	-4	-1	0	A	C
SIGUIJ	204	CB	HIS	A	41	3	1	0	219	291	290	A	C
ATOM	205	CG	HIS	A	41	16.523	9.500	43.347	1.00	10.96		A	C
ANISOU	205	CG	HIS	A	41	1281	1429	1279	-91	2	6	A	C
SIGUIJ	205	CG	HIS	A	41	2	1	0	219	288	290	A	C
ATOM	206	CD2	HIS	A	41	17.517	8.800	42.755	1.00	10.94		A	C
ANISOU	206	CD2	HIS	A	41	1306	1513	1249	-42	-1	0	A	C
SIGUIJ	206	CD2	HIS	A	41	2	1	0	219	285	290	A	C
ATOM	207	ND1	HIS	A	41	17.048	10.749	43.618	1.00	11.76		A	N
ANISOU	207	ND1	HIS	A	41	1482	1474	1696	-178	-65	-59	A	N
SIGUIJ	207	ND1	HIS	A	41	1	0	0	221	65	289	A	N
ATOM	208	CE1	HIS	A	41	18.293	10.801	43.195	1.00	11.42		A	C
ANISOU	208	CE1	HIS	A	41	1480	1707	1745	-159	-40	-22	A	C
SIGUIJ	208	CE1	HIS	A	41	2	1	0	219	283	290	A	C
ATOM	209	NE2	HIS	A	41	18.614	9.642	42.680	1.00	11.19		A	N
ANISOU	209	NE2	HIS	A	41	1406	1687	1633	-183	13	8	A	N
SIGUIJ	209	NE2	HIS	A	41	1	0	0	221	65	289	A	N
ATOM	210	C	HIS	A	41	14.067	9.523	41.444	1.00	10.29		A	C
ANISOU	210	C	HIS	A	41	1182	1050	1269	-7	-3	0	A	C
SIGUIJ	210	C	HIS	A	41	2	1	0	219	280	290	A	C
ATOM	211	O	HIS	A	41	14.590	10.273	40.588	1.00	10.52		A	O
ANISOU	211	O	HIS	A	41	1447	1068	1291	-92	77	-27	A	O
SIGUIJ	211	O	HIS	A	41	1	0	0	221	57	289	A	O
ATOM	212	N	CYS	A	42	13.481	8.354	41.138	1.00	9.76		A	N
ANISOU	212	N	CYS	A	42	1233	1063	1149	-34	10	-3	A	N
SIGUIJ	212	N	CYS	A	42	1	0	0	221	64	289	A	N
ATOM	213	CA	CYS	A	42	13.458	7.885	39.760	1.00	9.65		A	C
ANISOU	213	CA	CYS	A	42	1222	1113	1149	-30	1	0	A	C
SIGUIJ	213	CA	CYS	A	42	2	1	0	219	278	290	A	C
ATOM	214	C	CYS	A	42	12.287	6.932	39.567	1.00	9.15		A	C
ANISOU	214	C	CYS	A	42	1079	897	1150	151	1	-2	A	C
SIGUIJ	214	C	CYS	A	42	2	1	0	219	276	290	A	C
ATOM	215	O	CYS	A	42	11.652	6.457	40.545	1.00	9.16		A	O
ANISOU	215	O	CYS	A	42	1210	1144	1141	-8	3	0	A	O
SIGUIJ	215	O	CYS	A	42	1	0	0	221	57	289	A	O
ATOM	216	CB	CYS	A	42	14.705	7.106	39.423	1.00	10.11		A	C
ANISOU	216	CB	CYS	A	42	1254	1211	1236	16	1	1	A	C
SIGUIJ	216	CB	CYS	A	42	2	1	0	219	273	290	A	C
ATOM	217	SG	CYS	A	42	16.187	8.081	39.076	1.00	10.44		A	S

- 55 -

ANISOU	217	SG	CYS	A	42	1259	1262	1221	0	5	0	A	S
SIGUIJ	217	SG	CYS	A	42	1	0	0	221	49	289	A	S
ATOM	218	N	GLY	A	43	11.981	6.644	38.326	1.00	9.41		A	N
ANISOU	218	N	GLY	A	43	1123	916	1162	72	2	-2	A	N
SIGUIJ	218	N	GLY	A	43	1	0	0	221	64	289	A	N
ATOM	219	CA	GLY	A	43	11.122	5.525	38.028	1.00	9.14		A	C
ANISOU	219	CA	GLY	A	43	1184	946	1182	23	0	0	A	C
SIGUIJ	219	CA	GLY	A	43	2	1	0	219	271	290	A	C
ATOM	220	C	GLY	A	43	11.888	4.246	37.848	1.00	9.24		A	C
ANISOU	220	C	GLY	A	43	1222	956	1143	35	7	2	A	C
SIGUIJ	220	C	GLY	A	43	2	1	0	219	269	290	A	C
ATOM	221	O	GLY	A	43	13.118	4.214	37.889	1.00	9.94		A	O
ANISOU	221	O	GLY	A	43	1219	1071	1587	27	5	0	A	O
SIGUIJ	221	O	GLY	A	43	1	0	0	221	56	289	A	O
ATOM	222	N	GLY	A	44	11.154	3.165	37.568	1.00	9.21		A	N
ANISOU	222	N	GLY	A	44	1227	951	1241	46	0	0	A	N
SIGUIJ	222	N	GLY	A	44	1	0	0	221	64	289	A	N
ATOM	223	CA	GLY	A	44	11.759	1.840	37.297	1.00	9.38		A	C
ANISOU	223	CA	GLY	A	44	1195	949	1269	42	-2	0	A	C
SIGUIJ	223	CA	GLY	A	44	2	1	0	219	267	290	A	C
ATOM	224	C	GLY	A	44	10.670	0.881	36.925	1.00	9.47		A	C
ANISOU	224	C	GLY	A	44	1167	935	1090	60	8	4	A	C
SIGUIJ	224	C	GLY	A	44	2	1	0	219	265	290	A	C
ATOM	225	O	GLY	A	44	9.475	1.226	36.894	1.00	9.28		A	O
ANISOU	225	O	GLY	A	44	1154	1005	1272	64	11	-2	A	O
SIGUIJ	225	O	GLY	A	44	1	0	0	221	56	289	A	O
ATOM	226	N	VAL	A	45	11.109	-0.343	36.641	1.00	9.57		A	N
ANISOU	226	N	VAL	A	45	1228	939	1165	63	9	5	A	N
SIGUIJ	226	N	VAL	A	45	1	0	0	221	64	289	A	N
ATOM	227	CA	VAL	A	45	10.162	-1.428	36.379	1.00	10.47		A	C
ANISOU	227	CA	VAL	A	45	1349	1042	1480	-33	-43	-3	A	C
SIGUIJ	227	CA	VAL	A	45	2	1	0	219	263	290	A	C
ATOM	228	CB	VAL	A	45	10.067	-1.867	34.895	1.00	11.25		A	C
ANISOU	228	CB	VAL	A	45	1934	1227	1484	57	-100	-12	A	C
SIGUIJ	228	CB	VAL	A	45	2	1	0	219	261	290	A	C
ATOM	229	CG1	VAL	A	45	9.505	-0.699	34.079	1.00	12.17		A	C
ANISOU	229	CG1	VAL	A	45	2443	1284	1519	201	-199	-37	A	C
SIGUIJ	229	CG1	VAL	A	45	2	1	0	219	259	290	A	C
ATOM	230	CG2	VAL	A	45	11.426	-2.314	34.385	1.00	11.84		A	C
ANISOU	230	CG2	VAL	A	45	1964	1327	1651	79	-23	-4	A	C
SIGUIJ	230	CG2	VAL	A	45	2	1	0	219	257	290	A	C
ATOM	231	C	VAL	A	45	10.536	-2.640	37.193	1.00	10.59		A	C
ANISOU	231	C	VAL	A	45	1193	1043	1477	-72	-27	1	A	C
SIGUIJ	231	C	VAL	A	45	2	1	0	219	255	290	A	C
ATOM	232	O	VAL	A	45	11.695	-2.926	37.505	1.00	10.74		A	O
ANISOU	232	O	VAL	A	45	1202	1061	1805	-105	-120	41	A	O
SIGUIJ	232	O	VAL	A	45	1	0	0	221	56	289	A	O
ATOM	233	N	LEU	A	46	9.494	-3.408	37.539	1.00	10.71		A	N
ANISOU	233	N	LEU	A	46	1168	973	1575	-10	4	0	A	N
SIGUIJ	233	N	LEU	A	46	1	0	0	221	64	289	A	N
ATOM	234	CA	LEU	A	46	9.719	-4.660	38.256	1.00	10.83		A	C

- 56 -

ANISOU	234	CA	LEU	A	46	1417	991	1583	23	7	0	A	C
SIGUIJ	234	CA	LEU	A	46	2	1	0	219	253	290	A	C
ATOM	235	CB	LEU	A	46	8.469	-5.021	39.052	1.00	11.09		A	C
ANISOU	235	CB	LEU	A	46	1450	1269	1572	-64	6	1	A	C
SIGUIJ	235	CB	LEU	A	46	2	1	0	219	252	290	A	C
ATOM	236	CG	LEU	A	46	8.600	-6.228	39.986	1.00	11.03		A	C
ANISOU	236	CG	LEU	A	46	1562	1272	1562	-60	0	-2	A	C
SIGUIJ	236	CG	LEU	A	46	2	1	0	219	250	290	A	C
ATOM	237	CD1	LEU	A	46	9.556	-5.869	41.099	1.00	11.37		A	C
ANISOU	237	CD1	LEU	A	46	1540	1181	1562	-1	0	0	A	C
SIGUIJ	237	CD1	LEU	A	46	2	1	0	219	248	290	A	C
ATOM	238	CD2	LEU	A	46	7.237	-6.661	40.502	1.00	12.42		A	C
ANISOU	238	CD2	LEU	A	46	1663	1418	2039	-113	194	-12	A	C
SIGUIJ	238	CD2	LEU	A	46	2	1	0	219	247	290	A	C
ATOM	239	C	LEU	A	46	10.037	-5.762	37.279	1.00	11.25		A	C
ANISOU	239	C	LEU	A	46	1508	1024	1604	63	4	-1	A	C
SIGUIJ	239	C	LEU	A	46	2	1	0	219	245	290	A	C
ATOM	240	O	LEU	A	46	9.172	-6.116	36.443	1.00	11.54		A	O
ANISOU	240	O	LEU	A	46	1554	1295	1635	-16	-8	-1	A	O
SIGUIJ	240	O	LEU	A	46	1	0	0	221	56	289	A	O
ATOM	241	N	VAL	A	47	11.218	-6.360	37.374	1.00	11.33		A	N
ANISOU	241	N	VAL	A	47	1473	917	1721	-1	-8	0	A	N
SIGUIJ	241	N	VAL	A	47	1	0	0	221	64	289	A	N
ATOM	242	CA	VAL	A	47	11.617	-7.457	36.456	1.00	12.20		A	C
ANISOU	242	CA	VAL	A	47	1589	944	1749	22	8	0	A	C
SIGUIJ	242	CA	VAL	A	47	2	1	0	219	243	290	A	C
ATOM	243	CB	VAL	A	47	13.132	-7.531	36.319	1.00	11.95		A	C
ANISOU	243	CB	VAL	A	47	1588	1116	2027	27	27	-1	A	C
SIGUIJ	243	CB	VAL	A	47	2	1	0	219	242	290	A	C
ATOM	244	CG1	VAL	A	47	13.524	-8.722	35.459	1.00	12.53		A	C
ANISOU	244	CG1	VAL	A	47	1881	1165	2043	135	24	-11	A	C
SIGUIJ	244	CG1	VAL	A	47	2	1	0	219	240	290	A	C
ATOM	245	CG2	VAL	A	47	13.676	-6.210	35.700	1.00	12.70		A	C
ANISOU	245	CG2	VAL	A	47	1707	1139	2103	-9	56	3	A	C
SIGUIJ	245	CG2	VAL	A	47	2	1	0	219	239	290	A	C
ATOM	246	C	VAL	A	47	11.094	-8.792	37.019	1.00	12.39		A	C
ANISOU	246	C	VAL	A	47	1511	945	1769	46	17	-1	A	C
SIGUIJ	246	C	VAL	A	47	2	1	0	219	237	290	A	C
ATOM	247	O	VAL	A	47	10.525	-9.641	36.298	1.00	13.11		A	O
ANISOU	247	O	VAL	A	47	1875	1153	1846	-200	9	-29	A	O
SIGUIJ	247	O	VAL	A	47	1	0	0	221	56	289	A	O
ATOM	248	N	ASN	A	48	11.274	-8.986	38.310	1.00	12.97		A	N
ANISOU	248	N	ASN	A	48	1610	1093	1767	10	-9	1	A	N
SIGUIJ	248	N	ASN	A	48	1	0	0	221	64	289	A	N
ATOM	249	CA	ASN	A	48	10.692	-10.197	38.940	1.00	13.56		A	C
ANISOU	249	CA	ASN	A	48	1881	1184	1765	-143	-30	21	A	C
SIGUIJ	249	CA	ASN	A	48	2	1	0	219	236	290	A	C
ATOM	250	CB	ASN	A	48	11.514	-11.465	38.691	1.00	13.95		A	C
ANISOU	250	CB	ASN	A	48	1980	1232	1875	-85	-22	3	A	C
SIGUIJ	250	CB	ASN	A	48	2	1	0	219	234	290	A	C
ATOM	251	CG	ASN	A	48	12.949	-11.323	39.128	1.00	14.48		A	C

- 57 -

ANISOU	251	CG	ASN	A	48	2032	1624	2353	-125	-178	8	A	C
SIGUIJ	251	CG	ASN	A	48	2	1	0	219	233	290	A	C
ATOM	252	OD1	ASN	A	48	13.236	-10.802	40.234	1.00	14.80		A	O
ANISOU	252	OD1	ASN	A	48	1744	1578	2355	13	-166	-9	A	O
SIGUIJ	252	OD1	ASN	A	48	1	0	0	221	56	289	A	O
ATOM	253	ND2	ASN	A	48	13.863	-11.736	38.267	1.00	15.49		A	N
ANISOU	253	ND2	ASN	A	48	2331	2029	2614	46	56	-4	A	N
SIGUIJ	253	ND2	ASN	A	48	1	0	0	221	64	289	A	N
ATOM	254	C	ASN	A	48	10.591	-9.863	40.432	1.00	14.01		A	C
ANISOU	254	C	ASN	A	48	1938	1259	1777	-307	26	-25	A	C
SIGUIJ	254	C	ASN	A	48	2	1	0	219	232	290	A	C
ATOM	255	O	ASN	A	48	10.777	-8.674	40.833	1.00	13.61		A	O
ANISOU	255	O	ASN	A	48	1850	1230	1641	-252	-44	32	A	O
SIGUIJ	255	O	ASN	A	48	1	0	0	221	56	289	A	O
ATOM	256	N	AGLU	A	49	10.232	-10.835	41.275	0.50	14.78		A	N
ANISOU	256	N	AGLU	A	49	1993	1342	1824	-383	-31	33	A	N
SIGUIJ	256	N	AGLU	A	49	1	0	0	221	64	289	A	N
ATOM	257	N	BGLU	A	49	10.279	-10.868	41.259	0.50	16.97		A	N
ANISOU	257	N	BGLU	A	49	2692	1451	1833	-668	-125	73	A	N
SIGUIJ	257	N	BGLU	A	49	1	0	0	221	64	289	A	N
ATOM	258	CA	AGLU	A	49	9.895	-10.519	42.670	0.50	15.14		A	C
ANISOU	258	CA	AGLU	A	49	1953	1282	1836	-526	-10	14	A	C
SIGUIJ	258	CA	AGLU	A	49	2	1	0	219	230	290	A	C
ATOM	259	CA	BGLU	A	49	9.970	-10.660	42.680	0.50	17.33		A	C
ANISOU	259	CA	BGLU	A	49	2140	2923	1801	-131	-322	-14	A	C
SIGUIJ	259	CA	BGLU	A	49	2	1	0	219	229	290	A	C
ATOM	260	CB	AGLU	A	49	9.299	-11.753	43.388	0.50	16.48		A	C
ANISOU	260	CB	AGLU	A	49	2320	1346	1820	-689	41	-34	A	C
SIGUIJ	260	CB	AGLU	A	49	2	1	0	219	228	290	A	C
ATOM	261	CB	BGLU	A	49	9.618	-12.009	43.367	0.50	18.67		A	C
ANISOU	261	CB	BGLU	A	49	5735	2899	2972	33	1843	23	A	C
SIGUIJ	261	CB	BGLU	A	49	2	1	0	219	226	290	A	C
ATOM	262	CG	AGLU	A	49	8.105	-12.394	42.692	0.50	18.70		A	C
ANISOU	262	CG	AGLU	A	49	2626	2154	1929	-1155	-48	54	A	C
SIGUIJ	262	CG	AGLU	A	49	2	1	0	219	225	290	A	C
ATOM	263	CG	BGLU	A	49	8.504	-12.838	42.715	0.50	20.89		A	C
ANISOU	263	CG	BGLU	A	49	6858	2850	6466	104	-162	-36	A	C
SIGUIJ	263	CG	BGLU	A	49	2	1	0	219	224	290	A	C
ATOM	264	CD	AGLU	A	49	8.468	-13.544	41.739	0.50	19.66		A	C
ANISOU	264	CD	AGLU	A	49	3022	2158	1755	-883	-230	149	A	C
SIGUIJ	264	CD	AGLU	A	49	2	1	0	219	223	290	A	C
ATOM	265	CD	BGLU	A	49	7.906	-13.862	43.655	0.50	21.85		A	C
ANISOU	265	CD	BGLU	A	49	6242	2697	6614	528	-98	69	A	C
SIGUIJ	265	CD	BGLU	A	49	2	1	0	219	222	290	A	C
ATOM	266	OE1AGLU	A	49		9.352	-13.404	40.878	0.50	20.29		A	O
ANISOU	266	OE1AGLU	A	49		3300	1254	2020	-905	54	-28	A	O
SIGUIJ	266	OE1AGLU	A	49		1	0	0	221	56	289	A	O
ATOM	267	OE1BGLU	A	49		8.685	-14.452	44.415	0.50	22.48		A	O
ANISOU	267	OE1BGLU	A	49		5760	1973	6434	47	22	0	A	O
SIGUIJ	267	OE1BGLU	A	49		1	0	0	221	56	289	A	O
ATOM	268	OE2AGLU	A	49		7.836	-14.615	41.842	0.50	21.02		A	O

- 58 -

ANISOU	268	OE2AGLU	A	49	2538	1944	1986	-562	-21	16	A	O
SIGUIJ	268	OE2AGLU	A	49	1	0	0	221	56	289	A	O
ATOM	269	OE2BGLU	A	49	6.671	-14.055	43.646	0.50	23.21		A	O
ANISOU	269	OE2BGLU	A	49	6326	6186	4560	-14	-65	3	A	O
SIGUIJ	269	OE2BGLU	A	49	1	0	0	221	56	289	A	O
ATOM	270	C AGLU	A	49	11.092	-9.977	43.471	0.50	14.59		A	C
ANISOU	270	C AGLU	A	49	1877	959	1825	-364	-1	3	A	C
SIGUIJ	270	C AGLU	A	49	2	1	0	219	220	290	A	C
ATOM	271	C BGLU	A	49	11.117	-10.003	43.452	0.50	16.78		A	C
ANISOU	271	C BGLU	A	49	1898	2721	1417	-13	-68	2	A	C
SIGUIJ	271	C BGLU	A	49	2	1	0	219	219	290	A	C
ATOM	272	O AGLU	A	49	10.911	-9.406	44.538	0.50	14.43		A	O
ANISOU	272	O AGLU	A	49	1617	968	1833	-452	-2	-5	A	O
SIGUIJ	272	O AGLU	A	49	1	0	0	221	56	289	A	O
ATOM	273	O BGLU	A	49	10.903	-9.403	44.497	0.50	16.62		A	O
ANISOU	273	O BGLU	A	49	2607	2738	1454	3	81	-1	A	O
SIGUIJ	273	O BGLU	A	49	1	0	0	221	56	289	A	O
ATOM	274	N AARG	A	50	12.298	-10.150	42.935	0.50	14.49		A	N
ANISOU	274	N AARG	A	50	1891	1588	1752	-249	-23	23	A	N
SIGUIJ	274	N AARG	A	50	1	0	0	221	64	289	A	N
ATOM	275	N BARG	A	50	12.324	-10.137	42.917	0.50	16.68		A	N
ANISOU	275	N BARG	A	50	1933	1479	1657	-163	39	-17	A	N
SIGUIJ	275	N BARG	A	50	1	0	0	221	64	289	A	N
ATOM	276	CA AARG	A	50	13.500	-9.681	43.606	0.50	14.49		A	C
ANISOU	276	CA AARG	A	50	1818	1271	1701	-88	17	-7	A	C
SIGUIJ	276	CA AARG	A	50	2	1	0	219	218	290	A	C
ATOM	277	CA BARG	A	50	13.521	-9.691	43.604	0.50	16.68		A	C
ANISOU	277	CA BARG	A	50	1925	1261	1694	-78	21	-5	A	C
SIGUIJ	277	CA BARG	A	50	2	1	0	219	217	290	A	C
ATOM	278	CB AARG	A	50	14.485	-10.854	43.733	0.50	16.52		A	C
ANISOU	278	CB AARG	A	50	2045	1410	2763	76	-144	-3	A	C
SIGUIJ	278	CB AARG	A	50	2	1	0	219	216	290	A	C
ATOM	279	CB BARG	A	50	14.511	-10.863	43.682	0.50	18.71		A	C
ANISOU	279	CB BARG	A	50	2233	1459	2243	166	0	15	A	C
SIGUIJ	279	CB BARG	A	50	2	1	0	220	215	290	A	C
ATOM	280	CG AARG	A	50	14.078	-11.827	44.830	0.50	19.27		A	C
ANISOU	280	CG AARG	A	50	2668	1491	2900	48	68	56	A	C
SIGUIJ	280	CG AARG	A	50	2	1	0	220	214	290	A	C
ATOM	281	CG BARG	A	50	15.776	-10.563	44.436	0.50	21.46		A	C
ANISOU	281	CG BARG	A	50	2299	2636	2258	-105	5	-9	A	C
SIGUIJ	281	CG BARG	A	50	2	1	0	220	213	290	A	C
ATOM	282	CD AARG	A	50	14.453	-11.226	46.145	0.50	21.50		A	C
ANISOU	282	CD AARG	A	50	4009	2861	2974	-1194	251	-214	A	C
SIGUIJ	282	CD AARG	A	50	2	1	0	220	212	290	A	C
ATOM	283	CD BARG	A	50	15.496	-10.244	45.904	0.50	23.69		A	C
ANISOU	283	CD BARG	A	50	1961	2702	2258	-105	-36	-9	A	C
SIGUIJ	283	CD BARG	A	50	2	1	0	220	210	290	A	C
ATOM	284	NE AARG	A	50	14.330	-12.163	47.243	0.50	23.77		A	N
ANISOU	284	NE AARG	A	50	10900	2957	3100	-1335	899	-149	A	N
SIGUIJ	284	NE AARG	A	50	1	0	0	221	64	289	A	N
ATOM	285	NE BARG	A	50	15.178	-11.468	46.633	0.50	25.96		A	N

- 59 -

ANISOU	285	NE BARG	A	50	3268	2753	2278	-366	95	-42	A	N
SIGUIJ	285	NE BARG	A	50	1	0	0	221	64	289	A	N
ATOM	286	CZ AARG	A	50	14.812	-11.933	48.455	0.50	24.33		A	C
ANISOU	286	CZ AARG	A	50	13002	3449	3369	-1870	159	-30	A	C
SIGUIJ	286	CZ AARG	A	50	2	1	0	220	209	290	A	C
ATOM	287	CZ BARG	A	50	14.845	-11.524	47.916	0.50	26.52		A	C
ANISOU	287	CZ BARG	A	50	6401	1896	2492	-303	909	-62	A	C
SIGUIJ	287	CZ BARG	A	50	2	1	0	220	208	290	A	C
ATOM	288	NH1AARG	A	50	15.452	-10.794	48.688	0.50	24.98		A	N
ANISOU	288	NH1AARG	A	50	7444	1672	5139	1342	-320	-124	A	N
SIGUIJ	288	NH1AARG	A	50	1	0	0	221	64	289	A	N
ATOM	289	NH1BARG	A	50	14.778	-10.419	48.644	0.50	27.17		A	N
ANISOU	289	NH1BARG	A	50	2982	1878	2323	88	-2	0	A	N
SIGUIJ	289	NH1BARG	A	50	1	0	0	221	64	289	A	N
ATOM	290	NH2AARG	A	50	14.635	-12.813	49.432	0.50	25.28		A	N
ANISOU	290	NH2AARG	A	50	10903	3280	3376	-1231	350	-56	A	N
SIGUIJ	290	NH2AARG	A	50	1	0	0	221	64	289	A	N
ATOM	291	NH2BARG	A	50	14.585	-12.699	48.471	0.50	27.47		A	N
ANISOU	291	NH2BARG	A	50	5043	1978	2193	-488	-128	21	A	N
SIGUIJ	291	NH2BARG	A	50	1	0	0	221	64	289	A	N
ATOM	292	C AARG	A	50	14.230	-8.472	42.996	0.50	13.60		A	C
ANISOU	292	C AARG	A	50	1610	1207	1674	40	4	-1	A	C
SIGUIJ	292	C AARG	A	50	2	1	0	220	207	290	A	C
ATOM	293	C BARG	A	50	14.234	-8.472	42.995	0.50	15.79		A	C
ANISOU	293	C BARG	A	50	1663	1187	1665	69	0	-8	A	C
SIGUIJ	293	C BARG	A	50	2	1	0	220	207	290	A	C
ATOM	294	O AARG	A	50	15.150	-7.938	43.635	0.50	13.67		A	O
ANISOU	294	O AARG	A	50	1658	1339	1681	-26	1	1	A	O
SIGUIJ	294	O AARG	A	50	1	0	0	221	56	289	A	O
ATOM	295	O BARG	A	50	15.147	-7.928	43.630	0.50	15.86		A	O
ANISOU	295	O BARG	A	50	1742	1370	1670	-36	-9	3	A	O
SIGUIJ	295	O BARG	A	50	1	0	0	221	56	289	A	O
ATOM	296	N TRP	A	51	13.850	-8.067	41.779	1.00	12.29		A	N
ANISOU	296	N TRP	A	51	1505	1152	1666	-23	12	1	A	N
SIGUIJ	296	N TRP	A	51	1	0	0	221	64	289	A	N
ATOM	297	CA TRP	A	51	14.687	-7.155	41.015	1.00	11.48		A	C
ANISOU	297	CA TRP	A	51	1322	1088	1578	80	-57	4	A	C
SIGUIJ	297	CA TRP	A	51	2	1	0	220	206	290	A	C
ATOM	298	CB TRP	A	51	15.438	-7.960	39.942	1.00	11.69		A	C
ANISOU	298	CB TRP	A	51	1512	1196	1650	156	29	-17	A	C
SIGUIJ	298	CB TRP	A	51	2	1	0	220	205	290	A	C
ATOM	299	CG TRP	A	51	16.522	-8.845	40.509	1.00	12.06		A	C
ANISOU	299	CG TRP	A	51	1546	1244	1789	172	-23	4	A	C
SIGUIJ	299	CG TRP	A	51	2	1	0	220	204	290	A	C
ATOM	300	CD2 TRP	A	51	17.836	-8.423	40.881	1.00	12.06		A	C
ANISOU	300	CD2 TRP	A	51	1547	1134	2005	202	-63	2	A	C
SIGUIJ	300	CD2 TRP	A	51	2	1	0	220	203	290	A	C
ATOM	301	CE2 TRP	A	51	18.523	-9.572	41.358	1.00	12.45		A	C
ANISOU	301	CE2 TRP	A	51	1614	1123	2069	211	-80	5	A	C
SIGUIJ	301	CE2 TRP	A	51	2	1	0	220	202	290	A	C
ATOM	302	CE3 TRP	A	51	18.514	-7.191	40.859	1.00	12.45		A	C

- 60 -

ANISOU	302	CE3	TRP	A	51	1580	1160	2082	175	-53	-2	A	C
SIGUIJ	302	CE3	TRP	A	51	2	1	0	220	201	290	A	C
ATOM	303	CD1	TRP	A	51	16.465	-10.197	40.765	1.00	12.45		A	C
ANISOU	303	CD1	TRP	A	51	1555	1255	2117	201	136	36	A	C
SIGUIJ	303	CD1	TRP	A	51	2	1	0	220	200	290	A	C
ATOM	304	NE1	TRP	A	51	17.655	-10.617	41.271	1.00	12.82		A	N
ANISOU	304	NE1	TRP	A	51	1665	1140	2779	176	-147	22	A	N
SIGUIJ	304	NE1	TRP	A	51	1	0	0	221	64	289	A	N
ATOM	305	C22	TRP	A	51	19.835	-9.530	41.785	1.00	12.49		A	C
ANISOU	305	C22	TRP	A	51	1611	1163	2023	200	-56	7	A	C
SIGUIJ	305	C22	TRP	A	51	2	1	0	220	199	290	A	C
ATOM	306	C23	TRP	A	51	19.811	-7.153	41.280	1.00	12.11		A	C
ANISOU	306	C23	TRP	A	51	1560	1152	1987	177	-12	1	A	C
SIGUIJ	306	C23	TRP	A	51	2	1	0	220	198	290	A	C
ATOM	307	CH2	TRP	A	51	20.475	-8.318	41.738	1.00	12.39		A	C
ANISOU	307	CH2	TRP	A	51	1622	1161	2100	192	-45	3	A	C
SIGUIJ	307	CH2	TRP	A	51	2	1	0	220	197	290	A	C
ATOM	308	C	TRP	A	51	13.891	-6.072	40.335	1.00	10.92		A	C
ANISOU	308	C	TRP	A	51	1176	1024	1481	-8	7	0	A	C
SIGUIJ	308	C	TRP	A	51	2	1	0	220	197	290	A	C
ATOM	309	O	TRP	A	51	12.875	-6.331	39.672	1.00	10.75		A	O
ANISOU	309	O	TRP	A	51	1253	1057	1624	-29	-90	2	A	O
SIGUIJ	309	O	TRP	A	51	1	0	0	221	56	289	A	O
ATOM	310	N	VAL	A	52	14.461	-4.863	40.420	1.00	9.93		A	N
ANISOU	310	N	VAL	A	52	1180	1012	1381	3	5	0	A	N
SIGUIJ	310	N	VAL	A	52	1	0	0	221	64	289	A	N
ATOM	311	CA	VAL	A	52	13.946	-3.683	39.687	1.00	10.04		A	C
ANISOU	311	CA	VAL	A	52	1260	1029	1401	35	-8	1	A	C
SIGUIJ	311	CA	VAL	A	52	2	1	0	220	196	290	A	C
ATOM	312	CB	VAL	A	52	13.646	-2.570	40.742	1.00	10.01		A	C
ANISOU	312	CB	VAL	A	52	1267	1028	1421	8	5	0	A	C
SIGUIJ	312	CB	VAL	A	52	2	1	0	220	195	290	A	C
ATOM	313	CG1	VAL	A	52	13.540	-1.174	40.086	1.00	10.49		A	C
ANISOU	313	CG1	VAL	A	52	1519	1027	1429	22	8	1	A	C
SIGUIJ	313	CG1	VAL	A	52	2	1	0	220	194	290	A	C
ATOM	314	CG2	VAL	A	52	12.358	-2.904	41.442	1.00	10.41		A	C
ANISOU	314	CG2	VAL	A	52	1315	1176	1577	-25	66	-2	A	C
SIGUIJ	314	CG2	VAL	A	52	2	1	0	220	193	290	A	C
ATOM	315	C	VAL	A	52	14.986	-3.249	38.695	1.00	9.93		A	C
ANISOU	315	C	VAL	A	52	1213	950	1395	98	-18	3	A	C
SIGUIJ	315	C	VAL	A	52	2	1	0	220	193	290	A	C
ATOM	316	O	VAL	A	52	16.193	-3.210	39.022	1.00	10.38		A	O
ANISOU	316	O	VAL	A	52	1200	1474	1279	89	3	-2	A	O
SIGUIJ	316	O	VAL	A	52	1	0	0	221	56	289	A	O
ATOM	317	N	LEU	A	53	14.537	-2.834	37.532	1.00	9.71		A	N
ANISOU	317	N	LEU	A	53	1220	933	1395	84	-2	0	A	N
SIGUIJ	317	N	LEU	A	53	1	0	0	221	64	289	A	N
ATOM	318	CA	LEU	A	53	15.414	-2.262	36.504	1.00	9.85		A	C
ANISOU	318	CA	LEU	A	53	1255	969	1420	69	14	0	A	C
SIGUIJ	318	CA	LEU	A	53	2	1	0	220	192	290	A	C
ATOM	319	CB	LEU	A	53	15.126	-2.913	35.149	1.00	10.62		A	C

- 61 -

ANISOU	319	CB	LEU	A	53	1407	1063	1430	18	3	-3	A	C
SIGUIJ	319	CB	LEU	A	53	2	1	0	220	191	290	A	C
ATOM	320	CG	LEU	A	53	15.952	-2.426	33.945	1.00	11.41		A	C
ANISOU	320	CG	LEU	A	53	1564	1285	1460	-109	58	-30	A	C
SIGUIJ	320	CG	LEU	A	53	2	1	0	220	190	290	A	C
ATOM	321	CD1	LEU	A	53	17.413	-2.811	34.144	1.00	11.99		A	C
ANISOU	321	CD1	LEU	A	53	1598	1740	1791	0	14	0	A	C
SIGUIJ	321	CD1	LEU	A	53	2	1	0	220	190	290	A	C
ATOM	322	CD2	LEU	A	53	15.368	-3.099	32.683	1.00	12.17		A	C
ANISOU	322	CD2	LEU	A	53	1834	1300	1485	-176	-27	11	A	C
SIGUIJ	322	CD2	LEU	A	53	2	1	0	220	189	290	A	C
ATOM	323	C	LEU	A	53	15.139	-0.749	36.447	1.00	9.78		A	C
ANISOU	323	C	LEU	A	53	1161	957	1161	42	0	0	A	C
SIGUIJ	323	C	LEU	A	53	2	1	0	220	188	290	A	C
ATOM	324	O	LEU	A	53	13.987	-0.283	36.434	1.00	9.80		A	O
ANISOU	324	O	LEU	A	53	1161	1023	1414	59	-19	-2	A	O
SIGUIJ	324	O	LEU	A	53	1	0	0	221	56	289	A	O
ATOM	325	N	THR	A	54	16.206	0.054	36.393	1.00	9.36		A	N
ANISOU	325	N	THR	A	54	1186	980	1366	15	5	0	A	N
SIGUIJ	325	N	THR	A	54	1	0	0	221	64	289	A	N
ATOM	326	CA	THR	A	54	16.127	1.504	36.372	1.00	8.84		A	C
ANISOU	326	CA	THR	A	54	1075	983	1311	1	13	0	A	C
SIGUIJ	326	CA	THR	A	54	2	1	0	220	187	290	A	C
ATOM	327	CB	THR	A	54	16.005	2.003	37.822	1.00	9.07		A	C
ANISOU	327	CB	THR	A	54	1303	1023	1315	63	0	0	A	C
SIGUIJ	327	CB	THR	A	54	2	1	0	220	187	290	A	C
ATOM	328	OG1	THR	A	54	15.735	3.395	37.800	1.00	9.46		A	O
ANISOU	328	OG1	THR	A	54	1233	1021	1316	33	2	0	A	O
SIGUIJ	328	OG1	THR	A	54	1	0	0	221	56	289	A	O
ATOM	329	CG2	THR	A	54	17.246	1.746	38.680	1.00	9.74		A	C
ANISOU	329	CG2	THR	A	54	1317	1192	1327	102	0	2	A	C
SIGUIJ	329	CG2	THR	A	54	2	1	0	220	186	290	A	C
ATOM	330	C	THR	A	54	17.386	2.042	35.672	1.00	8.45		A	C
ANISOU	330	C	THR	A	54	1059	1008	1241	0	-14	0	A	C
SIGUIJ	330	C	THR	A	54	2	1	0	220	185	290	A	C
ATOM	331	O	THR	A	54	18.135	1.279	35.019	1.00	8.67		A	O
ANISOU	331	O	THR	A	54	1116	1041	1232	19	11	0	A	O
SIGUIJ	331	O	THR	A	54	1	0	0	221	56	289	A	O
ATOM	332	N	ALA	A	55	17.617	3.347	35.762	1.00	7.93		A	N
ANISOU	332	N	ALA	A	55	1049	1005	1170	-2	-7	0	A	N
SIGUIJ	332	N	ALA	A	55	1	0	0	221	64	289	A	N
ATOM	333	CA	ALA	A	55	18.795	3.977	35.147	1.00	8.32		A	C
ANISOU	333	CA	ALA	A	55	1069	1011	1176	-7	12	0	A	C
SIGUIJ	333	CA	ALA	A	55	2	1	0	220	185	290	A	C
ATOM	334	CB	ALA	A	55	18.411	5.409	34.690	1.00	8.36		A	C
ANISOU	334	CB	ALA	A	55	1358	1036	1190	63	5	1	A	C
SIGUIJ	334	CB	ALA	A	55	2	1	0	220	184	290	A	C
ATOM	335	C	ALA	A	55	19.957	4.000	36.103	1.00	8.62		A	C
ANISOU	335	C	ALA	A	55	1091	1008	1198	-13	-14	0	A	C
SIGUIJ	335	C	ALA	A	55	2	0	0	220	183	290	A	C
ATOM	336	O	ALA	A	55	19.779	4.158	37.313	1.00	9.17		A	O

- 62 -

ANISOU	336	O	ALA	A	55	1214	1103	1202	-8	0	0	A	O
SIGUIJ	336	O	ALA	A	55	1	0	0	221	56	289	A	O
ATOM	337	N	ALA	A	56	21.161	3.886	35.553	1.00	8.88		A	N
ANISOU	337	N	ALA	A	56	1095	1072	1255	2	0	0	A	N
SIGUIJ	337	N	ALA	A	56	1	0	0	221	64	289	A	N
ATOM	338	CA	ALA	A	56	22.391	4.022	36.349	1.00	9.13		A	C
ANISOU	338	CA	ALA	A	56	1104	1100	1268	0	-8	0	A	C
SIGUIJ	338	CA	ALA	A	56	2	0	0	220	183	290	A	C
ATOM	339	CB	ALA	A	56	23.610	3.713	35.508	1.00	9.18		A	C
ANISOU	339	CB	ALA	A	56	1170	1355	1368	54	68	-18	A	C
SIGUIJ	339	CB	ALA	A	56	2	0	0	220	182	290	A	C
ATOM	340	C	ALA	A	56	22.554	5.400	37.029	1.00	9.29		A	C
ANISOU	340	C	ALA	A	56	1031	1098	1243	-5	28	1	A	C
SIGUIJ	340	C	ALA	A	56	2	0	0	220	181	290	A	C
ATOM	341	O	ALA	A	56	23.143	5.504	38.109	1.00	9.43		A	O
ANISOU	341	O	ALA	A	56	1154	1208	1275	1	-41	0	A	O
SIGUIJ	341	O	ALA	A	56	1	0	0	221	56	289	A	O
ATOM	342	N	HIS	A	57	21.994	6.440	36.418	1.00	9.29		A	N
ANISOU	342	N	HIS	A	57	957	1083	1231	-43	84	18	A	N
SIGUIJ	342	N	HIS	A	57	1	0	0	221	64	289	A	N
ATOM	343	CA	HIS	A	57	22.040	7.794	36.980	1.00	9.88		A	C
ANISOU	343	CA	HIS	A	57	1219	1096	1260	-30	0	0	A	C
SIGUIJ	343	CA	HIS	A	57	2	0	0	220	181	290	A	C
ATOM	344	CB	HIS	A	57	21.411	8.781	35.963	1.00	10.96		A	C
ANISOU	344	CB	HIS	A	57	1419	1251	1271	138	58	39	A	C
SIGUIJ	344	CB	HIS	A	57	2	0	0	220	180	290	A	C
ATOM	345	CG	HIS	A	57	21.862	10.199	36.174	1.00	12.51		A	C
ANISOU	345	CG	HIS	A	57	1737	1288	1898	38	-5	0	A	C
SIGUIJ	345	CG	HIS	A	57	2	0	0	220	179	290	A	C
ATOM	346	CD2	HIS	A	57	22.606	10.741	37.162	1.00	13.42		A	C
ANISOU	346	CD2	HIS	A	57	1862	1514	1884	-127	0	3	A	C
SIGUIJ	346	CD2	HIS	A	57	2	0	0	220	179	290	A	C
ATOM	347	ND1	HIS	A	57	21.560	11.229	35.324	1.00	14.09		A	N
ANISOU	347	ND1	HIS	A	57	2608	1322	1981	155	-147	-10	A	N
SIGUIJ	347	ND1	HIS	A	57	1	0	0	221	64	289	A	N
ATOM	348	CE1	HIS	A	57	22.111	12.339	35.771	1.00	13.23		A	C
ANISOU	348	CE1	HIS	A	57	2744	1480	1458	-159	453	-54	A	C
SIGUIJ	348	CE1	HIS	A	57	2	0	0	220	178	290	A	C
ATOM	349	NE2	HIS	A	57	22.758	12.076	36.880	1.00	14.35		A	N
ANISOU	349	NE2	HIS	A	57	3163	1518	1641	-219	192	-26	A	N
SIGUIJ	349	NE2	HIS	A	57	1	0	0	221	64	289	A	N
ATOM	350	C	HIS	A	57	21.270	7.859	38.294	1.00	9.53		A	C
ANISOU	350	C	HIS	A	57	1189	1089	1252	-5	1	0	A	C
SIGUIJ	350	C	HIS	A	57	2	0	0	220	177	290	A	C
ATOM	351	O	HIS	A	57	21.458	8.814	39.087	1.00	10.26		A	O
ANISOU	351	O	HIS	A	57	1338	1104	1272	-37	1	0	A	O
SIGUIJ	351	O	HIS	A	57	1	0	0	221	56	289	A	O
ATOM	352	N	CYS	A	58	20.425	6.851	38.554	1.00	9.49		A	N
ANISOU	352	N	CYS	A	58	1141	1056	1135	30	0	0	A	N
SIGUIJ	352	N	CYS	A	58	1	0	0	221	64	289	A	N
ATOM	353	CA	CYS	A	58	19.571	6.827	39.746	1.00	9.52		A	C

- 63 -

ANISOU	353	CA	CYS	A	58	1135	1174	1134	1	0	0	A	C
SIGUIJ	353	CA	CYS	A	58	2	0	0	220	177	290	A	C
ATOM	354	C	CYS	A	58	20.272	6.262	40.950	1.00	9.45		A	C
ANISOU	354	C	CYS	A	58	1145	1141	1148	0	0	0	A	C
SIGUIJ	354	C	CYS	A	58	2	0	0	220	176	290	A	C
ATOM	355	O	CYS	A	58	19.644	6.126	42.034	1.00	9.93		A	O
ANISOU	355	O	CYS	A	58	1175	1346	1160	-85	0	-2	A	O
SIGUIJ	355	O	CYS	A	58	1	0	0	221	56	289	A	O
ATOM	356	CB	CYS	A	58	18.255	6.019	39.504	1.00	9.74		A	C
ANISOU	356	CB	CYS	A	58	1142	1223	1171	-10	-1	0	A	C
SIGUIJ	356	CB	CYS	A	58	2	0	0	220	176	290	A	C
ATOM	357	SG	CYS	A	58	17.343	6.738	38.109	1.00	10.15		A	S
ANISOU	357	SG	CYS	A	58	1255	1365	1167	73	-21	-8	A	S
SIGUIJ	357	SG	CYS	A	58	1	0	0	221	49	289	A	S
ATOM	358	N	LYS	A	59	21.545	5.879	40.830	1.00	9.63		A	N
ANISOU	358	N	LYS	A	59	1153	1158	1143	0	0	0	A	N
SIGUIJ	358	N	LYS	A	59	1	0	0	221	64	289	A	N
ATOM	359	CA	LYS	A	59	22.295	5.248	41.932	1.00	10.30		A	C
ANISOU	359	CA	LYS	A	59	1207	1213	1158	0	-5	0	A	C
SIGUIJ	359	CA	LYS	A	59	2	0	0	220	175	290	A	C
ATOM	360	CB	LYS	A	59	23.780	5.188	41.566	1.00	10.96		A	C
ANISOU	360	CB	LYS	A	59	1230	1351	1404	13	59	-5	A	C
SIGUIJ	360	CB	LYS	A	59	2	0	0	220	174	290	A	C
ATOM	361	CG	LYS	A	59	24.660	4.440	42.551	1.00	11.83		A	C
ANISOU	361	CG	LYS	A	59	1373	1413	1556	26	-75	22	A	C
SIGUIJ	361	CG	LYS	A	59	2	0	0	220	174	290	A	C
ATOM	362	CD	LYS	A	59	24.533	2.938	42.481	1.00	12.32		A	C
ANISOU	362	CD	LYS	A	59	1496	1416	1989	5	-20	0	A	C
SIGUIJ	362	CD	LYS	A	59	2	0	0	220	173	290	A	C
ATOM	363	CE	LYS	A	59	25.438	2.259	43.495	1.00	13.78		A	C
ANISOU	363	CE	LYS	A	59	1943	1448	2351	32	-400	22	A	C
SIGUIJ	363	CE	LYS	A	59	2	0	0	220	173	290	A	C
ATOM	364	NZ	LYS	A	59	25.395	0.771	43.306	1.00	14.23		A	N
ANISOU	364	NZ	LYS	A	59	1869	1446	2495	2	-88	-1	A	N
SIGUIJ	364	NZ	LYS	A	59	1	0	0	221	64	289	A	N
ATOM	365	C	LYS	A	59	22.162	5.994	43.235	1.00	10.26		A	C
ANISOU	365	C	LYS	A	59	1250	1239	1163	0	-3	0	A	C
SIGUIJ	365	C	LYS	A	59	2	0	0	220	172	290	A	C
ATOM	366	O	LYS	A	59	22.388	7.236	43.300	1.00	10.37		A	O
ANISOU	366	O	LYS	A	59	1272	1239	1294	-6	0	0	A	O
SIGUIJ	366	O	LYS	A	59	1	0	0	221	56	289	A	O
ATOM	367	N	MET	A	60	21.881	5.232	44.286	1.00	10.70		A	N
ANISOU	367	N	MET	A	60	1336	1275	1175	-9	-15	2	A	N
SIGUIJ	367	N	MET	A	60	1	0	0	221	64	289	A	N
ATOM	368	CA	MET	A	60	21.897	5.745	45.657	1.00	11.34		A	C
ANISOU	368	CA	MET	A	60	1248	1409	1190	-70	5	-4	A	C
SIGUIJ	368	CA	MET	A	60	2	0	0	220	172	290	A	C
ATOM	369	CB	MET	A	60	20.485	6.153	46.160	1.00	11.40		A	C
ANISOU	369	CB	MET	A	60	1260	1508	1141	-54	5	-1	A	C
SIGUIJ	369	CB	MET	A	60	2	0	0	220	171	290	A	C
ATOM	370	CG	MET	A	60	19.864	7.316	45.370	1.00	11.47		A	C

- 64 -

ANISOU	370	CG	MET	A	60	1539	1552	1210	0	-88	1	A	C
SIGUIJ	370	CG	MET	A	60	2	0	0	220	170	290	A	C
ATOM	371	SD	MET	A	60	18.429	8.017	46.154	1.00	12.13		A	S
ANISOU	371	SD	MET	A	60	1617	1619	1416	0	32	-4	A	S
SIGUIJ	371	SD	MET	A	60	1	0	0	221	49	289	A	S
ATOM	372	CE	MET	A	60	17.335	6.674	45.953	1.00	12.68		A	C
ANISOU	372	CE	MET	A	60	1631	1618	1685	0	-1	0	A	C
SIGUIJ	372	CE	MET	A	60	2	0	0	220	170	290	A	C
ATOM	373	C	MET	A	60	22.473	4.642	46.538	1.00	11.97		A	C
ANISOU	373	C	MET	A	60	1349	1454	1244	-22	-15	1	A	C
SIGUIJ	373	C	MET	A	60	2	0	0	220	169	290	A	C
ATOM	374	O	MET	A	60	22.558	3.468	46.135	1.00	11.95		A	O
ANISOU	374	O	MET	A	60	1622	1458	1361	6	-42	-1	A	O
SIGUIJ	374	O	MET	A	60	1	0	0	221	56	289	A	O
ATOM	375	N	ASN	A	61	22.845	5.046	47.770	1.00	12.35		A	N
ANISOU	375	N	ASN	A	61	1484	1681	1245	-258	9	-7	A	N
SIGUIJ	375	N	ASN	A	61	1	0	0	221	64	289	A	N
ATOM	376	CA	ASN	A	61	23.360	4.027	48.734	1.00	13.41		A	C
ANISOU	376	CA	ASN	A	61	1617	1771	1319	-213	-53	15	A	C
SIGUIJ	376	CA	ASN	A	61	2	0	0	220	169	290	A	C
ATOM	377	CB	ASN	A	61	23.892	4.694	50.038	1.00	14.86		A	C
ANISOU	377	CB	ASN	A	61	3266	1779	1457	-502	-580	159	A	C
SIGUIJ	377	CB	ASN	A	61	2	0	0	220	168	290	A	C
ATOM	378	CG	ASN	A	61	22.813	5.445	50.823	1.00	16.38		A	C
ANISOU	378	CG	ASN	A	61	3335	1441	1982	-792	-221	101	A	C
SIGUIJ	378	CG	ASN	A	61	2	0	0	220	168	290	A	C
ATOM	379	OD1	ASN	A	61	22.045	6.213	50.270	1.00	18.80		A	O
ANISOU	379	OD1	ASN	A	61	4072	2068	1933	-106	-272	14	A	O
SIGUIJ	379	OD1	ASN	A	61	1	0	0	221	56	289	A	O
ATOM	380	ND2	ASN	A	61	22.736	5.213	52.150	1.00	16.96		A	N
ANISOU	380	ND2	ASN	A	61	3563	3835	2029	-1706	-396	422	A	N
SIGUIJ	380	ND2	ASN	A	61	1	0	0	221	64	289	A	N
ATOM	381	C	ASN	A	61	22.285	3.003	49.077	1.00	13.01		A	C
ANISOU	381	C	ASN	A	61	1424	1571	1372	-3	-7	0	A	C
SIGUIJ	381	C	ASN	A	61	2	0	0	220	167	290	A	C
ATOM	382	O	ASN	A	61	22.608	1.872	49.349	1.00	13.50		A	O
ANISOU	382	O	ASN	A	61	1675	1609	1932	9	-255	91	A	O
SIGUIJ	382	O	ASN	A	61	1	0	0	221	56	289	A	O
ATOM	383	N	GLU	A	63	21.023	3.431	49.090	1.00	12.53		A	N
ANISOU	383	N	GLU	A	63	1385	1471	1537	-62	-3	-1	A	N
SIGUIJ	383	N	GLU	A	63	1	0	0	221	63	289	A	N
ATOM	384	CA	GLU	A	63	19.913	2.513	49.306	1.00	12.71		A	C
ANISOU	384	CA	GLU	A	63	1326	1471	1544	-29	-20	-3	A	C
SIGUIJ	384	CA	GLU	A	63	2	0	0	220	167	290	A	C
ATOM	385	CB	GLU	A	63	19.736	2.165	50.795	1.00	14.43		A	C
ANISOU	385	CB	GLU	A	63	2200	1709	1562	-81	64	-8	A	C
SIGUIJ	385	CB	GLU	A	63	2	0	0	220	166	290	A	C
ATOM	386	CG	GLU	A	63	19.298	3.358	51.617	1.00	16.54		A	C
ANISOU	386	CG	GLU	A	63	2343	1765	1556	27	-22	-1	A	C
SIGUIJ	386	CG	GLU	A	63	2	0	0	220	166	290	A	C
ATOM	387	CD	GLU	A	63	19.201	3.109	53.132	1.00	18.20		A	C

- 65 -

ANISOU	387	CD	GLU	A	63	2750	3194	1587	-794	-150	148	A	C
SIGUIJ	387	CD	GLU	A	63	2	0	0	220	165	290	A	C
ATOM	388	OE1	GLU	A	63	19.523	1.977	53.567	1.00	19.99		A	O
ANISOU	388	OE1	GLU	A	63	4498	3286	1741	-416	-449	110	A	O
SIGUIJ	388	OE1	GLU	A	63	1	0	0	221	56	289	A	O
ATOM	389	OE2	GLU	A	63	18.818	4.060	53.865	1.00	19.97		A	O
ANISOU	389	OE2	GLU	A	63	4058	3563	1631	-98	-368	37	A	O
SIGUIJ	389	OE2	GLU	A	63	1	0	0	221	56	289	A	O
ATOM	390	C	GLU	A	63	18.664	3.191	48.763	1.00	12.29		A	C
ANISOU	390	C	GLU	A	63	1309	1487	1482	-25	-4	-1	A	C
SIGUIJ	390	C	GLU	A	63	2	0	0	220	165	290	A	C
ATOM	391	O	GLU	A	63	18.691	4.408	48.431	1.00	11.91		A	O
ANISOU	391	O	GLU	A	63	1594	1484	1449	-48	-8	3	A	O
SIGUIJ	391	O	GLU	A	63	1	0	0	221	56	289	A	O
ATOM	392	N	TYR	A	64	17.566	2.423	48.707	1.00	11.40		A	N
ANISOU	392	N	TYR	A	64	1302	1504	1269	-33	0	0	A	N
SIGUIJ	392	N	TYR	A	64	1	0	0	221	63	289	A	N
ATOM	393	CA	TYR	A	64	16.342	2.920	48.090	1.00	11.01		A	C
ANISOU	393	CA	TYR	A	64	1304	1529	1246	-17	2	0	A	C
SIGUIJ	393	CA	TYR	A	64	2	0	0	220	164	290	A	C
ATOM	394	CB	TYR	A	64	16.171	2.369	46.649	1.00	11.12		A	C
ANISOU	394	CB	TYR	A	64	1399	1577	1236	-31	12	0	A	C
SIGUIJ	394	CB	TYR	A	64	2	0	0	220	164	290	A	C
ATOM	395	CG	TYR	A	64	17.429	2.395	45.795	1.00	10.88		A	C
ANISOU	395	CG	TYR	A	64	1406	1299	1206	-27	9	-2	A	C
SIGUIJ	395	CG	TYR	A	64	2	0	0	220	163	290	A	C
ATOM	396	CD1	TYR	A	64	17.623	3.388	44.817	1.00	10.36		A	C
ANISOU	396	CD1	TYR	A	64	1236	1307	1181	-10	-2	0	A	C
SIGUIJ	396	CD1	TYR	A	64	2	0	0	220	163	290	A	C
ATOM	397	CE1	TYR	A	64	18.785	3.425	44.042	1.00	11.12		A	C
ANISOU	397	CE1	TYR	A	64	1251	1400	1198	-52	3	-1	A	C
SIGUIJ	397	CE1	TYR	A	64	2	0	0	220	162	290	A	C
ATOM	398	CD2	TYR	A	64	18.418	1.456	45.983	1.00	10.39		A	C
ANISOU	398	CD2	TYR	A	64	1401	1279	1269	-37	18	-5	A	C
SIGUIJ	398	CD2	TYR	A	64	2	0	0	220	162	290	A	C
ATOM	399	CE2	TYR	A	64	19.572	1.461	45.226	1.00	11.07		A	C
ANISOU	399	CE2	TYR	A	64	1382	1442	1213	-5	-6	0	A	C
SIGUIJ	399	CE2	TYR	A	64	2	0	0	220	161	290	A	C
ATOM	400	CZ	TYR	A	64	19.744	2.465	44.251	1.00	10.47		A	C
ANISOU	400	CZ	TYR	A	64	1314	1434	1196	-10	-10	0	A	C
SIGUIJ	400	CZ	TYR	A	64	2	0	0	220	161	290	A	C
ATOM	401	OH	TYR	A	64	20.920	2.531	43.518	1.00	10.97		A	O
ANISOU	401	OH	TYR	A	64	1338	1250	1217	-13	11	-1	A	O
SIGUIJ	401	OH	TYR	A	64	1	0	0	221	56	289	A	O
ATOM	402	C	TYR	A	64	15.140	2.452	48.882	1.00	10.76		A	C
ANISOU	402	C	TYR	A	64	1295	1450	1252	-5	1	0	A	C
SIGUIJ	402	C	TYR	A	64	2	0	0	220	161	290	A	C
ATOM	403	O	TYR	A	64	15.215	1.388	49.500	1.00	11.00		A	O
ANISOU	403	O	TYR	A	64	1447	1447	1285	0	5	0	A	O
SIGUIJ	403	O	TYR	A	64	1	0	0	221	56	289	A	O
ATOM	404	N	THR	A	65	14.050	3.184	48.808	1.00	10.90		A	N

- 66 -

ANISOU	404	N	THR	A	65	1263	1414	1312	-42	2	1	A	N
SIGUIJ	404	N	THR	A	65	1	0	0	221	63	289	A	N
ATOM	405	CA	THR	A	65	12.729	2.613	49.160	1.00	10.94		A	C
ANISOU	405	CA	THR	A	65	1275	1602	1189	-104	-15	10	A	C
SIGUIJ	405	CA	THR	A	65	2	0	0	220	160	290	A	C
ATOM	406	CB	THR	A	65	12.010	3.507	50.169	1.00	11.44		A	C
ANISOU	406	CB	THR	A	65	1538	1758	1222	54	28	-1	A	C
SIGUIJ	406	CB	THR	A	65	2	0	0	220	160	290	A	C
ATOM	407	CG1	THR	A	65	12.804	3.542	51.378	1.00	12.76		A	O
ANISOU	407	OG1	THR	A	65	1686	2183	1274	26	-63	-3	A	O
SIGUIJ	407	OG1	THR	A	65	1	0	0	221	56	289	A	O
ATOM	408	CG2	THR	A	65	10.601	2.977	50.484	1.00	12.54		A	C
ANISOU	408	CG2	THR	A	65	1620	2247	1409	-129	71	-9	A	C
SIGUIJ	408	CG2	THR	A	65	2	0	0	220	159	290	A	C
ATOM	409	C	THR	A	65	11.968	2.489	47.860	1.00	10.48		A	C
ANISOU	409	C	THR	A	65	1234	1247	1178	1	4	0	A	C
SIGUIJ	409	C	THR	A	65	2	0	0	220	159	290	A	C
ATOM	410	O	THR	A	65	11.754	3.485	47.143	1.00	10.45		A	O
ANISOU	410	O	THR	A	65	1626	1261	1260	-28	-151	11	A	O
SIGUIJ	410	O	THR	A	65	1	0	0	221	56	289	A	O
ATOM	411	N	VAL	A	66	11.531	1.285	47.556	1.00	10.31		A	N
ANISOU	411	N	VAL	A	66	1269	1245	1202	-1	5	0	A	N
SIGUIJ	411	N	VAL	A	66	1	0	0	221	63	289	A	N
ATOM	412	CA	VAL	A	66	10.826	1.050	46.318	1.00	10.41		A	C
ANISOU	412	CA	VAL	A	66	1283	1255	1218	0	0	0	A	C
SIGUIJ	412	CA	VAL	A	66	2	0	0	220	158	290	A	C
ATOM	413	CB	VAL	A	66	11.278	-0.305	45.707	1.00	10.27		A	C
ANISOU	413	CB	VAL	A	66	1308	1252	1283	4	2	0	A	C
SIGUIJ	413	CB	VAL	A	66	2	0	0	220	158	290	A	C
ATOM	414	CG1	VAL	A	66	10.536	-0.512	44.365	1.00	11.03		A	C
ANISOU	414	CG1	VAL	A	66	1336	1294	1294	-1	-2	0	A	C
SIGUIJ	414	CG1	VAL	A	66	2	0	0	220	157	290	A	C
ATOM	415	CG2	VAL	A	66	12.791	-0.328	45.524	1.00	11.29		A	C
ANISOU	415	CG2	VAL	A	66	1317	1501	2141	14	95	-6	A	C
SIGUIJ	415	CG2	VAL	A	66	2	0	0	220	157	290	A	C
ATOM	416	C	VAL	A	66	9.323	1.056	46.549	1.00	10.46		A	C
ANISOU	416	C	VAL	A	66	1281	1388	1207	29	-3	0	A	C
SIGUIJ	416	C	VAL	A	66	2	0	0	220	157	290	A	C
ATOM	417	O	VAL	A	66	8.809	0.338	47.437	1.00	10.81		A	O
ANISOU	417	O	VAL	A	66	1451	1425	1233	4	54	6	A	O
SIGUIJ	417	O	VAL	A	66	1	0	0	221	56	289	A	O
ATOM	418	N	HIS	A	67	8.607	1.884	45.793	1.00	10.18		A	N
ANISOU	418	N	HIS	A	67	1194	1341	1212	-9	0	0	A	N
SIGUIJ	418	N	HIS	A	67	1	0	0	221	63	289	A	N
ATOM	419	CA	HIS	A	67	7.143	1.919	45.767	1.00	10.17		A	C
ANISOU	419	CA	HIS	A	67	1196	1244	1298	-1	-5	0	A	C
SIGUIJ	419	CA	HIS	A	67	2	0	0	220	156	290	A	C
ATOM	420	CB	HIS	A	67	6.708	3.371	45.496	1.00	10.26		A	C
ANISOU	420	CB	HIS	A	67	1232	1246	1435	0	2	0	A	C
SIGUIJ	420	CB	HIS	A	67	2	0	0	220	156	290	A	C
ATOM	421	CG	HIS	A	67	5.308	3.503	44.984	1.00	10.76		A	C

- 67 -

ANISOU	421	CG	HIS	A	67	1245	1194	1533	-2	-28	1	A	C
SIGUIJ	421	CG	HIS	A	67	2	0	0	220	155	290	A	C
ATOM	422	CD2	HIS	A	67	4.768	3.234	43.783	1.00	10.31		A	C
ANISOU	422	CD2	HIS	A	67	1216	1250	1538	-1	-17	0	A	C
SIGUIJ	422	CD2	HIS	A	67	2	0	0	220	155	290	A	C
ATOM	423	ND1	HIS	A	67	4.294	4.012	45.769	1.00	11.12		A	N
ANISOU	423	ND1	HIS	A	67	1360	1233	1686	3	107	3	A	N
SIGUIJ	423	ND1	HIS	A	67	1	0	0	221	63	289	A	N
ATOM	424	CE1	HIS	A	67	3.182	4.034	45.061	1.00	10.85		A	C
ANISOU	424	CE1	HIS	A	67	1383	1465	1735	17	71	-9	A	C
SIGUIJ	424	CE1	HIS	A	67	2	0	0	220	155	290	A	C
ATOM	425	NE2	HIS	A	67	3.436	3.561	43.858	1.00	10.92		A	N
ANISOU	425	NE2	HIS	A	67	1229	1417	1718	61	2	0	A	N
SIGUIJ	425	NE2	HIS	A	67	1	0	0	221	63	289	A	N
ATOM	426	C	HIS	A	67	6.627	1.015	44.664	1.00	10.07		A	C
ANISOU	426	C	HIS	A	67	1158	1224	1269	1	3	0	A	C
SIGUIJ	426	C	HIS	A	67	2	0	0	220	154	290	A	C
ATOM	427	O	HIS	A	67	7.046	1.167	43.504	1.00	10.01		A	O
ANISOU	427	O	HIS	A	67	1205	1245	1268	0	7	0	A	O
SIGUIJ	427	O	HIS	A	67	1	0	0	221	56	289	A	O
ATOM	428	N	LEU	A	68	5.689	0.115	45.004	1.00	9.85		A	N
ANISOU	428	N	LEU	A	68	1174	1220	1400	0	48	0	A	N
SIGUIJ	428	N	LEU	A	68	1	0	0	221	63	289	A	N
ATOM	429	CA	LEU	A	68	5.041	-0.761	44.009	1.00	10.06		A	C
ANISOU	429	CA	LEU	A	68	1254	1218	1423	-5	8	0	A	C
SIGUIJ	429	CA	LEU	A	68	2	0	0	220	154	290	A	C
ATOM	430	CB	LEU	A	68	5.539	-2.229	44.129	1.00	11.11		A	C
ANISOU	430	CB	LEU	A	68	1414	1239	1632	55	-12	0	A	C
SIGUIJ	430	CB	LEU	A	68	2	0	0	220	153	290	A	C
ATOM	431	CG	LEU	A	68	7.056	-2.399	44.241	1.00	10.33		A	C
ANISOU	431	CG	LEU	A	68	1408	1250	1460	60	1	-1	A	C
SIGUIJ	431	CG	LEU	A	68	2	0	0	220	153	290	A	C
ATOM	432	CD1	LEU	A	68	7.481	-2.431	45.695	1.00	11.37		A	C
ANISOU	432	CD1	LEU	A	68	1457	1613	1458	-5	0	0	A	C
SIGUIJ	432	CD1	LEU	A	68	2	0	0	220	153	290	A	C
ATOM	433	CD2	LEU	A	68	7.459	-3.723	43.526	1.00	11.32		A	C
ANISOU	433	CD2	LEU	A	68	1607	1255	1485	112	4	2	A	C
SIGUIJ	433	CD2	LEU	A	68	2	0	0	220	152	290	A	C
ATOM	434	C	LEU	A	68	3.539	-0.772	44.264	1.00	10.57		A	C
ANISOU	434	C	LEU	A	68	1264	1284	1304	0	-2	0	A	C
SIGUIJ	434	C	LEU	A	68	2	0	0	220	152	290	A	C
ATOM	435	O	LEU	A	68	3.091	-0.494	45.394	1.00	10.51		A	O
ANISOU	435	O	LEU	A	68	1309	1276	1306	3	0	0	A	O
SIGUIJ	435	O	LEU	A	68	1	0	0	221	56	289	A	O
ATOM	436	N	GLY	A	69	2.783	-1.092	43.229	1.00	10.50		A	N
ANISOU	436	N	GLY	A	69	1270	1244	1298	0	0	0	A	N
SIGUIJ	436	N	GLY	A	69	1	0	0	221	63	289	A	N
ATOM	437	CA	GLY	A	69	1.403	-1.483	43.461	1.00	10.99		A	C
ANISOU	437	CA	GLY	A	69	1293	1231	1709	0	86	1	A	C
SIGUIJ	437	CA	GLY	A	69	1	0	0	220	151	290	A	C
ATOM	438	C	GLY	A	69	0.398	-0.368	43.576	1.00	11.51		A	C

- 68 -

ANISOU	438	C	GLY	A	69	1328	1234	1649	2	110	4	A	C
SIGUIJ	438	C	GLY	A	69	1	0	0	220	151	290	A	C
ATOM	439	O	GLY	A	69	-0.713	-0.611	44.076	1.00	12.48		A	O
ANISOU	439	O	GLY	A	69	1428	1370	2142	27	322	166	A	O
SIGUIJ	439	O	GLY	A	69	1	0	0	221	56	289	A	O
ATOM	440	N	SER	A	70	0.747	0.848	43.134	1.00	11.57		A	N
ANISOU	440	N	SER	A	70	1235	1236	1574	0	24	0	A	N
SIGUIJ	440	N	SER	A	70	1	0	0	221	63	289	A	N
ATOM	441	CA	SER	A	70	-0.237	1.925	43.056	1.00	11.55		A	C
ANISOU	441	CA	SER	A	70	1239	1251	1429	0	21	0	A	C
SIGUIJ	441	CA	SER	A	70	1	0	0	220	151	290	A	C
ATOM	442	CB	SER	A	70	-0.441	2.619	44.423	1.00	11.96		A	C
ANISOU	442	CB	SER	A	70	1738	1285	1450	-46	94	-11	A	C
SIGUIJ	442	CB	SER	A	70	1	0	0	220	150	290	A	C
ATOM	443	OG	SER	A	70	-1.443	3.618	44.270	1.00	12.98		A	O
ANISOU	443	OG	SER	A	70	1764	1288	1593	-48	22	-4	A	O
SIGUIJ	443	OG	SER	A	70	1	0	0	221	56	289	A	O
ATOM	444	C	SER	A	70	0.204	2.965	42.058	1.00	11.53		A	C
ANISOU	444	C	SER	A	70	1228	1259	1420	3	43	-2	A	C
SIGUIJ	444	C	SER	A	70	1	0	0	220	150	290	A	C
ATOM	445	O	SER	A	70	1.350	3.343	41.990	1.00	11.37		A	O
ANISOU	445	O	SER	A	70	1239	1366	1663	-21	49	5	A	O
SIGUIJ	445	O	SER	A	70	1	0	0	221	56	289	A	O
ATOM	446	N	ASP	A	71	-0.770	3.521	41.354	1.00	11.71		A	N
ANISOU	446	N	ASP	A	71	1281	1265	1534	0	-31	0	A	N
SIGUIJ	446	N	ASP	A	71	1	0	0	221	63	289	A	N
ATOM	447	CA	ASP	A	71	-0.489	4.711	40.534	1.00	12.03		A	C
ANISOU	447	CA	ASP	A	71	1427	1275	1596	9	48	6	A	C
SIGUIJ	447	CA	ASP	A	71	1	0	0	220	150	290	A	C
ATOM	448	CB	ASP	A	71	-1.604	4.894	39.509	1.00	13.40		A	C
ANISOU	448	CB	ASP	A	71	1546	1920	1725	110	-53	22	A	C
SIGUIJ	448	CB	ASP	A	71	1	0	0	220	149	290	A	C
ATOM	449	CG	ASP	A	71	-1.791	3.679	38.665	1.00	14.52		A	C
ANISOU	449	CG	ASP	A	71	1903	1952	1767	18	12	-1	A	C
SIGUIJ	449	CG	ASP	A	71	1	0	0	220	149	290	A	C
ATOM	450	OD1	ASP	A	71	-0.769	3.147	38.164	1.00	14.88		A	O
ANISOU	450	OD1	ASP	A	71	1891	1928	1789	-5	18	1	A	O
SIGUIJ	450	OD1	ASP	A	71	1	0	0	221	56	289	A	O
ATOM	451	OD2	ASP	A	71	-2.933	3.147	38.541	1.00	16.44		A	O
ANISOU	451	OD2	ASP	A	71	2055	2638	2741	-297	-69	-29	A	O
SIGUIJ	451	OD2	ASP	A	71	1	0	0	221	56	289	A	O
ATOM	452	C	ASP	A	71	-0.334	5.983	41.366	1.00	12.00		A	C
ANISOU	452	C	ASP	A	71	1593	1286	1589	18	0	0	A	C
SIGUIJ	452	C	ASP	A	71	1	0	0	220	148	290	A	C
ATOM	453	O	ASP	A	71	0.092	7.014	40.822	1.00	11.57		A	O
ANISOU	453	O	ASP	A	71	1416	1223	1748	205	222	23	A	O
SIGUIJ	453	O	ASP	A	71	1	0	0	221	56	289	A	O
ATOM	454	N	THR	A	72	-0.589	5.932	42.678	1.00	11.84		A	N
ANISOU	454	N	THR	A	72	1627	1334	1591	167	1	2	A	N
SIGUIJ	454	N	THR	A	72	1	0	0	221	63	289	A	N
ATOM	455	CA	THR	A	72	-0.466	7.136	43.527	1.00	11.99		A	C

- 69 -

ANISOU	455	CA	THR	A	72	1268	1356	1575	-7	322	0	A	C
SIGUIJ	455	CA	THR	A	72	1	0	0	220	148	290	A	C
ATOM	456	CB	THR	A	72	-1.802	7.379	44.280	1.00	12.04		A	C
ANISOU	456	CB	THR	A	72	1289	1617	1621	29	345	-17	A	C
SIGUIJ	456	CB	THR	A	72	1	0	0	220	148	290	A	C
ATOM	457	OG1	THR	A	72	-2.851	7.509	43.306	1.00	12.69		A	O
ANISOU	457	OG1	THR	A	72	1472	1832	1826	116	159	-45	A	O
SIGUIJ	457	OG1	THR	A	72	1	0	0	221	56	289	A	O
ATOM	458	CG2	THR	A	72	-1.690	8.607	45.139	1.00	12.47		A	C
ANISOU	458	CG2	THR	A	72	1869	1575	1577	163	78	38	A	C
SIGUIJ	458	CG2	THR	A	72	1	0	0	220	147	290	A	C
ATOM	459	C	THR	A	72	0.680	6.999	44.523	1.00	12.26		A	C
ANISOU	459	C	THR	A	72	1391	1326	1778	0	167	-1	A	C
SIGUIJ	459	C	THR	A	72	1	0	0	220	147	290	A	C
ATOM	460	O	THR	A	72	0.670	6.113	45.375	1.00	12.26		A	O
ANISOU	460	O	THR	A	72	1528	1340	1812	14	190	14	A	O
SIGUIJ	460	O	THR	A	72	1	0	0	221	56	289	A	O
ATOM	461	N	LEU	A	73	1.680	7.883	44.462	1.00	12.60		A	N
ANISOU	461	N	LEU	A	73	1402	1339	1916	-10	225	-38	A	N
SIGUIJ	461	N	LEU	A	73	1	0	0	221	63	289	A	N
ATOM	462	CA	LEU	A	73	2.735	7.884	45.504	1.00	13.57		A	C
ANISOU	462	CA	LEU	A	73	1418	1628	1928	-59	214	36	A	C
SIGUIJ	462	CA	LEU	A	73	1	0	0	220	147	290	A	C
ATOM	463	CB	LEU	A	73	3.846	8.880	45.130	1.00	14.14		A	C
ANISOU	463	CB	LEU	A	73	1465	1597	2415	-28	407	22	A	C
SIGUIJ	463	CB	LEU	A	73	1	0	0	220	146	290	A	C
ATOM	464	CG	LEU	A	73	4.664	8.540	43.867	1.00	13.84		A	C
ANISOU	464	CG	LEU	A	73	1301	1722	2343	0	289	3	A	C
SIGUIJ	464	CG	LEU	A	73	1	0	0	220	146	290	A	C
ATOM	465	CD1	LEU	A	73	5.730	9.650	43.616	1.00	14.45		A	C
ANISOU	465	CD1	LEU	A	73	1792	2224	2208	-505	131	111	A	C
SIGUIJ	465	CD1	LEU	A	73	1	0	0	220	146	290	A	C
ATOM	466	CD2	LEU	A	73	5.275	7.165	43.926	1.00	13.66		A	C
ANISOU	466	CD2	LEU	A	73	1572	1774	1998	116	193	-65	A	C
SIGUIJ	466	CD2	LEU	A	73	1	0	0	220	145	290	A	C
ATOM	467	C	LEU	A	73	2.146	8.248	46.864	1.00	14.07		A	C
ANISOU	467	C	LEU	A	73	1415	1764	1928	-28	196	10	A	C
SIGUIJ	467	C	LEU	A	73	1	0	0	220	145	290	A	C
ATOM	468	O	LEU	A	73	1.291	9.145	46.949	1.00	14.84		A	O
ANISOU	468	O	LEU	A	73	1604	1916	2178	129	180	-51	A	O
SIGUIJ	468	O	LEU	A	73	1	0	0	221	56	289	A	O
ATOM	469	N	GLY	A	76	2.573	7.558	47.894	1.00	14.43		A	N
ANISOU	469	N	GLY	A	76	1813	1793	1988	0	31	0	A	N
SIGUIJ	469	N	GLY	A	76	1	0	0	221	63	289	A	N
ATOM	470	CA	GLY	A	76	2.029	7.757	49.227	1.00	14.66		A	C
ANISOU	470	CA	GLY	A	76	1744	1834	1985	-30	8	2	A	C
SIGUIJ	470	CA	GLY	A	76	1	0	0	220	145	290	A	C
ATOM	471	C	GLY	A	76	0.747	6.990	49.509	1.00	14.25		A	C
ANISOU	471	C	GLY	A	76	1721	1756	1856	-5	-26	-3	A	C
SIGUIJ	471	C	GLY	A	76	1	0	0	220	144	290	A	C
ATOM	472	O	GLY	A	76	0.269	7.028	50.633	1.00	14.94		A	O

- 70 -

ANISOU	472	O	GLY	A	76	1824	2245	1875	36	13	-5	A	O
SIGUIJ	472	O	GLY	A	76	1	0	0	221	56	289	A	O
ATOM	473	N	ASP	A	77	0.159	6.340	48.523	1.00	13.69		A	N
ANISOU	473	N	ASP	A	77	1317	1637	1787	112	135	-36	A	N
SIGUIJ	473	N	ASP	A	77	1	0	0	221	63	289	A	N
ATOM	474	CA	ASP	A	77	-1.065	5.558	48.748	1.00	13.68		A	C
ANISOU	474	CA	ASP	A	77	1253	1499	1497	188	60	-38	A	C
SIGUIJ	474	CA	ASP	A	77	1	0	0	220	144	290	A	C
ATOM	475	CB	ASP	A	77	-1.328	4.788	47.449	1.00	13.39		A	C
ANISOU	475	CB	ASP	A	77	1275	1491	1499	144	77	-42	A	C
SIGUIJ	475	CB	ASP	A	77	1	0	0	220	144	290	A	C
ATOM	476	CG	ASP	A	77	-2.624	3.983	47.429	1.00	13.49		A	C
ANISOU	476	CG	ASP	A	77	1298	1594	1652	81	69	-17	A	C
SIGUIJ	476	CG	ASP	A	77	1	0	0	220	143	290	A	C
ATOM	477	OD1	ASP	A	77	-3.249	3.763	48.497	1.00	13.62		A	O
ANISOU	477	OD1	ASP	A	77	1608	1673	1756	27	252	-26	A	O
SIGUIJ	477	OD1	ASP	A	77	1	0	0	221	56	289	A	O
ATOM	478	OD2	ASP	A	77	-3.016	3.557	46.318	1.00	14.34		A	O
ANISOU	478	OD2	ASP	A	77	1858	1927	1673	-312	-4	14	A	O
SIGUIJ	478	OD2	ASP	A	77	1	0	0	221	56	289	A	O
ATOM	479	C	ASP	A	77	-0.798	4.565	49.902	1.00	14.30		A	C
ANISOU	479	C	ASP	A	77	1373	1544	1509	164	23	-19	A	C
SIGUIJ	479	C	ASP	A	77	1	0	0	220	143	290	A	C
ATOM	480	O	ASP	A	77	0.222	3.792	49.856	1.00	14.35		A	O
ANISOU	480	O	ASP	A	77	1562	1823	1918	397	35	-31	A	O
SIGUIJ	480	O	ASP	A	77	1	0	0	221	56	289	A	O
ATOM	481	N	ARG	A	78	-1.655	4.557	50.920	1.00	14.71		A	N
ANISOU	481	N	ARG	A	78	1452	1639	1527	128	77	-58	A	N
SIGUIJ	481	N	ARG	A	78	1	0	0	221	63	289	A	N
ATOM	482	CA	ARG	A	78	-1.464	3.618	52.022	1.00	16.17		A	C
ANISOU	482	CA	ARG	A	78	2269	1750	1601	287	65	28	A	C
SIGUIJ	482	CA	ARG	A	78	1	0	0	220	143	290	A	C
ATOM	483	CB	ARG	A	78	-2.529	3.871	53.099	1.00	17.47		A	C
ANISOU	483	CB	ARG	A	78	2312	2487	1606	464	61	16	A	C
SIGUIJ	483	CB	ARG	A	78	1	0	0	220	142	290	A	C
ATOM	484	CG	ARG	A	78	-2.395	5.237	53.737	1.00	19.88		A	C
ANISOU	484	CG	ARG	A	78	4181	2508	1646	282	71	10	A	C
SIGUIJ	484	CG	ARG	A	78	1	0	0	220	142	290	A	C
ATOM	485	CD	ARG	A	78	-2.622	5.235	55.222	1.00	22.19		A	C
ANISOU	485	CD	ARG	A	78	9298	12495	1770	143	854	5	A	C
SIGUIJ	485	CD	ARG	A	78	1	0	0	220	142	290	A	C
ATOM	486	NE	ARG	A	78	-2.002	6.444	55.777	1.00	24.36		A	N
ANISOU	486	NE	ARG	A	78	12217	12616	5189	-25	-2043	-76	A	N
SIGUIJ	486	NE	ARG	A	78	1	0	0	221	63	289	A	N
ATOM	487	CZ	ARG	A	78	-2.465	7.108	56.841	1.00	24.83		A	C
ANISOU	487	CZ	ARG	A	78	12396	12449	5150	1	-1980	33	A	C
SIGUIJ	487	CZ	ARG	A	78	1	0	0	220	141	290	A	C
ATOM	488	NH1	ARG	A	78	-3.552	6.670	57.451	1.00	25.75		A	N
ANISOU	488	NH1	ARG	A	78	13703	12469	9248	-20	334	-1	A	N
SIGUIJ	488	NH1	ARG	A	78	1	0	0	221	63	289	A	N
ATOM	489	NH2	ARG	A	78	-1.838	8.192	57.300	1.00	25.77		A	N

ANISOU	489	NH2	ARG	A	78	10587	12383	2300	134	175	-3	A	N
SIGUIJ	489	NH2	ARG	A	78	1	0	0	221	63	289	A	N
ATOM	490	C	ARG	A	78	-1.544	2.178	51.552	1.00	16.15		A	C
ANISOU	490	C	ARG	A	78	1423	1795	2007	264	272	-124	A	C
SIGUIJ	490	C	ARG	A	78	1	0	0	220	141	290	A	C
ATOM	491	O	ARG	A	78	-1.031	1.267	52.269	1.00	16.98		A	O
ANISOU	491	O	ARG	A	78	2446	2180	2451	659	47	112	A	O
SIGUIJ	491	O	ARG	A	78	1	0	0	221	56	289	A	O
ATOM	492	N	ARG	A	79	-2.172	1.901	50.414	1.00	16.20		A	N
ANISOU	492	N	ARG	A	79	1402	1810	1951	-7	327	19	A	N
SIGUIJ	492	N	ARG	A	79	1	0	0	221	63	289	A	N
ATOM	493	CA	ARG	A	79	-2.289	0.528	49.913	1.00	16.42		A	C
ANISOU	493	CA	ARG	A	79	1569	1827	2088	26	234	-31	A	C
SIGUIJ	493	CA	ARG	A	79	1	0	0	220	141	290	A	C
ATOM	494	CB	ARG	A	79	-3.446	0.379	48.938	1.00	17.75		A	C
ANISOU	494	CB	ARG	A	79	2015	2016	2694	-8	-291	-5	A	C
SIGUIJ	494	CB	ARG	A	79	1	0	0	220	141	290	A	C
ATOM	495	CG	ARG	A	79	-4.772	0.900	49.454	1.00	19.73		A	C
ANISOU	495	CG	ARG	A	79	2352	2502	4693	128	447	-122	A	C
SIGUIJ	495	CG	ARG	A	79	1	0	0	220	140	290	A	C
ATOM	496	CD	ARG	A	79	-5.852	0.878	48.382	1.00	21.61		A	C
ANISOU	496	CD	ARG	A	79	2995	3034	5338	-6	-194	-6	A	C
SIGUIJ	496	CD	ARG	A	79	1	0	0	220	140	290	A	C
ATOM	497	NE	ARG	A	79	-5.728	1.918	47.348	1.00	23.13		A	N
ANISOU	497	NE	ARG	A	79	2535	3036	5331	-8	-269	-3	A	N
SIGUIJ	497	NE	ARG	A	79	1	0	0	221	63	289	A	N
ATOM	498	CZ	ARG	A	79	-5.263	1.690	46.132	1.00	22.93		A	C
ANISOU	498	CZ	ARG	A	79	3535	2972	5475	-31	109	-1	A	C
SIGUIJ	498	CZ	ARG	A	79	1	0	0	220	140	290	A	C
ATOM	499	NH1	ARG	A	79	-4.840	0.456	45.833	1.00	24.17		A	N
ANISOU	499	NH1	ARG	A	79	13175	4146	5369	3344	-187	-71	A	N
SIGUIJ	499	NH1	ARG	A	79	1	0	0	221	63	289	A	N
ATOM	500	NH2	ARG	A	79	-5.275	2.636	45.196	1.00	23.78		A	N
ANISOU	500	NH2	ARG	A	79	2347	2953	5443	101	254	-27	A	N
SIGUIJ	500	NH2	ARG	A	79	1	0	0	221	63	289	A	N
ATOM	501	C	ARG	A	79	-1.034	0.098	49.130	1.00	15.58		A	C
ANISOU	501	C	ARG	A	79	1606	1618	2236	0	327	12	A	C
SIGUIJ	501	C	ARG	A	79	1	0	0	220	139	290	A	C
ATOM	502	O	ARG	A	79	-0.912	-1.087	48.742	1.00	15.65		A	O
ANISOU	502	O	ARG	A	79	1870	1615	2332	2	464	5	A	O
SIGUIJ	502	O	ARG	A	79	1	0	0	221	55	289	A	O
ATOM	503	N	ALA	A	80	-0.142	1.027	48.813	1.00	14.69		A	N
ANISOU	503	N	ALA	A	80	1528	1554	1949	42	261	-52	A	N
SIGUIJ	503	N	ALA	A	80	1	0	0	221	63	289	A	N
ATOM	504	CA	ALA	A	80	1.055	0.671	48.028	1.00	13.83		A	C
ANISOU	504	CA	ALA	A	80	1362	1539	1466	101	-41	26	A	C
SIGUIJ	504	CA	ALA	A	80	1	0	0	220	139	290	A	C
ATOM	505	CB	ALA	A	80	1.820	1.914	47.622	1.00	14.11		A	C
ANISOU	505	CB	ALA	A	80	1648	1594	1901	3	210	16	A	C
SIGUIJ	505	CB	ALA	A	80	1	0	0	220	139	290	A	C
ATOM	506	C	ALA	A	80	1.957	-0.207	48.880	1.00	13.53		A	C

- 72 -

ANISOU	506	C	ALA	A	80	1254	1447	1366	57	32	-12	A	C
SIGUIJ	506	C	ALA	A	80	1	0	0	220	138	290	A	C
ATOM	507	O	ALA	A	80	1.945	-0.152	50.133	1.00	14.15		A	O
ANISOU	507	O	ALA	A	80	1894	2156	1364	533	24	17	A	O
SIGUIJ	507	O	ALA	A	80	1	0	0	221	55	289	A	O
ATOM	508	N	GLN	A	81	2.777	-1.007	48.211	1.00	12.88		A	N
ANISOU	508	N	GLN	A	81	1164	1353	1355	-3	17	0	A	N
SIGUIJ	508	N	GLN	A	81	1	0	0	221	63	289	A	N
ATOM	509	CA	GLN	A	81	3.903	-1.702	48.858	1.00	12.88		A	C
ANISOU	509	CA	GLN	A	81	1258	1538	1457	117	-31	15	A	C
SIGUIJ	509	CA	GLN	A	81	1	0	0	220	138	290	A	C
ATOM	510	CB	GLN	A	81	4.243	-2.974	48.113	1.00	13.68		A	C
ANISOU	510	CB	GLN	A	81	1628	1557	1580	178	-15	-23	A	C
SIGUIJ	510	CB	GLN	A	81	1	0	0	220	138	290	A	C
ATOM	511	CG	GLN	A	81	3.280	-4.094	48.365	1.00	14.30		A	C
ANISOU	511	CG	GLN	A	81	2118	1938	1820	-259	12	-9	A	C
SIGUIJ	511	CG	GLN	A	81	1	0	0	220	138	290	A	C
ATOM	512	CD	GLN	A	81	3.665	-5.304	47.553	1.00	14.78		A	C
ANISOU	512	CD	GLN	A	81	2410	1963	1852	-203	54	-20	A	C
SIGUIJ	512	CD	GLN	A	81	1	0	0	220	137	290	A	C
ATOM	513	OE1	GLN	A	81	4.755	-5.840	47.685	1.00	14.65		A	O
ANISOU	513	OE1	GLN	A	81	2285	1532	1692	-435	53	-31	A	O
SIGUIJ	513	OE1	GLN	A	81	1	0	0	221	55	289	A	O
ATOM	514	NE2	GLN	A	81	2.772	-5.731	46.694	1.00	15.20		A	N
ANISOU	514	NE2	GLN	A	81	2594	1610	2068	-72	-186	19	A	N
SIGUIJ	514	NE2	GLN	A	81	1	0	0	221	63	289	A	N
ATOM	515	C	GLN	A	81	5.107	-0.798	48.860	1.00	12.83		A	C
ANISOU	515	C	GLN	A	81	1272	1621	1317	87	1	-1	A	C
SIGUIJ	515	C	GLN	A	81	1	0	0	220	137	290	A	C
ATOM	516	O	GLN	A	81	5.399	-0.130	47.854	1.00	13.03		A	O
ANISOU	516	O	GLN	A	81	1658	1744	1347	-33	49	8	A	O
SIGUIJ	516	O	GLN	A	81	1	0	0	221	55	289	A	O
ATOM	517	N	ARG	A	82	5.822	-0.751	49.982	1.00	12.82		A	N
ANISOU	517	N	ARG	A	82	1266	1962	1310	69	0	0	A	N
SIGUIJ	517	N	ARG	A	82	1	0	0	221	63	289	A	N
ATOM	518	CA	ARG	A	82	7.114	-0.102	50.076	1.00	13.15		A	C
ANISOU	518	CA	ARG	A	82	1298	2122	1292	-4	1	19	A	C
SIGUIJ	518	CA	ARG	A	82	1	0	0	220	137	290	A	C
ATOM	519	CB	ARG	A	82	7.102	1.055	51.076	1.00	13.97		A	C
ANISOU	519	CB	ARG	A	82	1542	2195	1404	-74	89	-71	A	C
SIGUIJ	519	CB	ARG	A	82	1	0	0	220	136	290	A	C
ATOM	520	CG	ARG	A	82	6.258	2.217	50.605	1.00	15.61		A	C
ANISOU	520	CG	ARG	A	82	1860	2364	1795	128	-3	-4	A	C
SIGUIJ	520	CG	ARG	A	82	1	0	0	220	136	290	A	C
ATOM	521	CD	ARG	A	82	5.972	3.220	51.759	1.00	17.78		A	C
ANISOU	521	CD	ARG	A	82	3912	2325	1887	147	488	37	A	C
SIGUIJ	521	CD	ARG	A	82	1	0	0	220	136	290	A	C
ATOM	522	NE	ARG	A	82	7.152	3.801	52.439	1.00	20.13		A	N
ANISOU	522	NE	ARG	A	82	4477	3200	2961	-273	-130	25	A	N
SIGUIJ	522	NE	ARG	A	82	1	0	0	221	63	289	A	N
ATOM	523	CZ	ARG	A	82	7.612	3.635	53.704	1.00	20.42		A	C

- 73 -

ANISOU	523	CZ	ARG	A	82	3283	3539	2778	21	351	-15	A	C
SIGUIJ	523	CZ	ARG	A	82	1	0	0	220	136	290	A	C
ATOM	524	NH1	ARG	A	82	7.071	2.836	54.659	1.00	21.72		A	N
ANISOU	524	NH1	ARG	A	82	2666	3558	2587	15	-6	0	A	N
SIGUIJ	524	NH1	ARG	A	82	1	0	0	221	63	289	A	N
ATOM	525	NH2	ARG	A	82	8.667	4.345	54.040	1.00	21.55		A	N
ANISOU	525	NH2	ARG	A	82	3396	3567	3679	-3	60	1	A	N
SIGUIJ	525	NH2	ARG	A	82	1	0	0	221	63	289	A	N
ATOM	526	C	ARG	A	82	8.125	-1.142	50.520	1.00	12.58		A	C
ANISOU	526	C	ARG	A	82	1406	2256	1072	133	74	4	A	C
SIGUIJ	526	C	ARG	A	82	1	0	0	220	135	290	A	C
ATOM	527	O	ARG	A	82	7.855	-1.914	51.507	1.00	13.16		A	O
ANISOU	527	O	ARG	A	82	1450	2400	1172	188	134	113	A	O
SIGUIJ	527	O	ARG	A	82	1	0	0	221	55	289	A	O
ATOM	528	N	ILE	A	83	9.274	-1.267	49.827	1.00	11.91		A	N
ANISOU	528	N	ILE	A	83	1409	1711	1104	68	86	1	A	N
SIGUIJ	528	N	ILE	A	83	1	0	0	221	63	289	A	N
ATOM	529	CA	ILE	A	83	10.267	-2.294	50.147	1.00	11.49		A	C
ANISOU	529	CA	ILE	A	83	1349	1609	1387	-26	0	0	A	C
SIGUIJ	529	CA	ILE	A	83	1	0	0	220	135	290	A	C
ATOM	530	CB	ILE	A	83	10.238	-3.458	49.116	1.00	11.87		A	C
ANISOU	530	CB	ILE	A	83	1459	1615	1407	-37	7	-2	A	C
SIGUIJ	530	CB	ILE	A	83	1	0	0	220	135	290	A	C
ATOM	531	CG2	ILE	A	83	11.302	-4.507	49.456	1.00	12.03		A	C
ANISOU	531	CG2	ILE	A	83	1493	1636	1501	-11	0	0	A	C
SIGUIJ	531	CG2	ILE	A	83	1	0	0	220	135	290	A	C
ATOM	532	CG1	ILE	A	83	8.827	-4.068	49.036	1.00	11.90		A	C
ANISOU	532	CG1	ILE	A	83	1477	1764	1850	-95	21	6	A	C
SIGUIJ	532	CG1	ILE	A	83	1	0	0	220	134	290	A	C
ATOM	533	CD1	ILE	A	83	8.669	-5.109	47.983	1.00	12.03		A	C
ANISOU	533	CD1	ILE	A	83	1593	1763	1886	-7	-62	-2	A	C
SIGUIJ	533	CD1	ILE	A	83	1	0	0	220	134	290	A	C
ATOM	534	C	ILE	A	83	11.635	-1.625	50.099	1.00	11.35		A	C
ANISOU	534	C	ILE	A	83	1318	1448	1310	49	0	0	A	C
SIGUIJ	534	C	ILE	A	83	1	0	0	220	134	290	A	C
ATOM	535	O	ILE	A	83	12.039	-0.953	49.109	1.00	11.54		A	O
ANISOU	535	O	ILE	A	83	1387	1486	1327	7	6	0	A	O
SIGUIJ	535	O	ILE	A	83	1	0	0	221	55	289	A	O
ATOM	536	N	ALYS	A	84	12.412	-1.875	51.155	0.50	11.01		A	N
ANISOU	536	N	ALYS	A	84	1311	1305	1306	0	0	0	A	N
SIGUIJ	536	N	ALYS	A	84	1	0	0	221	63	289	A	N
ATOM	537	N	BLYS	A	84	12.408	-1.860	51.162	0.50	13.20		A	N
ANISOU	537	N	BLYS	A	84	1313	1284	1307	0	0	0	A	N
SIGUIJ	537	N	BLYS	A	84	1	0	0	221	63	289	A	N
ATOM	538	CA	ALYS	A	84	13.788	-1.375	51.216	0.50	11.28		A	C
ANISOU	538	CA	ALYS	A	84	1318	1319	1231	0	2	0	A	C
SIGUIJ	538	CA	ALYS	A	84	1	0	0	220	134	290	A	C
ATOM	539	CA	BLYS	A	84	13.787	-1.365	51.222	0.50	13.47		A	C
ANISOU	539	CA	BLYS	A	84	1322	1300	1256	-1	3	0	A	C
SIGUIJ	539	CA	BLYS	A	84	1	0	0	220	133	290	A	C
ATOM	540	CB	ALYS	A	84	14.322	-1.576	52.631	0.50	12.09		A	C

- 74 -

ANISOU	540	CB	ALYS	A	84	1460	1737	1232	119	-21	-2	A	C
SIGUIJ	540	CB	ALYS	A	84	1	0	0	220	133	290	A	C
ATOM	541	CB	BLYS	A	84	14.312	-1.526	52.654	0.50	14.28		A	C
ANISOU	541	CB	BLYS	A	84	1368	1464	1254	25	4	0	A	C
SIGUIJ	541	CB	BLYS	A	84	1	0	0	220	133	290	A	C
ATOM	542	CG	ALYS	A	84	15.582	-0.808	52.931	0.50	13.81		A	C
ANISOU	542	CG	ALYS	A	84	1596	2052	1371	-78	-71	18	A	C
SIGUIJ	542	CG	ALYS	A	84	1	0	0	220	132	290	A	C
ATOM	543	CG	BLYS	A	84	15.719	-0.993	52.907	0.50	16.00		A	C
ANISOU	543	CG	BLYS	A	84	1422	1806	1303	-104	3	-1	A	C
SIGUIJ	543	CG	BLYS	A	84	1	0	0	220	132	290	A	C
ATOM	544	CD	ALYS	A	84	15.272	0.692	53.048	0.50	15.76		A	C
ANISOU	544	CD	ALYS	A	84	1770	2063	1729	-42	-5	2	A	C
SIGUIJ	544	CD	ALYS	A	84	1	0	0	220	132	290	A	C
ATOM	545	CD	BLYS	A	84	15.824	0.519	52.707	0.50	17.95		A	C
ANISOU	545	CD	BLYS	A	84	2138	1820	1735	-173	-167	68	A	C
SIGUIJ	545	CD	BLYS	A	84	1	0	0	220	132	290	A	C
ATOM	546	CE	ALYS	A	84	16.490	1.520	53.380	0.50	17.29		A	C
ANISOU	546	CE	ALYS	A	84	1795	1956	2589	26	-257	21	A	C
SIGUIJ	546	CE	ALYS	A	84	1	0	0	220	131	290	A	C
ATOM	547	CE	BLYS	A	84	14.820	1.325	53.515	0.50	19.48		A	C
ANISOU	547	CE	BLYS	A	84	2552	2209	2096	105	75	19	A	C
SIGUIJ	547	CE	BLYS	A	84	1	0	0	220	131	290	A	C
ATOM	548	NZ	ALYS	A	84	16.029	2.817	53.936	0.50	18.71		A	N
ANISOU	548	NZ	ALYS	A	84	2335	1993	2853	103	11	0	A	N
SIGUIJ	548	NZ	ALYS	A	84	1	0	0	221	63	289	A	N
ATOM	549	NZ	BLYS	A	84	15.068	1.396	54.997	0.50	20.90		A	N
ANISOU	549	NZ	BLYS	A	84	3179	3141	2119	1	-31	-1	A	N
SIGUIJ	549	NZ	BLYS	A	84	1	0	0	221	63	289	A	N
ATOM	550	C	ALYS	A	84	14.654	-2.177	50.232	0.50	10.91		A	C
ANISOU	550	C	ALYS	A	84	1313	1314	1240	0	-1	0	A	C
SIGUIJ	550	C	ALYS	A	84	1	0	0	220	131	290	A	C
ATOM	551	C	BLYS	A	84	14.659	-2.175	50.245	0.50	13.10		A	C
ANISOU	551	C	BLYS	A	84	1316	1304	1255	0	0	0	A	C
SIGUIJ	551	C	BLYS	A	84	1	0	0	220	131	290	A	C
ATOM	552	O	ALYS	A	84	14.506	-3.403	50.098	0.50	11.25		A	O
ANISOU	552	O	ALYS	A	84	1365	1314	1304	-1	2	0	A	O
SIGUIJ	552	O	ALYS	A	84	1	0	0	221	55	289	A	O
ATOM	553	O	BLYS	A	84	14.502	-3.395	50.108	0.50	13.44		A	O
ANISOU	553	O	BLYS	A	84	1409	1305	1320	-4	2	0	A	O
SIGUIJ	553	O	BLYS	A	84	1	0	0	221	55	289	A	O
ATOM	554	N	ALA	A	85	15.588	-1.496	49.575	1.00	10.86		A	N
ANISOU	554	N	ALA	A	85	1309	1307	1236	0	-6	0	A	N
SIGUIJ	554	N	ALA	A	85	1	0	0	221	63	289	A	N
ATOM	555	CA	ALA	A	85	16.554	-2.127	48.697	1.00	10.85		A	C
ANISOU	555	CA	ALA	A	85	1332	1285	1263	-5	20	-2	A	C
SIGUIJ	555	CA	ALA	A	85	1	0	0	220	130	290	A	C
ATOM	556	CB	ALA	A	85	16.188	-1.868	47.212	1.00	10.61		A	C
ANISOU	556	CB	ALA	A	85	1545	1376	1277	-32	-40	6	A	C
SIGUIJ	556	CB	ALA	A	85	1	0	0	220	130	290	A	C
ATOM	557	C	ALA	A	85	17.920	-1.574	49.010	1.00	11.52		A	C

- 75 -

ANISOU	557	C	ALA	A	85	1340	1278	1472	-15	-6	0	A	C
SIGUIJ	557	C	ALA	A	85	1	0	0	220	130	290	A	C
ATOM	558	O	ALA	A	85	18.180	-0.367	48.811	1.00	11.81		A	O
ANISOU	558	O	ALA	A	85	1423	1289	1607	-36	8	0	A	O
SIGUIJ	558	O	ALA	A	85	1	0	0	221	55	289	A	O
ATOM	559	N	SER	A	86	18.835	-2.432	49.461	1.00	11.89		A	N
ANISOU	559	N	SER	A	86	1430	1388	1488	81	-1	1	A	N
SIGUIJ	559	N	SER	A	86	1	0	0	221	63	289	A	N
ATOM	560	CA	SER	A	86	20.157	-1.979	49.872	1.00	12.90		A	C
ANISOU	560	CA	SER	A	86	1476	1777	1455	-50	1	-1	A	C
SIGUIJ	560	CA	SER	A	86	1	0	0	220	130	290	A	C
ATOM	561	CB	SER	A	86	20.636	-2.820	51.051	1.00	13.15		A	C
ANISOU	561	CB	SER	A	86	1981	1880	1582	-59	-228	63	A	C
SIGUIJ	561	CB	SER	A	86	1	0	0	220	130	290	A	C
ATOM	562	OG	SER	A	86	19.800	-2.651	52.157	1.00	14.64		A	O
ANISOU	562	OG	SER	A	86	2186	2107	1678	-37	-97	22	A	O
SIGUIJ	562	OG	SER	A	86	1	0	0	221	55	289	A	O
ATOM	563	C	SER	A	86	21.190	-2.062	48.745	1.00	13.37		A	C
ANISOU	563	C	SER	A	86	1473	1707	1453	-43	0	0	A	C
SIGUIJ	563	C	SER	A	86	1	0	0	220	129	290	A	C
ATOM	564	O	SER	A	86	22.076	-1.207	48.664	1.00	14.89		A	O
ANISOU	564	O	SER	A	86	1823	2110	2787	-408	86	46	A	O
SIGUIJ	564	O	SER	A	86	1	0	0	221	55	289	A	O
ATOM	565	N	LYS	A	87	21.103	-3.048	47.876	1.00	13.17		A	N
ANISOU	565	N	LYS	A	87	1507	1678	1442	-30	0	0	A	N
SIGUIJ	565	N	LYS	A	87	1	0	0	221	62	289	A	N
ATOM	566	CA	LYS	A	87	22.134	-3.292	46.848	1.00	13.39		A	C
ANISOU	566	CA	LYS	A	87	1513	1739	1433	22	-3	0	A	C
SIGUIJ	566	CA	LYS	A	87	1	0	0	220	129	290	A	C
ATOM	567	CB	LYS	A	87	22.532	-4.783	46.793	1.00	15.31		A	C
ANISOU	567	CB	LYS	A	87	1588	1756	1988	34	46	-8	A	C
SIGUIJ	567	CB	LYS	A	87	1	0	0	220	129	290	A	C
ATOM	568	CG	LYS	A	87	23.052	-5.301	48.119	1.00	16.98		A	C
ANISOU	568	CG	LYS	A	87	1980	2174	2064	209	-66	66	A	C
SIGUIJ	568	CG	LYS	A	87	1	0	0	220	129	290	A	C
ATOM	569	CD	LYS	A	87	23.352	-6.794	47.948	1.00	19.00		A	C
ANISOU	569	CD	LYS	A	87	3261	2229	2866	465	-27	-20	A	C
SIGUIJ	569	CD	LYS	A	87	1	0	0	220	128	290	A	C
ATOM	570	CE	LYS	A	87	23.903	-7.405	49.195	1.00	20.42		A	C
ANISOU	570	CE	LYS	A	87	3382	3215	2904	1007	191	243	A	C
SIGUIJ	570	CE	LYS	A	87	1	0	0	220	128	290	A	C
ATOM	571	NZ	LYS	A	87	23.646	-8.865	49.145	1.00	22.25		A	N
ANISOU	571	NZ	LYS	A	87	8485	3389	5651	92	1139	-70	A	N
SIGUIJ	571	NZ	LYS	A	87	1	0	0	221	62	289	A	N
ATOM	572	C	LYS	A	87	21.668	-2.897	45.446	1.00	12.69		A	C
ANISOU	572	C	LYS	A	87	1309	1533	1428	-82	19	9	A	C
SIGUIJ	572	C	LYS	A	87	1	0	0	220	128	290	A	C
ATOM	573	O	LYS	A	87	20.487	-3.076	45.072	1.00	12.42		A	O
ANISOU	573	O	LYS	A	87	1335	1510	1674	-77	-56	-16	A	O
SIGUIJ	573	O	LYS	A	87	1	0	0	221	55	289	A	O
ATOM	574	N	SER	A	88	22.603	-2.427	44.641	1.00	11.85		A	N

- 76 -

ANISOU	574	N	SER	A	88	1231	1293	1400	33	5	-2	A	N
SIGUIJ	574	N	SER	A	88	1	0	0	221	62	289	A	N
ATOM	575	CA	SER	A	88	22.302	-2.157	43.242	1.00	11.82		A	C
ANISOU	575	CA	SER	A	88	1310	1266	1405	0	-4	0	A	C
SIGUIJ	575	CA	SER	A	88	1	0	0	220	128	290	A	C
ATOM	576	CB	SER	A	88	21.699	-0.751	43.109	1.00	11.87		A	C
ANISOU	576	CB	SER	A	88	1411	1273	1611	29	-17	0	A	C
SIGUIJ	576	CB	SER	A	88	1	0	0	220	127	290	A	C
ATOM	577	OG	SER	A	88	22.490	0.270	43.706	1.00	11.43		A	O
ANISOU	577	OG	SER	A	88	1456	1288	1576	-5	-6	0	A	O
SIGUIJ	577	OG	SER	A	88	1	0	0	221	55	289	A	O
ATOM	578	C	SER	A	88	23.561	-2.295	42.397	1.00	11.83		A	C
ANISOU	578	C	SER	A	88	1310	1405	1435	14	5	-1	A	C
SIGUIJ	578	C	SER	A	88	1	0	0	220	127	290	A	C
ATOM	579	O	SER	A	88	24.684	-2.165	42.928	1.00	11.99		A	O
ANISOU	579	O	SER	A	88	1354	1687	1594	-27	-86	-8	A	O
SIGUIJ	579	O	SER	A	88	1	0	0	221	55	289	A	O
ATOM	580	N	PHE	A	89	23.369	-2.558	41.108	1.00	11.41		A	N
ANISOU	580	N	PHE	A	89	1224	1344	1444	31	8	-2	A	N
SIGUIJ	580	N	PHE	A	89	1	0	0	221	62	289	A	N
ATOM	581	CA	PHE	A	89	24.457	-2.972	40.208	1.00	11.41		A	C
ANISOU	581	CA	PHE	A	89	1236	1359	1516	51	26	-7	A	C
SIGUIJ	581	CA	PHE	A	89	1	0	0	220	127	290	A	C
ATOM	582	CB	PHE	A	89	24.433	-4.489	40.002	1.00	12.08		A	C
ANISOU	582	CB	PHE	A	89	1854	1348	1848	58	0	-2	A	C
SIGUIJ	582	CB	PHE	A	89	1	0	0	220	127	290	A	C
ATOM	583	CG	PHE	A	89	24.452	-5.264	41.298	1.00	12.41		A	C
ANISOU	583	CG	PHE	A	89	1977	1324	1856	87	-10	-4	A	C
SIGUIJ	583	CG	PHE	A	89	1	0	0	220	127	290	A	C
ATOM	584	CD1	PHE	A	89	23.290	-5.587	41.963	1.00	13.24		A	C
ANISOU	584	CD1	PHE	A	89	2000	1457	1919	49	4	1	A	C
SIGUIJ	584	CD1	PHE	A	89	1	0	0	220	126	290	A	C
ATOM	585	CD2	PHE	A	89	25.664	-5.585	41.911	1.00	13.13		A	C
ANISOU	585	CD2	PHE	A	89	2036	1910	1891	269	-31	-35	A	C
SIGUIJ	585	CD2	PHE	A	89	1	0	0	220	126	290	A	C
ATOM	586	CE1	PHE	A	89	23.316	-6.181	43.191	1.00	13.82		A	C
ANISOU	586	CE1	PHE	A	89	2540	1477	1932	170	45	10	A	C
SIGUIJ	586	CE1	PHE	A	89	1	0	0	220	126	290	A	C
ATOM	587	CE2	PHE	A	89	25.653	-6.191	43.178	1.00	13.75		A	C
ANISOU	587	CE2	PHE	A	89	2563	1950	1900	194	-63	-18	A	C
SIGUIJ	587	CE2	PHE	A	89	1	0	0	220	126	290	A	C
ATOM	588	CZ	PHE	A	89	24.517	-6.464	43.779	1.00	13.84		A	C
ANISOU	588	CZ	PHE	A	89	2582	1757	2030	251	1	0	A	C
SIGUIJ	588	CZ	PHE	A	89	1	0	0	220	125	290	A	C
ATOM	589	C	PHE	A	89	24.226	-2.252	38.903	1.00	11.62		A	C
ANISOU	589	C	PHE	A	89	1222	1245	1445	252	138	-127	A	C
SIGUIJ	589	C	PHE	A	89	1	0	0	220	125	290	A	C
ATOM	590	O	PHE	A	89	23.326	-2.590	38.108	1.00	11.21		A	O
ANISOU	590	O	PHE	A	89	1301	1248	1491	213	85	-90	A	O
SIGUIJ	590	O	PHE	A	89	1	0	0	221	55	289	A	O
ATOM	591	N	AARG	A	90	25.105	-1.294	38.630	0.50	12.01		A	N

- 77 -

ANISOU	591	N	AARG	A	90	1452	1515	1438	-8	0	0	A	N
SIGUIJ	591	N	AARG	A	90	1	0	0	221	62	289	A	N
ATOM	592	N	BARG	A	90	25.097	-1.280	38.633	0.50	14.20		A	N
ANISOU	592	N	BARG	A	90	1474	1529	1451	-17	1	0	A	N
SIGUIJ	592	N	BARG	A	90	1	0	0	221	62	289	A	N
ATOM	593	CA	AARG	A	90	25.103	-0.574	37.349	0.50	13.07		A	C
ANISOU	593	CA	AARG	A	90	1337	1515	1436	-7	2	0	A	C
SIGUIJ	593	CA	AARG	A	90	1	0	0	220	125	290	A	C
ATOM	594	CA	BARG	A	90	25.092	-0.536	37.359	0.50	15.26		A	C
ANISOU	594	CA	BARG	A	90	1311	1551	1448	4	4	0	A	C
SIGUIJ	594	CA	BARG	A	90	1	0	0	220	125	290	A	C
ATOM	595	CB	AARG	A	90	25.964	0.653	37.398	0.50	13.27		A	C
ANISOU	595	CB	AARG	A	90	1359	1530	1493	-22	0	0	A	C
SIGUIJ	595	CB	AARG	A	90	1	0	0	220	125	290	A	C
ATOM	596	CB	BARG	A	90	25.879	0.766	37.474	0.50	15.46		A	C
ANISOU	596	CB	BARG	A	90	1415	1599	3073	-44	-208	-23	A	C
SIGUIJ	596	CB	BARG	A	90	1	0	0	220	124	290	A	C
ATOM	597	CG	AARG	A	90	25.363	1.765	38.207	0.50	14.09		A	C
ANISOU	597	CG	AARG	A	90	1315	1506	1503	-57	3	1	A	C
SIGUIJ	597	CG	AARG	A	90	1	0	0	220	124	290	A	C
ATOM	598	CG	BARG	A	90	25.238	1.764	38.451	0.50	16.28		A	C
ANISOU	598	CG	BARG	A	90	1597	1623	3101	-3	-141	-7	A	C
SIGUIJ	598	CG	BARG	A	90	1	0	0	220	124	290	A	C
ATOM	599	CD	AARG	A	90	26.399	2.861	38.297	0.50	15.12		A	C
ANISOU	599	CD	AARG	A	90	1180	1377	1504	72	7	-2	A	C
SIGUIJ	599	CD	AARG	A	90	1	0	0	220	124	290	A	C
ATOM	600	CD	BARG	A	90	26.049	3.043	38.668	0.50	17.31		A	C
ANISOU	600	CD	BARG	A	90	1713	1622	4341	-7	-565	48	A	C
SIGUIJ	600	CD	BARG	A	90	1	0	0	220	124	290	A	C
ATOM	601	NE	AARG	A	90	25.790	4.161	38.571	0.50	15.48		A	N
ANISOU	601	NE	AARG	A	90	1129	1362	1352	52	-16	3	A	N
SIGUIJ	601	NE	AARG	A	90	1	0	0	221	62	289	A	N
ATOM	602	NE	BARG	A	90	27.405	2.748	39.094	0.50	17.67		A	N
ANISOU	602	NE	BARG	A	90	1618	2442	3049	156	-166	24	A	N
SIGUIJ	602	NE	BARG	A	90	1	0	0	221	62	289	A	N
ATOM	603	CZ	AARG	A	90	26.464	5.249	38.929	0.50	15.12		A	C
ANISOU	603	CZ	AARG	A	90	1156	1371	1291	30	21	-4	A	C
SIGUIJ	603	CZ	AARG	A	90	1	0	0	220	123	290	A	C
ATOM	604	CZ	BARG	A	90	28.397	3.628	39.073	0.50	17.31		A	C
ANISOU	604	CZ	BARG	A	90	1654	2495	3133	110	-154	16	A	C
SIGUIJ	604	CZ	BARG	A	90	1	0	0	220	123	290	A	C
ATOM	605	NH1AARG	A	90	27.789	5.187	39.088	0.50	15.97			A	N
ANISOU	605	NH1AARG	A	90	1171	1391	2259	29	-89	6		A	N
SIGUIJ	605	NH1AARG	A	90	1	0	0	221	62	289		A	N
ATOM	606	NH1BARG	A	90	28.185	4.878	38.667	0.50	18.16			A	N
ANISOU	606	NH1BARG	A	90	1573	2490	3114	82	-178	12		A	N
SIGUIJ	606	NH1BARG	A	90	1	0	0	221	62	289		A	N
ATOM	607	NH2AARG	A	90	25.818	6.401	39.026	0.50	14.36			A	N
ANISOU	607	NH2AARG	A	90	780	1244	886	-183	9	8		A	N
SIGUIJ	607	NH2AARG	A	90	1	0	0	221	62	289		A	N
ATOM	608	NH2BARG	A	90	29.620	3.219	39.394	0.50	16.55			A	N

- 78 -

ANISOU	608	NH2BARG	A	90	1599	2618	2127	159	98	-22	A	N	
SIGUIJ	608	NH2BARG	A	90	1	0	0	221	62	289	A	N	
ATOM	609	C	AARG	A	90	25.703	-1.419	36.246	0.50	13.71	A	C	
ANISOU	609	C	AARG	A	90	1376	1535	1437	19	13	-3	A	C
SIGUIJ	609	C	AARG	A	90	1	0	0	220	123	290	A	C
ATOM	610	C	BARG	A	90	25.739	-1.352	36.246	0.50	15.90	A	C	
ANISOU	610	C	BARG	A	90	1375	1581	1444	51	8	-4	A	C
SIGUIJ	610	C	BARG	A	90	1	0	0	220	123	290	A	C
ATOM	611	O	AARG	A	90	26.568	-2.275	36.492	0.50	13.91	A	O	
ANISOU	611	O	AARG	A	90	1717	1882	1575	358	3	36	A	O
SIGUIJ	611	O	AARG	A	90	1	0	0	221	55	289	A	O
ATOM	612	O	BARG	A	90	26.653	-2.145	36.490	0.50	16.10	A	O	
ANISOU	612	O	BARG	A	90	1656	1911	2112	331	-111	76	A	O
SIGUIJ	612	O	BARG	A	90	1	0	0	221	55	289	A	O
ATOM	613	N	HIS	A	91	25.256	-1.184	35.020	1.00	14.41	A	N	
ANISOU	613	N	HIS	A	91	1453	1903	1440	182	-1	5	A	N
SIGUIJ	613	N	HIS	A	91	1	0	0	221	62	289	A	N
ATOM	614	CA	HIS	A	91	25.955	-1.767	33.871	1.00	15.48	A	C	
ANISOU	614	CA	HIS	A	91	1577	2114	1439	328	2	8	A	C
SIGUIJ	614	CA	HIS	A	91	1	0	0	220	123	290	A	C
ATOM	615	CB	HIS	A	91	25.243	-1.342	32.609	1.00	15.53	A	C	
ANISOU	615	CB	HIS	A	91	1692	2116	1439	400	-21	-23	A	C
SIGUIJ	615	CB	HIS	A	91	1	0	0	220	122	290	A	C
ATOM	616	CG	HIS	A	91	25.732	-2.054	31.364	1.00	16.17	A	C	
ANISOU	616	CG	HIS	A	91	2080	2039	1478	403	112	14	A	C
SIGUIJ	616	CG	HIS	A	91	1	0	0	220	122	290	A	C
ATOM	617	CD2	HIS	A	91	25.170	-3.049	30.632	1.00	16.53	A	C	
ANISOU	617	CD2	HIS	A	91	2575	2179	1489	112	120	22	A	C
SIGUIJ	617	CD2	HIS	A	91	1	0	0	220	122	290	A	C
ATOM	618	ND1	HIS	A	91	26.940	-1.752	30.760	1.00	16.33	A	N	
ANISOU	618	ND1	HIS	A	91	2208	2709	1805	237	296	-14	A	N
SIGUIJ	618	ND1	HIS	A	91	1	0	0	221	62	289	A	N
ATOM	619	CE1	HIS	A	91	27.098	-2.551	29.707	1.00	16.71	A	C	
ANISOU	619	CE1	HIS	A	91	3168	2580	1781	149	530	68	A	C
SIGUIJ	619	CE1	HIS	A	91	1	0	0	220	122	290	A	C
ATOM	620	NE2	HIS	A	91	26.049	-3.343	29.609	1.00	16.79	A	N	
ANISOU	620	NE2	HIS	A	91	3036	2323	1757	343	466	148	A	N
SIGUIJ	620	NE2	HIS	A	91	1	0	0	221	62	289	A	N
ATOM	621	C	HIS	A	91	27.399	-1.213	33.878	1.00	16.12	A	C	
ANISOU	621	C	HIS	A	91	1549	1980	1755	379	51	-52	A	C
SIGUIJ	621	C	HIS	A	91	1	0	0	220	122	290	A	C
ATOM	622	O	HIS	A	91	27.633	-0.033	34.149	1.00	15.90	A	O	
ANISOU	622	O	HIS	A	91	1630	2027	2064	291	356	-175	A	O
SIGUIJ	622	O	HIS	A	91	1	0	0	221	55	289	A	O
ATOM	623	N	PRO	A	92	28.377	-2.096	33.568	1.00	17.08	A	N	
ANISOU	623	N	PRO	A	92	1599	1960	2747	346	307	-122	A	N
SIGUIJ	623	N	PRO	A	92	1	0	0	221	62	289	A	N
ATOM	624	CD	PRO	A	92	28.200	-3.528	33.228	1.00	17.34	A	C	
ANISOU	624	CD	PRO	A	92	1555	1964	2959	352	421	-171	A	C
SIGUIJ	624	CD	PRO	A	92	1	0	0	220	121	290	A	C
ATOM	625	CA	PRO	A	92	29.789	-1.732	33.662	1.00	18.05	A	C	

- 79 -

ANISOU	625	CA	PRO	A	92	1637	2575	3230	178	267	-45	A	C
SIGUIJ	625	CA	PRO	A	92	1	0	0	220	121	290	A	C
ATOM	626	CB	PRO	A	92	30.523	-3.039	33.352	1.00	18.03		A	C
ANISOU	626	CB	PRO	A	92	2147	2595	5347	238	1218	-26	A	C
SIGUIJ	626	CB	PRO	A	92	1	0	0	220	121	290	A	C
ATOM	627	CG	PRO	A	92	29.595	-3.943	32.745	1.00	17.85		A	C
ANISOU	627	CG	PRO	A	92	1886	2564	5684	469	1307	-351	A	C
SIGUIJ	627	CG	PRO	A	92	1	0	0	220	121	290	A	C
ATOM	628	C	PRO	A	92	30.261	-0.614	32.741	1.00	18.73		A	C
ANISOU	628	C	PRO	A	92	2870	2518	3323	60	795	-195	A	C
SIGUIJ	628	C	PRO	A	92	1	0	0	220	121	290	A	C
ATOM	629	O	PRO	A	92	31.335	0.019	32.997	1.00	19.68		A	O
ANISOU	629	O	PRO	A	92	3289	3223	3753	-484	378	338	A	O
SIGUIJ	629	O	PRO	A	92	1	0	0	221	55	289	A	O
ATOM	630	N	GLY	A	93	29.503	-0.367	31.687	1.00	19.18		A	N
ANISOU	630	N	GLY	A	93	2405	2455	3056	209	1157	-308	A	N
SIGUIJ	630	N	GLY	A	93	1	0	0	221	62	289	A	N
ATOM	631	CA	GLY	A	93	29.954	0.623	30.716	1.00	19.61		A	C
ANISOU	631	CA	GLY	A	93	2978	2883	3679	249	1468	152	A	C
SIGUIJ	631	CA	GLY	A	93	1	0	0	220	120	290	A	C
ATOM	632	C	GLY	A	93	29.473	2.046	30.978	1.00	19.41		A	C
ANISOU	632	C	GLY	A	93	2053	2902	1983	215	-4	-11	A	C
SIGUIJ	632	C	GLY	A	93	1	0	0	220	120	290	A	C
ATOM	633	O	GLY	A	93	29.597	2.921	30.112	1.00	19.30		A	O
ANISOU	633	O	GLY	A	93	1718	2790	1916	404	188	-106	A	O
SIGUIJ	633	O	GLY	A	93	1	0	0	221	55	289	A	O
ATOM	634	N	TYR	A	94	28.871	2.295	32.157	1.00	19.65		A	N
ANISOU	634	N	TYR	A	94	2158	3387	1987	465	-3	-8	A	N
SIGUIJ	634	N	TYR	A	94	1	0	0	221	62	289	A	N
ATOM	635	CA	TYR	A	94	28.106	3.547	32.315	1.00	19.52		A	C
ANISOU	635	CA	TYR	A	94	1425	3106	1812	5	30	4	A	C
SIGUIJ	635	CA	TYR	A	94	1	0	0	220	120	290	A	C
ATOM	636	CB	TYR	A	94	27.215	3.525	33.587	1.00	18.03		A	C
ANISOU	636	CB	TYR	A	94	1488	2218	1833	0	63	0	A	C
SIGUIJ	636	CB	TYR	A	94	1	0	0	220	120	290	A	C
ATOM	637	CG	TYR	A	94	26.540	4.842	33.886	1.00	16.64		A	C
ANISOU	637	CG	TYR	A	94	1190	2118	1697	-176	81	21	A	C
SIGUIJ	637	CG	TYR	A	94	1	0	0	220	120	290	A	C
ATOM	638	CD1	TYR	A	94	25.670	5.431	32.967	1.00	16.20		A	C
ANISOU	638	CD1	TYR	A	94	1200	1798	1785	-351	-38	-20	A	C
SIGUIJ	638	CD1	TYR	A	94	1	0	0	220	119	290	A	C
ATOM	639	CE1	TYR	A	94	25.003	6.633	33.222	1.00	15.88		A	C
ANISOU	639	CE1	TYR	A	94	1296	1798	1741	-327	89	53	A	C
SIGUIJ	639	CE1	TYR	A	94	1	0	0	220	119	290	A	C
ATOM	640	CD2	TYR	A	94	26.765	5.484	35.089	1.00	16.08		A	C
ANISOU	640	CD2	TYR	A	94	1683	2145	1718	-218	4	7	A	C
SIGUIJ	640	CD2	TYR	A	94	1	0	0	220	119	290	A	C
ATOM	641	CE2	TYR	A	94	26.156	6.678	35.380	1.00	15.75		A	C
ANISOU	641	CE2	TYR	A	94	1824	2177	1776	-145	0	0	A	C
SIGUIJ	641	CE2	TYR	A	94	1	0	0	220	119	290	A	C
ATOM	642	CZ	TYR	A	94	25.269	7.255	34.455	1.00	15.56		A	C

- 80 -

ANISOU	642	CZ	TYR	A	94	1649	1854	1770	-374	23	31	A	C
SIGUIJ	642	CZ	TYR	A	94	1	0	0	220	119	290	A	C
ATOM	643	OH	TYR	A	94	24.616	8.431	34.713	1.00	16.26		A	O
ANISOU	643	OH	TYR	A	94	2237	2035	1910	-48	22	-4	A	O
SIGUIJ	643	OH	TYR	A	94	1	0	0	221	55	289	A	O
ATOM	644	C	TYR	A	94	28.994	4.752	32.342	1.00	20.49		A	C
ANISOU	644	C	TYR	A	94	1698	3273	2675	-205	15	2	A	C
SIGUIJ	644	C	TYR	A	94	1	0	0	220	119	290	A	C
ATOM	645	O	TYR	A	94	29.967	4.779	33.096	1.00	20.98		A	O
ANISOU	645	O	TYR	A	94	1824	4079	2897	-213	-149	-19	A	O
SIGUIJ	645	O	TYR	A	94	1	0	0	221	55	289	A	O
ATOM	646	N	SER	A	95	28.623	5.734	31.536	1.00	21.52		A	N
ANISOU	646	N	SER	A	95	1637	3332	2624	-119	145	13	A	N
SIGUIJ	646	N	SER	A	95	1	0	0	221	62	289	A	N
ATOM	647	CA	SER	A	95	29.362	6.989	31.443	1.00	22.67		A	C
ANISOU	647	CA	SER	A	95	2089	3501	3158	-388	156	47	A	C
SIGUIJ	647	CA	SER	A	95	1	0	0	220	118	290	A	C
ATOM	648	CB	SER	A	95	29.691	7.323	29.984	1.00	22.92		A	C
ANISOU	648	CB	SER	A	95	2562	2915	3189	-9	350	-2	A	C
SIGUIJ	648	CB	SER	A	95	1	0	0	220	118	290	A	C
ATOM	649	OG	SER	A	95	30.349	8.587	29.868	1.00	23.39		A	O
ANISOU	649	OG	SER	A	95	2664	2945	3663	-58	370	36	A	O
SIGUIJ	649	OG	SER	A	95	1	0	0	221	55	289	A	O
ATOM	650	C	SER	A	95	28.503	8.103	31.972	1.00	23.35		A	C
ANISOU	650	C	SER	A	95	2613	3917	2845	123	-66	22	A	C
SIGUIJ	650	C	SER	A	95	1	0	0	220	118	290	A	C
ATOM	651	O	SER	A	95	27.447	8.418	31.383	1.00	23.22		A	O
ANISOU	651	O	SER	A	95	2406	2721	2567	-271	111	96	A	O
SIGUIJ	651	O	SER	A	95	1	0	0	221	55	289	A	O
ATOM	652	N	THR	A	96	28.986	8.760	33.015	1.00	24.40		A	N
ANISOU	652	N	THR	A	96	2502	3902	2847	184	-57	18	A	N
SIGUIJ	652	N	THR	A	96	1	0	0	221	62	289	A	N
ATOM	653	CA	THR	A	96	28.311	9.981	33.445	1.00	25.35		A	C
ANISOU	653	CA	THR	A	96	3199	4099	4076	423	382	-155	A	C
SIGUIJ	653	CA	THR	A	96	1	0	0	220	118	290	A	C
ATOM	654	CB	THR	A	96	28.954	10.613	34.718	1.00	25.49		A	C
ANISOU	654	CB	THR	A	96	4324	4243	4194	7	9	1	A	C
SIGUIJ	654	CB	THR	A	96	1	0	0	220	118	290	A	C
ATOM	655	OG1	THR	A	96	30.207	11.246	34.389	1.00	26.34		A	O
ANISOU	655	OG1	THR	A	96	4383	4266	5130	8	242	12	A	O
SIGUIJ	655	OG1	THR	A	96	1	0	0	221	55	289	A	O
ATOM	656	CG2	THR	A	96	29.150	9.564	35.786	1.00	25.75		A	C
ANISOU	656	CG2	THR	A	96	4300	4244	4201	5	-6	0	A	C
SIGUIJ	656	CG2	THR	A	96	1	0	0	220	117	290	A	C
ATOM	657	C	THR	A	96	28.271	11.064	32.364	1.00	25.73		A	C
ANISOU	657	C	THR	A	96	3284	4232	4245	-37	-73	-3	A	C
SIGUIJ	657	C	THR	A	96	1	0	0	220	117	290	A	C
ATOM	658	O	THR	A	96	27.348	11.863	32.334	1.00	26.22		A	O
ANISOU	658	O	THR	A	96	3374	4343	5847	63	-110	5	A	O
SIGUIJ	658	O	THR	A	96	1	0	0	221	55	289	A	O
ATOM	659	N	GLN	A	97	29.223	11.086	31.438	1.00	25.95		A	N

ANISOU	659	N	GLN	A	97	3446	2803	4422	-4	98	0	A	N
SIGUIJ	659	N	GLN	A	97	1	0	0	221	62	289	A	N
ATOM	660	CA	GLN	A	97	29.316	12.202	30.515	1.00	26.11		A	C
ANISOU	660	CA	GLN	A	97	4352	2818	4419	-155	4	5	A	C
SIGUIJ	660	CA	GLN	A	97	1	0	0	220	117	290	A	C
ATOM	661	CB	GLN	A	97	30.759	12.402	30.099	1.00	26.98		A	C
ANISOU	661	CB	GLN	A	97	4370	3746	4402	-291	2	-12	A	C
SIGUIJ	661	CB	GLN	A	97	1	0	0	220	117	290	A	C
ATOM	662	CG	GLN	A	97	30.868	13.209	28.809	1.00	28.30		A	C
ANISOU	662	CG	GLN	A	97	7564	3747	4466	113	518	18	A	C
SIGUIJ	662	CG	GLN	A	97	1	0	0	220	117	290	A	C
ATOM	663	CD	GLN	A	97	32.287	13.304	28.275	1.00	28.85		A	C
ANISOU	663	CD	GLN	A	97	7752	12170	5505	-481	913	-68	A	C
SIGUIJ	663	CD	GLN	A	97	1	0	0	220	117	290	A	C
ATOM	664	OE1	GLN	A	97	33.062	12.322	28.317	1.00	29.55		A	O
ANISOU	664	OE1	GLN	A	97	7610	12063	21148	-623	173	18	A	O
SIGUIJ	664	OE1	GLN	A	97	1	0	0	221	55	289	A	O
ATOM	665	NE2	GLN	A	97	32.643	14.484	27.760	1.00	29.45		A	N
ANISOU	665	NE2	GLN	A	97	8173	12295	5335	-805	457	-5	A	N
SIGUIJ	665	NE2	GLN	A	97	1	0	0	221	62	289	A	N
ATOM	666	C	GLN	A	97	28.464	11.981	29.254	1.00	25.48		A	C
ANISOU	666	C	GLN	A	97	4377	3209	4425	-221	-1	-4	A	C
SIGUIJ	666	C	GLN	A	97	1	0	0	220	116	290	A	C
ATOM	667	O	GLN	A	97	27.764	12.899	28.770	1.00	25.97		A	O
ANISOU	667	O	GLN	A	97	4438	3244	4429	-178	0	-1	A	O
SIGUIJ	667	O	GLN	A	97	1	0	0	221	55	289	A	O
ATOM	668	N	THR	A	98	28.517	10.768	28.709	1.00	24.71		A	N
ANISOU	668	N	THR	A	98	2139	3129	4134	-535	501	154	A	N
SIGUIJ	668	N	THR	A	98	1	0	0	221	62	289	A	N
ATOM	669	CA	THR	A	98	27.845	10.474	27.448	1.00	23.55		A	C
ANISOU	669	CA	THR	A	98	2234	2397	4212	-131	363	126	A	C
SIGUIJ	669	CA	THR	A	98	1	0	0	220	116	290	A	C
ATOM	670	CB	THR	A	98	28.672	9.553	26.535	1.00	24.14		A	C
ANISOU	670	CB	THR	A	98	2923	2652	4789	8	855	-11	A	C
SIGUIJ	670	CB	THR	A	98	1	0	0	220	116	290	A	C
ATOM	671	OG1	THR	A	98	28.693	8.242	27.090	1.00	25.41		A	O
ANISOU	671	OG1	THR	A	98	2682	2630	4677	18	885	-60	A	O
SIGUIJ	671	OG1	THR	A	98	1	0	0	221	55	289	A	O
ATOM	672	CG2	THR	A	98	30.139	10.013	26.443	1.00	24.07		A	C
ANISOU	672	CG2	THR	A	98	2936	2641	10007	22	1164	50	A	C
SIGUIJ	672	CG2	THR	A	98	1	0	0	220	116	290	A	C
ATOM	673	C	THR	A	98	26.474	9.803	27.646	1.00	22.30		A	C
ANISOU	673	C	THR	A	98	2155	2072	2681	3	206	9	A	C
SIGUIJ	673	C	THR	A	98	1	0	0	220	116	290	A	C
ATOM	674	O	THR	A	98	25.704	9.655	26.689	1.00	22.13		A	O
ANISOU	674	O	THR	A	98	2401	3340	2810	-247	48	20	A	O
SIGUIJ	674	O	THR	A	98	1	0	0	221	55	289	A	O
ATOM	675	N	HIS	A	99	26.193	9.360	28.868	1.00	20.81		A	N
ANISOU	675	N	HIS	A	99	1992	1996	2663	1	155	-3	A	N
SIGUIJ	675	N	HIS	A	99	1	0	0	221	62	289	A	N
ATOM	676	CA	HIS	A	99	24.951	8.634	29.168	1.00	19.34		A	C

ANISOU	676	CA	HIS	A	99	1983	1987	2190	-2	56	0	A	C
SIGUIJ	676	CA	HIS	A	99	1	0	0	220	116	290	A	C
ATOM	677	CB	HIS	A	99	23.715	9.438	28.729	1.00	19.79		A	C
ANISOU	677	CB	HIS	A	99	2185	2005	3747	4	-484	19	A	C
SIGUIJ	677	CB	HIS	A	99	1	0	0	220	115	290	A	C
ATOM	678	CG	HIS	A	99	23.728	10.846	29.213	1.00	20.14		A	C
ANISOU	678	CG	HIS	A	99	2351	2015	3830	-96	-197	-2	A	C
SIGUIJ	678	CG	HIS	A	99	1	0	0	220	115	290	A	C
ATOM	679	CD2	HIS	A	99	24.036	11.996	28.581	1.00	20.41		A	C
ANISOU	679	CD2	HIS	A	99	2203	2017	3899	-57	-203	33	A	C
SIGUIJ	679	CD2	HIS	A	99	1	0	0	220	115	290	A	C
ATOM	680	ND1	HIS	A	99	23.382	11.190	30.501	1.00	20.50		A	N
ANISOU	680	ND1	HIS	A	99	2303	1993	3822	-68	-213	25	A	N
SIGUIJ	680	ND1	HIS	A	99	1	0	0	221	62	289	A	N
ATOM	681	CE1	HIS	A	99	23.466	12.501	30.641	1.00	20.81		A	C
ANISOU	681	CE1	HIS	A	99	3146	2005	4017	-152	95	-5	A	C
SIGUIJ	681	CE1	HIS	A	99	1	0	0	220	115	290	A	C
ATOM	682	NE2	HIS	A	99	23.862	13.012	29.487	1.00	20.46		A	N
ANISOU	682	NE2	HIS	A	99	2633	2027	3964	-118	-62	3	A	N
SIGUIJ	682	NE2	HIS	A	99	1	0	0	221	62	289	A	N
ATOM	683	C	HIS	A	99	24.866	7.234	28.583	1.00	18.13		A	C
ANISOU	683	C	HIS	A	99	1816	1980	2160	34	45	-7	A	C
SIGUIJ	683	C	HIS	A	99	1	0	0	220	115	290	A	C
ATOM	684	O	HIS	A	99	23.823	6.602	28.685	1.00	17.56		A	O
ANISOU	684	O	HIS	A	99	1823	2014	1995	16	39	-3	A	O
SIGUIJ	684	O	HIS	A	99	1	0	0	221	55	289	A	O
ATOM	685	N	VAL	A	100	25.945	6.723	27.986	1.00	16.94		A	N
ANISOU	685	N	VAL	A	100	1769	1861	2023	-14	-8	-1	A	N
SIGUIJ	685	N	VAL	A	100	1	0	0	221	62	289	A	N
ATOM	686	CA	VAL	A	100	25.868	5.369	27.479	1.00	15.87		A	C
ANISOU	686	CA	VAL	A	100	2252	1850	1935	-47	6	-1	A	C
SIGUIJ	686	CA	VAL	A	100	1	0	0	220	115	290	A	C
ATOM	687	CB	VAL	A	100	27.067	5.027	26.514	1.00	16.42		A	C
ANISOU	687	CB	VAL	A	100	2363	2101	2040	27	102	9	A	C
SIGUIJ	687	CB	VAL	A	100	1	0	0	220	114	290	A	C
ATOM	688	CG1	VAL	A	100	27.048	5.936	25.329	1.00	17.26		A	C
ANISOU	688	CG1	VAL	A	100	5438	3054	2562	1740	1368	709	A	C
SIGUIJ	688	CG1	VAL	A	100	1	0	0	220	114	290	A	C
ATOM	689	CG2	VAL	A	100	28.328	5.041	27.227	1.00	17.69		A	C
ANISOU	689	CG2	VAL	A	100	2424	2757	2236	10	-1	0	A	C
SIGUIJ	689	CG2	VAL	A	100	1	0	0	220	114	290	A	C
ATOM	690	C	VAL	A	100	25.769	4.380	28.619	1.00	14.72		A	C
ANISOU	690	C	VAL	A	100	1790	1813	1929	-4	3	0	A	C
SIGUIJ	690	C	VAL	A	100	1	0	0	220	114	290	A	C
ATOM	691	O	VAL	A	100	26.243	4.597	29.731	1.00	13.86		A	O
ANISOU	691	O	VAL	A	100	1438	1838	1841	-123	192	52	A	O
SIGUIJ	691	O	VAL	A	100	1	0	0	221	55	289	A	O
ATOM	692	N	ASN	A	101	25.088	3.291	28.328	1.00	14.10		A	N
ANISOU	692	N	ASN	A	101	1521	1758	1671	104	275	-91	A	N
SIGUIJ	692	N	ASN	A	101	1	0	0	221	62	289	A	N
ATOM	693	CA	ASN	A	101	24.902	2.223	29.310	1.00	13.56		A	C

ANISOU	693	CA	ASN	A	101	1559	1763	1689	87	245	-77	A	C
SIGUIJ	693	CA	ASN	A	101	1	0	0	220	114	290	A	C
ATOM	694	CB	ASN	A	101	26.234	1.525	29.592	1.00	14.79		A	C
ANISOU	694	CB	ASN	A	101	1609	1960	2094	186	184	-71	A	C
SIGUIJ	694	CB	ASN	A	101	1	0	0	220	114	290	A	C
ATOM	695	CG	ASN	A	101	26.820	0.963	28.306	1.00	15.68		A	C
ANISOU	695	CG	ASN	A	101	1696	2225	2125	340	181	-106	A	C
SIGUIJ	695	CG	ASN	A	101	1	0	0	220	113	290	A	C
ATOM	696	OD1	ASN	A	101	26.100	0.323	27.515	1.00	16.85		A	O
ANISOU	696	OD1	ASN	A	101	1850	2274	2189	254	114	-66	A	O
SIGUIJ	696	OD1	ASN	A	101	1	0	0	221	55	289	A	O
ATOM	697	ND2	ASN	A	101	28.091	1.260	28.064	1.00	17.12		A	N
ANISOU	697	ND2	ASN	A	101	1754	3141	2634	138	263	-32	A	N
SIGUIJ	697	ND2	ASN	A	101	1	0	0	221	62	289	A	N
ATOM	698	C	ASN	A	101	24.208	2.657	30.602	1.00	12.67		A	C
ANISOU	698	C	ASN	A	101	1176	1390	1549	-9	34	1	A	C
SIGUIJ	698	C	ASN	A	101	1	0	0	220	113	290	A	C
ATOM	699	O	ASN	A	101	24.582	2.223	31.707	1.00	12.12		A	O
ANISOU	699	O	ASN	A	101	1255	1474	1494	236	113	-82	A	O
SIGUIJ	699	O	ASN	A	101	1	0	0	221	55	289	A	O
ATOM	700	N	ASP	A	102	23.206	3.509	30.439	1.00	11.51		A	N
ANISOU	700	N	ASP	A	102	1197	1369	1286	-5	3	0	A	N
SIGUIJ	700	N	ASP	A	102	1	0	0	221	62	289	A	N
ATOM	701	CA	ASP	A	102	22.522	4.095	31.589	1.00	11.50		A	C
ANISOU	701	CA	ASP	A	102	1226	1317	1276	-19	0	0	A	C
SIGUIJ	701	CA	ASP	A	102	1	0	0	220	113	290	A	C
ATOM	702	CB	ASP	A	102	21.924	5.449	31.192	1.00	11.19		A	C
ANISOU	702	CB	ASP	A	102	1327	1329	1286	0	-1	0	A	C
SIGUIJ	702	CB	ASP	A	102	1	0	0	220	113	290	A	C
ATOM	703	CG	ASP	A	102	21.442	6.269	32.400	1.00	11.45		A	C
ANISOU	703	CG	ASP	A	102	1369	1344	1283	0	-2	0	A	C
SIGUIJ	703	CG	ASP	A	102	1	0	0	220	113	290	A	C
ATOM	704	OD1	ASP	A	102	21.673	5.856	33.563	1.00	11.51		A	O
ANISOU	704	OD1	ASP	A	102	1251	1347	1283	-10	2	0	A	O
SIGUIJ	704	OD1	ASP	A	102	1	0	0	221	55	289	A	O
ATOM	705	OD2	ASP	A	102	20.801	7.313	32.169	1.00	11.08		A	O
ANISOU	705	OD2	ASP	A	102	1421	1354	1220	9	8	1	A	O
SIGUIJ	705	OD2	ASP	A	102	1	0	0	221	55	289	A	O
ATOM	706	C	ASP	A	102	21.455	3.144	32.131	1.00	11.59		A	C
ANISOU	706	C	ASP	A	102	1223	1280	1252	2	0	0	A	C
SIGUIJ	706	C	ASP	A	102	1	0	0	220	113	290	A	C
ATOM	707	O	ASP	A	102	20.245	3.459	32.084	1.00	12.68		A	O
ANISOU	707	O	ASP	A	102	1258	1687	1990	120	-29	6	A	O
SIGUIJ	707	O	ASP	A	102	1	0	0	221	55	289	A	O
ATOM	708	N	LEU	A	103	21.891	2.007	32.676	1.00	11.50		A	N
ANISOU	708	N	LEU	A	103	1270	1269	1266	0	0	0	A	N
SIGUIJ	708	N	LEU	A	103	1	0	0	221	62	289	A	N
ATOM	709	CA	LEU	A	103	20.952	1.083	33.286	1.00	11.53		A	C
ANISOU	709	CA	LEU	A	103	1278	1263	1325	3	4	0	A	C
SIGUIJ	709	CA	LEU	A	103	1	0	0	220	112	290	A	C
ATOM	710	CB	LEU	A	103	20.328	0.088	32.300	1.00	13.13		A	C

ANISOU	710	CB	LEU A 103	1965	1515	1359	-384	-11	7	A	C
SIGUIJ	710	CB	LEU A 103	1	0	0	220	112	290	A	C
ATOM	711	CG	LEU A 103	21.231	-1.005	31.756	1.00	13.55		A	C
ANISOU	711	CG	LEU A 103	2312	1741	1668	-140	116	-26	A	C
SIGUIJ	711	CG	LEU A 103	1	0	0	220	112	290	A	C
ATOM	712	CD1	LEU A 103	20.335	-2.057	30.957	1.00	14.38		A	C
ANISOU	712	CD1	LEU A 103	2180	1679	1605	-68	167	-20	A	C
SIGUIJ	712	CD1	LEU A 103	1	0	0	220	112	290	A	C
ATOM	713	CD2	LEU A 103	22.241	-0.489	30.744	1.00	14.48		A	C
ANISOU	713	CD2	LEU A 103	2282	1609	1715	-26	149	-6	A	C
SIGUIJ	713	CD2	LEU A 103	1	0	0	220	112	290	A	C
ATOM	714	C	LEU A 103	21.563	0.405	34.495	1.00	10.75		A	C
ANISOU	714	C	LEU A 103	1217	1210	1320	-1	9	-1	A	C
SIGUIJ	714	C	LEU A 103	1	0	0	220	112	290	A	C
ATOM	715	O	LEU A 103	22.807	0.317	34.647	1.00	10.74		A	O
ANISOU	715	O	LEU A 103	1212	1289	1464	5	0	0	A	O
SIGUIJ	715	O	LEU A 103	1	0	0	221	55	289	A	O
ATOM	716	N	MET A 104	20.688	-0.027	35.400	1.00	10.28		A	N
ANISOU	716	N	MET A 104	1183	1062	1306	86	12	-3	A	N
SIGUIJ	716	N	MET A 104	1	0	0	221	62	289	A	N
ATOM	717	CA	MET A 104	21.074	-0.508	36.711	1.00	9.73		A	C
ANISOU	717	CA	MET A 104	1188	1015	1310	2	-12	0	A	C
SIGUIJ	717	CA	MET A 104	1	0	0	220	112	290	A	C
ATOM	718	CB	MET A 104	21.242	0.689	37.670	1.00	9.60		A	C
ANISOU	718	CB	MET A 104	1156	1018	1297	-47	20	0	A	C
SIGUIJ	718	CB	MET A 104	1	0	0	220	111	290	A	C
ATOM	719	CG	MET A 104	21.621	0.322	39.100	1.00	9.22		A	C
ANISOU	719	CG	MET A 104	1309	1117	1294	25	1	0	A	C
SIGUIJ	719	CG	MET A 104	1	0	0	220	111	290	A	C
ATOM	720	SD	MET A 104	21.934	1.769	40.144	1.00	10.10		A	S
ANISOU	720	SD	MET A 104	1365	1162	1408	92	-113	-79	A	S
SIGUIJ	720	SD	MET A 104	1	0	0	221	48	289	A	S
ATOM	721	CE	MET A 104	20.275	2.461	40.318	1.00	9.48		A	C
ANISOU	721	CE	MET A 104	1365	1153	1527	95	-27	5	A	C
SIGUIJ	721	CE	MET A 104	1	0	0	220	111	290	A	C
ATOM	722	C	MET A 104	19.992	-1.444	37.231	1.00	9.69		A	C
ANISOU	722	C	MET A 104	1168	965	1359	60	28	-1	A	C
SIGUIJ	722	C	MET A 104	1	0	0	220	111	290	A	C
ATOM	723	O	MET A 104	18.798	-1.172	37.066	1.00	10.37		A	O
ANISOU	723	O	MET A 104	1184	1080	1646	87	4	1	A	O
SIGUIJ	723	O	MET A 104	1	0	0	221	55	289	A	O
ATOM	724	N	LEU A 105	20.411	-2.514	37.907	1.00	9.28		A	N
ANISOU	724	N	LEU A 105	1116	966	1347	39	1	0	A	N
SIGUIJ	724	N	LEU A 105	1	0	0	221	62	289	A	N
ATOM	725	CA	LEU A 105	19.499	-3.414	38.580	1.00	9.44		A	C
ANISOU	725	CA	LEU A 105	1032	926	1390	124	14	1	A	C
SIGUIJ	725	CA	LEU A 105	1	0	0	220	111	290	A	C
ATOM	726	CB	LEU A 105	19.892	-4.877	38.263	1.00	10.10		A	C
ANISOU	726	CB	LEU A 105	1389	953	1640	202	53	-30	A	C
SIGUIJ	726	CB	LEU A 105	1	0	0	220	111	290	A	C
ATOM	727	CG	LEU A 105	19.402	-5.290	36.891	1.00	10.37		A	C

ANISOU	727	CG	LEU	A	105	1620	1043	1658	20	-1	0	A	C
SIGUIJ	727	CG	LEU	A	105	1	0	0	220	110	290	A	C
ATOM	728	CD1	LEU	A	105	20.243	-6.494	36.416	1.00	11.78		A	C
ANISOU	728	CD1	LEU	A	105	2116	1331	1753	403	-62	-49	A	C
SIGUIJ	728	CD1	LEU	A	105	1	0	0	220	110	290	A	C
ATOM	729	CD2	LEU	A	105	17.882	-5.623	36.914	1.00	11.41		A	C
ANISOU	729	CD2	LEU	A	105	1642	1495	1676	-87	0	-1	A	C
SIGUIJ	729	CD2	LEU	A	105	1	0	0	220	110	290	A	C
ATOM	730	C	LEU	A	105	19.553	-3.168	40.074	1.00	9.78		A	C
ANISOU	730	C	LEU	A	105	1222	1045	1390	44	19	-1	A	C
SIGUIJ	730	C	LEU	A	105	1	0	0	220	110	290	A	C
ATOM	731	O	LEU	A	105	20.639	-3.056	40.668	1.00	10.06		A	O
ANISOU	731	O	LEU	A	105	1251	1567	1485	-8	-34	-1	A	O
SIGUIJ	731	O	LEU	A	105	1	0	0	221	55	289	A	O
ATOM	732	N	VAL	A	106	18.376	-3.053	40.700	1.00	9.72		A	N
ANISOU	732	N	VAL	A	106	1211	1073	1326	60	-6	1	A	N
SIGUIJ	732	N	VAL	A	106	1	0	0	221	62	289	A	N
ATOM	733	CA	VAL	A	106	18.253	-2.806	42.118	1.00	9.98		A	C
ANISOU	733	CA	VAL	A	106	1165	997	1333	-15	-2	0	A	C
SIGUIJ	733	CA	VAL	A	106	1	0	0	220	110	290	A	C
ATOM	734	CB	VAL	A	106	17.319	-1.592	42.401	1.00	9.38		A	C
ANISOU	734	CB	VAL	A	106	1195	1027	1322	18	-11	0	A	C
SIGUIJ	734	CB	VAL	A	106	1	0	0	220	110	290	A	C
ATOM	735	CG1	VAL	A	106	17.014	-1.470	43.855	1.00	10.46		A	C
ANISOU	735	CG1	VAL	A	106	1714	1079	1335	127	79	19	A	C
SIGUIJ	735	CG1	VAL	A	106	1	0	0	220	110	290	A	C
ATOM	736	CG2	VAL	A	106	17.961	-0.326	41.839	1.00	10.19		A	C
ANISOU	736	CG2	VAL	A	106	1372	1081	1382	-80	0	3	A	C
SIGUIJ	736	CG2	VAL	A	106	1	0	0	220	109	290	A	C
ATOM	737	C	VAL	A	106	17.652	-4.046	42.767	1.00	9.99		A	C
ANISOU	737	C	VAL	A	106	1187	973	1384	17	69	0	A	C
SIGUIJ	737	C	VAL	A	106	1	0	0	220	109	290	A	C
ATOM	738	O	VAL	A	106	16.621	-4.558	42.315	1.00	10.40		A	O
ANISOU	738	O	VAL	A	106	1257	1052	1559	-27	-37	2	A	O
SIGUIJ	738	O	VAL	A	106	1	0	0	221	55	289	A	O
ATOM	739	N	LYS	A	107	18.348	-4.591	43.770	1.00	10.39		A	N
ANISOU	739	N	LYS	A	107	1370	1019	1447	76	-6	3	A	N
SIGUIJ	739	N	LYS	A	107	1	0	0	221	62	289	A	N
ATOM	740	CA	LYS	A	107	17.914	-5.842	44.388	1.00	10.98		A	C
ANISOU	740	CA	LYS	A	107	1397	1005	1459	101	3	-2	A	C
SIGUIJ	740	CA	LYS	A	107	1	0	0	220	109	290	A	C
ATOM	741	CB	LYS	A	107	19.106	-6.668	44.803	1.00	11.90		A	C
ANISOU	741	CB	LYS	A	107	1601	1250	1934	297	-164	11	A	C
SIGUIJ	741	CB	LYS	A	107	1	0	0	220	109	290	A	C
ATOM	742	CG	LYS	A	107	18.732	-8.049	45.245	1.00	13.32		A	C
ANISOU	742	CG	LYS	A	107	1830	1239	2066	316	18	-9	A	C
SIGUIJ	742	CG	LYS	A	107	1	0	0	220	109	290	A	C
ATOM	743	CD	LYS	A	107	19.993	-8.863	45.608	1.00	14.98		A	C
ANISOU	743	CD	LYS	A	107	2079	1905	2194	715	85	171	A	C
SIGUIJ	743	CD	LYS	A	107	1	0	0	220	109	290	A	C
ATOM	744	CE	LYS	A	107	19.721	-10.362	45.772	1.00	16.42		A	C

ANISOU	744	CE	LYS	A	107	2713	1921	3605	647	435	263	A	C
SIGUIJ	744	CE	LYS	A	107	1	0	0	220	109	290	A	C
ATOM	745	NZ	LYS	A	107	21.008	-11.032	46.297	1.00	17.72		A	N
ANISOU	745	NZ	LYS	A	107	3026	2306	4028	981	93	-57	A	N
SIGUIJ	745	NZ	LYS	A	107	1	0	0	221	62	289	A	N
ATOM	746	C	LYS	A	107	17.065	-5.531	45.604	1.00	11.00		A	C
ANISOU	746	C	LYS	A	107	1395	1032	1450	71	-1	1	A	C
SIGUIJ	746	C	LYS	A	107	1	0	0	220	108	290	A	C
ATOM	747	O	LYS	A	107	17.547	-4.887	46.553	1.00	11.19		A	O
ANISOU	747	O	LYS	A	107	1567	1170	1442	-78	5	-2	A	O
SIGUIJ	747	O	LYS	A	107	1	0	0	221	55	289	A	O
ATOM	748	N	LEU	A	108	15.802	-5.981	45.603	1.00	11.24		A	N
ANISOU	748	N	LEU	A	108	1422	1231	1342	2	0	0	A	N
SIGUIJ	748	N	LEU	A	108	1	0	0	221	62	289	A	N
ATOM	749	CA	LEU	A	108	14.907	-5.711	46.740	1.00	11.85		A	C
ANISOU	749	CA	LEU	A	108	1465	1277	1352	9	22	1	A	C
SIGUIJ	749	CA	LEU	A	108	1	0	0	220	108	290	A	C
ATOM	750	CB	LEU	A	108	13.474	-6.132	46.387	1.00	12.01		A	C
ANISOU	750	CB	LEU	A	108	1478	1343	1502	-20	-1	0	A	C
SIGUIJ	750	CB	LEU	A	108	1	0	0	220	108	290	A	C
ATOM	751	CG	LEU	A	108	12.919	-5.418	45.167	1.00	11.86		A	C
ANISOU	751	CG	LEU	A	108	1536	1382	1505	24	-4	-2	A	C
SIGUIJ	751	CG	LEU	A	108	1	0	0	220	108	290	A	C
ATOM	752	CD1	LEU	A	108	11.513	-5.984	44.837	1.00	12.58		A	C
ANISOU	752	CD1	LEU	A	108	1614	1501	2352	-35	-229	51	A	C
SIGUIJ	752	CD1	LEU	A	108	1	0	0	220	108	290	A	C
ATOM	753	CD2	LEU	A	108	12.846	-3.926	45.399	1.00	12.88		A	C
ANISOU	753	CD2	LEU	A	108	2113	1389	1608	57	-30	-3	A	C
SIGUIJ	753	CD2	LEU	A	108	1	0	0	220	108	290	A	C
ATOM	754	C	LEU	A	108	15.392	-6.546	47.952	1.00	12.20		A	C
ANISOU	754	C	LEU	A	108	1519	1267	1374	-32	-25	5	A	C
SIGUIJ	754	C	LEU	A	108	1	0	0	220	108	290	A	C
ATOM	755	O	LEU	A	108	15.854	-7.685	47.786	1.00	12.60		A	O
ANISOU	755	O	LEU	A	108	1852	1313	1599	91	70	18	A	O
SIGUIJ	755	O	LEU	A	108	1	0	0	221	55	289	A	O
ATOM	756	N	ASN	A	109	15.259	-6.006	49.139	1.00	12.92		A	N
ANISOU	756	N	ASN	A	109	1573	1345	1374	-40	-4	1	A	N
SIGUIJ	756	N	ASN	A	109	1	0	0	221	62	289	A	N
ATOM	757	CA	ASN	A	109	15.681	-6.757	50.345	1.00	13.41		A	C
ANISOU	757	CA	ASN	A	109	1847	1426	1378	46	-54	-5	A	C
SIGUIJ	757	CA	ASN	A	109	1	0	0	220	107	290	A	C
ATOM	758	CB	ASN	A	109	15.811	-5.836	51.542	1.00	13.05		A	C
ANISOU	758	CB	ASN	A	109	1687	1456	1376	40	-37	-5	A	C
SIGUIJ	758	CB	ASN	A	109	1	0	0	220	107	290	A	C
ATOM	759	CG	ASN	A	109	17.005	-4.891	51.431	1.00	12.98		A	C
ANISOU	759	CG	ASN	A	109	1680	1476	1525	43	-12	-3	A	C
SIGUIJ	759	CG	ASN	A	109	1	0	0	220	107	290	A	C
ATOM	760	OD1	ASN	A	109	17.785	-4.886	50.442	1.00	12.94		A	O
ANISOU	760	OD1	ASN	A	109	1730	1565	1552	32	28	5	A	O
SIGUIJ	760	OD1	ASN	A	109	1	0	0	221	55	289	A	O
ATOM	761	ND2	ASN	A	109	17.173	-4.096	52.470	1.00	13.30		A	N

- 87 -

ANISOU	761	ND2 ASN A 109	1687	1502	1533	28	-5	-1	A	N
SIGUIJ	761	ND2 ASN A 109	1	0	0	221	61	289	A	N
ATOM	762	C ASN A 109	14.724	-7.859	50.719	1.00	14.69		A	C
ANISOU	762	C ASN A 109	2099	1588	1559	-140	26	-7	A	C
SIGUIJ	762	C ASN A 109	1	0	0	220	107	290	A	C
ATOM	763	O ASN A 109	15.098	-8.816	51.433	1.00	14.91		A	O
ANISOU	763	O ASN A 109	2374	1641	1909	-293	-314	134	A	O
SIGUIJ	763	O ASN A 109	1	0	0	221	55	289	A	O
ATOM	764	N ASER A 110	13.476	-7.736	50.267	0.50	15.29		A	N
ANISOU	764	N ASER A 110	2135	1762	1816	-127	-63	22	A	N
SIGUIJ	764	N ASER A 110	1	0	0	221	61	289	A	N
ATOM	765	N BSER A 110	13.510	-7.789	50.203	0.50	17.48		A	N
ANISOU	765	N BSER A 110	2143	1640	1822	-165	-84	33	A	N
SIGUIJ	765	N BSER A 110	1	0	0	221	61	289	A	N
ATOM	766	CA ASER A 110	12.395	-8.696	50.529	0.50	16.79		A	C
ANISOU	766	CA ASER A 110	2341	2020	1933	-347	-38	28	A	C
SIGUIJ	766	CA ASER A 110	1	0	0	220	107	290	A	C
ATOM	767	CA BSER A 110	12.531	-8.835	50.409	0.50	18.98		A	C
ANISOU	767	CA BSER A 110	2251	1710	2035	-244	-20	14	A	C
SIGUIJ	767	CA BSER A 110	1	0	0	220	107	290	A	C
ATOM	768	CB ASER A 110	11.484	-8.210	51.703	0.50	17.69		A	C
ANISOU	768	CB ASER A 110	2668	2689	2019	-1	64	1	A	C
SIGUIJ	768	CB ASER A 110	1	0	0	220	107	290	A	C
ATOM	769	CB BSER A 110	11.640	-8.504	51.614	0.50	19.88		A	C
ANISOU	769	CB BSER A 110	2409	2429	2071	2	24	-1	A	C
SIGUIJ	769	CB BSER A 110	1	0	0	220	107	290	A	C
ATOM	770	OG ASER A 110	10.860	-6.950	51.498	0.50	19.99		A	O
ANISOU	770	OG ASER A 110	2698	2686	2036	1	23	1	A	O
SIGUIJ	770	OG ASER A 110	1	0	0	221	55	289	A	O
ATOM	771	OG BSER A 110	12.411	-8.427	52.800	0.50	22.18		A	O
ANISOU	771	OG BSER A 110	2462	2576	2090	-34	-7	-1	A	O
SIGUIJ	771	OG BSER A 110	1	0	0	221	55	289	A	O
ATOM	772	C ASER A 110	11.603	-8.807	49.216	0.50	17.01		A	C
ANISOU	772	C ASER A 110	2432	1844	1956	-290	-74	37	A	C
SIGUIJ	772	C ASER A 110	1	0	0	220	106	290	A	C
ATOM	773	C BSER A 110	11.713	-8.885	49.138	0.50	19.20		A	C
ANISOU	773	C BSER A 110	2224	1826	2022	-206	-2	1	A	C
SIGUIJ	773	C BSER A 110	1	0	0	220	106	290	A	C
ATOM	774	O ASER A 110	11.619	-7.866	48.392	0.50	16.63		A	O
ANISOU	774	O ASER A 110	1439	1829	1952	-117	96	24	A	O
SIGUIJ	774	O ASER A 110	1	0	0	221	55	289	A	O
ATOM	775	O BSER A 110	11.771	-7.974	48.291	0.50	18.82		A	O
ANISOU	775	O BSER A 110	2693	1817	2024	-219	-7	2	A	O
SIGUIJ	775	O BSER A 110	1	0	0	221	55	289	A	O
ATOM	776	N GLN A 111	10.933	-9.932	48.996	1.00	17.12		A	N
ANISOU	776	N GLN A 111	1988	1698	1958	-28	0	0	A	N
SIGUIJ	776	N GLN A 111	1	0	0	221	61	289	A	N
ATOM	777	CA GLN A 111	10.229	-10.117	47.737	1.00	18.12		A	C
ANISOU	777	CA GLN A 111	2166	1970	1991	-137	-72	43	A	C
SIGUIJ	777	CA GLN A 111	1	0	0	220	106	290	A	C
ATOM	778	CB GLN A 111	9.766	-11.557	47.579	1.00	19.48		A	C

- 88 -

ANISOU	778	CB	GLN	A	111	2371	1998	2746	-187	-160	-30	A	C
SIGUIJ	778	CB	GLN	A	111	1	0	0	220	106	290	A	C
ATOM	779	CG	GLN	A	111	10.845	-12.568	47.392	1.00	22.14		A	C
ANISOU	779	CG	GLN	A	111	2793	2264	7919	80	852	92	A	C
SIGUIJ	779	CG	GLN	A	111	1	0	0	220	106	290	A	C
ATOM	780	CD	GLN	A	111	10.308	-13.819	46.758	1.00	23.28		A	C
ANISOU	780	CD	GLN	A	111	6731	2748	9230	-935	-488	-3	A	C
SIGUIJ	780	CD	GLN	A	111	1	0	0	220	106	290	A	C
ATOM	781	OE1	GLN	A	111	10.959	-14.434	45.907	1.00	24.92		A	O
ANISOU	781	OE1	GLN	A	111	9238	4863	9655	1005	29	-45	A	O
SIGUIJ	781	OE1	GLN	A	111	1	0	0	221	55	289	A	O
ATOM	782	NE2	GLN	A	111	9.103	-14.201	47.157	1.00	24.43		A	N
ANISOU	782	NE2	GLN	A	111	6765	2621	9593	-908	-357	-33	A	N
SIGUIJ	782	NE2	GLN	A	111	1	0	0	221	61	289	A	N
ATOM	783	C	GLN	A	111	9.019	-9.201	47.593	1.00	17.61		A	C
ANISOU	783	C	GLN	A	111	2163	1938	1772	-146	-57	24	A	C
SIGUIJ	783	C	GLN	A	111	1	0	0	220	106	290	A	C
ATOM	784	O	GLN	A	111	8.280	-8.956	48.526	1.00	18.10		A	O
ANISOU	784	O	GLN	A	111	2463	2452	1934	2	144	9	A	O
SIGUIJ	784	O	GLN	A	111	1	0	0	221	55	289	A	O
ATOM	785	N	ALA	A	112	8.811	-8.718	46.377	1.00	17.05		A	N
ANISOU	785	N	ALA	A	112	2003	1853	1753	-48	14	-4	A	N
SIGUIJ	785	N	ALA	A	112	1	0	0	221	61	289	A	N
ATOM	786	CA	ALA	A	112	7.570	-8.041	46.057	1.00	16.69		A	C
ANISOU	786	CA	ALA	A	112	1968	1731	1752	-118	9	-4	A	C
SIGUIJ	786	CA	ALA	A	112	1	0	0	220	106	290	A	C
ATOM	787	CB	ALA	A	112	7.670	-7.434	44.679	1.00	16.65		A	C
ANISOU	787	CB	ALA	A	112	2000	1744	1751	-188	-5	3	A	C
SIGUIJ	787	CB	ALA	A	112	1	0	0	220	105	290	A	C
ATOM	788	C	ALA	A	112	6.462	-9.070	46.059	1.00	16.29		A	C
ANISOU	788	C	ALA	A	112	1843	1588	2130	17	8	0	A	C
SIGUIJ	788	C	ALA	A	112	1	0	0	220	105	290	A	C
ATOM	789	O	ALA	A	112	6.640	-10.181	45.548	1.00	16.84		A	O
ANISOU	789	O	ALA	A	112	1983	1611	2562	-162	436	-121	A	O
SIGUIJ	789	O	ALA	A	112	1	0	0	221	55	289	A	O
ATOM	790	N	ARG	A	113	5.317	-8.648	46.555	1.00	15.89		A	N
ANISOU	790	N	ARG	A	113	1770	1310	2014	-103	-46	3	A	N
SIGUIJ	790	N	ARG	A	113	1	0	0	221	61	289	A	N
ATOM	791	CA	ARG	A	113	4.134	-9.498	46.561	1.00	16.10		A	C
ANISOU	791	CA	ARG	A	113	1809	1395	2123	-170	-36	-3	A	C
SIGUIJ	791	CA	ARG	A	113	1	0	0	220	105	290	A	C
ATOM	792	CB	ARG	A	113	3.307	-9.105	47.789	1.00	16.85		A	C
ANISOU	792	CB	ARG	A	113	1921	1804	2139	10	-9	0	A	C
SIGUIJ	792	CB	ARG	A	113	1	0	0	220	105	290	A	C
ATOM	793	CG	ARG	A	113	2.029	-9.912	47.973	1.00	18.15		A	C
ANISOU	793	CG	ARG	A	113	2179	2462	2531	-397	25	63	A	C
SIGUIJ	793	CG	ARG	A	113	1	0	0	220	105	290	A	C
ATOM	794	CD	ARG	A	113	1.363	-9.577	49.279	1.00	19.35		A	C
ANISOU	794	CD	ARG	A	113	2480	3481	2568	4	76	9	A	C
SIGUIJ	794	CD	ARG	A	113	1	0	0	220	105	290	A	C
ATOM	795	NE	ARG	A	113	0.698	-8.280	49.188	1.00	21.35		A	N

- 89 -

ANISOU	795	NE	ARG	A	113	3765	3821	3177	658	33	35	A	N
SIGUIJ	795	NE	ARG	A	113	1	0	0	221	61	289	A	N
ATOM	796	CZ	ARG	A	113	1.124	-7.145	49.720	1.00	21.76		A	C
ANISOU	796	CZ	ARG	A	113	4752	4010	2907	147	339	40	A	C
SIGUIJ	796	CZ	ARG	A	113	1	0	0	220	105	290	A	C
ATOM	797	NH1	ARG	A	113	2.263	-7.116	50.403	1.00	22.87		A	N
ANISOU	797	NH1	ARG	A	113	4831	9256	3113	35	215	4	A	N
SIGUIJ	797	NH1	ARG	A	113	1	0	0	221	61	289	A	N
ATOM	798	NH2	ARG	A	113	0.407	-6.033	49.560	1.00	22.28		A	N
ANISOU	798	NH2	ARG	A	113	4317	3819	2073	-127	387	-52	A	N
SIGUIJ	798	NH2	ARG	A	113	1	0	0	221	61	289	A	N
ATOM	799	C	ARG	A	113	3.379	-9.243	45.280	1.00	16.20		A	C
ANISOU	799	C	ARG	A	113	1605	1249	2069	-215	83	13	A	C
SIGUIJ	799	C	ARG	A	113	1	0	0	220	104	290	A	C
ATOM	800	O	ARG	A	113	2.898	-8.126	45.043	1.00	15.52		A	O
ANISOU	800	O	ARG	A	113	1821	1271	2200	-140	-20	-2	A	O
SIGUIJ	800	O	ARG	A	113	1	0	0	221	55	289	A	O
ATOM	801	N	LEU	A	114	3.248	-10.255	44.430	1.00	16.44		A	N
ANISOU	801	N	LEU	A	114	1747	1247	2127	-113	-55	1	A	N
SIGUIJ	801	N	LEU	A	114	1	0	0	221	61	289	A	N
ATOM	802	CA	LEU	A	114	2.613	-10.095	43.145	1.00	17.11		A	C
ANISOU	802	CA	LEU	A	114	1733	1504	2137	-27	-60	-2	A	C
SIGUIJ	802	CA	LEU	A	114	1	0	0	220	104	290	A	C
ATOM	803	CB	LEU	A	114	3.090	-11.177	42.160	1.00	16.77		A	C
ANISOU	803	CB	LEU	A	114	1677	1500	2110	-15	-116	2	A	C
SIGUIJ	803	CB	LEU	A	114	1	0	0	220	104	290	A	C
ATOM	804	CG	LEU	A	114	4.604	-11.244	41.936	1.00	16.57		A	C
ANISOU	804	CG	LEU	A	114	1686	1414	2554	-26	-58	2	A	C
SIGUIJ	804	CG	LEU	A	114	1	0	0	220	104	290	A	C
ATOM	805	CD1	LEU	A	114	4.934	-12.344	40.931	1.00	16.95		A	C
ANISOU	805	CD1	LEU	A	114	2302	1465	2569	124	-15	2	A	C
SIGUIJ	805	CD1	LEU	A	114	1	0	0	220	104	290	A	C
ATOM	806	CD2	LEU	A	114	5.114	-9.909	41.432	1.00	17.11		A	C
ANISOU	806	CD2	LEU	A	114	2276	1462	3081	-108	329	44	A	C
SIGUIJ	806	CD2	LEU	A	114	1	0	0	220	104	290	A	C
ATOM	807	C	LEU	A	114	1.097	-10.149	43.285	1.00	18.00		A	C
ANISOU	807	C	LEU	A	114	1728	1573	2995	-6	15	0	A	C
SIGUIJ	807	C	LEU	A	114	1	0	0	220	104	290	A	C
ATOM	808	O	LEU	A	114	0.577	-10.827	44.215	1.00	18.24		A	O
ANISOU	808	O	LEU	A	114	2536	1872	3167	-325	254	55	A	O
SIGUIJ	808	O	LEU	A	114	1	0	0	221	55	289	A	O
ATOM	809	N	SER	A	115	0.408	-9.482	42.337	1.00	18.77		A	N
ANISOU	809	N	SER	A	115	1763	1552	3043	-36	-49	4	A	N
SIGUIJ	809	N	SER	A	115	1	0	0	221	61	289	A	N
ATOM	810	CA	SER	A	115	-1.055	-9.364	42.358	1.00	19.64		A	C
ANISOU	810	CA	SER	A	115	1766	2476	3337	46	-53	3	A	C
SIGUIJ	810	CA	SER	A	115	1	0	0	220	104	290	A	C
ATOM	811	CB	SER	A	115	-1.452	-8.523	43.539	1.00	20.16		A	C
ANISOU	811	CB	SER	A	115	2626	2474	3445	12	261	-3	A	C
SIGUIJ	811	CB	SER	A	115	1	0	0	220	104	290	A	C
ATOM	812	OG	SER	A	115	-1.140	-7.162	43.223	1.00	21.32		A	O

- 90 -

ANISOU	812	OG	SER A 115	3340	2498	4640	27	979	112	A	O
SIGUIJ	812	OG	SER A 115	1	0	0	221	55	289	A	O
ATOM	813	C	SER A 115	-1.528	-8.645	41.083	1.00	19.90		A	C
ANISOU	813	C	SER A 115	1763	2272	3371	-161	-175	-32	A	C
SIGUIJ	813	C	SER A 115	1	0	0	220	103	290	A	C
ATOM	814	O	SER A 115	-0.753	-8.325	40.227	1.00	20.05		A	O
ANISOU	814	O	SER A 115	1816	1909	3486	9	-71	3	A	O
SIGUIJ	814	O	SER A 115	1	0	0	221	54	289	A	O
ATOM	815	N	SER A 116	-2.838	-8.428	40.931	1.00	20.69		A	N
ANISOU	815	N	SER A 116	1795	2418	5718	-141	-452	-36	A	N
SIGUIJ	815	N	SER A 116	1	0	0	221	51	289	A	N
ATOM	816	CA	SER A 116	-3.329	-7.557	39.857	1.00	20.69		A	C
ANISOU	816	CA	SER A 116	1953	2455	5706	-48	-455	-54	A	C
SIGUIJ	816	CA	SER A 116	1	0	0	220	103	290	A	C
ATOM	817	CB	SER A 116	-4.865	-7.371	39.972	1.00	21.19		A	C
ANISOU	817	CB	SER A 116	1986	3668	8877	97	-207	8	A	C
SIGUIJ	817	CB	SER A 116	1	0	0	220	103	290	A	C
ATOM	818	OG	SER A 116	-5.215	-6.768	41.202	1.00	22.45		A	O
ANISOU	818	OG	SER A 116	2138	3815	8778	623	-419	88	A	O
SIGUIJ	818	OG	SER A 116	1	0	0	221	54	289	A	O
ATOM	819	C	SER A 116	-2.644	-6.171	39.784	1.00	20.42		A	C
ANISOU	819	C	SER A 116	2214	2521	4640	-172	-509	-96	A	C
SIGUIJ	819	C	SER A 116	1	0	0	220	103	290	A	C
ATOM	820	O	SER A 116	-2.550	-5.610	38.697	1.00	21.05		A	O
ANISOU	820	O	SER A 116	2131	2640	4675	-95	-490	-34	A	O
SIGUIJ	820	O	SER A 116	1	0	0	221	54	289	A	O
ATOM	821	N	MET A 117	-2.153	-5.667	40.921	1.00	19.82		A	N
ANISOU	821	N	MET A 117	1407	1770	4466	182	-306	96	A	N
SIGUIJ	821	N	MET A 117	1	0	0	221	61	289	A	N
ATOM	822	CA	MET A 117	-1.520	-4.350	40.929	1.00	19.03		A	C
ANISOU	822	CA	MET A 117	1729	1849	3850	32	-57	7	A	C
SIGUIJ	822	CA	MET A 117	1	0	0	220	103	290	A	C
ATOM	823	CB	MET A 117	-1.943	-3.547	42.132	1.00	20.66		A	C
ANISOU	823	CB	MET A 117	2266	1946	3895	138	61	7	A	C
SIGUIJ	823	CB	MET A 117	1	0	0	220	103	290	A	C
ATOM	824	CG	MET A 117	-3.379	-2.897	41.980	1.00	22.36		A	C
ANISOU	824	CG	MET A 117	2554	3281	5392	737	-96	42	A	C
SIGUIJ	824	CG	MET A 117	1	0	0	220	103	290	A	C
ATOM	825	SD	MET A 117	-3.694	-2.019	40.387	1.00	24.64		A	S
ANISOU	825	SD	MET A 117	2679	3265	5461	451	-289	102	A	S
SIGUIJ	825	SD	MET A 117	1	0	0	221	48	289	A	S
ATOM	826	CE	MET A 117	-3.179	-0.412	40.861	1.00	23.83		A	C
ANISOU	826	CE	MET A 117	3978	3438	5677	-2	-189	3	A	C
SIGUIJ	826	CE	MET A 117	1	0	0	220	103	290	A	C
ATOM	827	C	MET A 117	0.001	-4.376	40.899	1.00	17.74		A	C
ANISOU	827	C	MET A 117	1732	1355	2342	25	-74	1	A	C
SIGUIJ	827	C	MET A 117	1	0	0	220	102	290	A	C
ATOM	828	O	MET A 117	0.612	-3.307	40.805	1.00	17.15		A	O
ANISOU	828	O	MET A 117	1737	1336	2063	38	-73	-2	A	O
SIGUIJ	828	O	MET A 117	1	0	0	221	54	289	A	O
ATOM	829	N	VAL A 118	0.611	-5.574	41.004	1.00	16.28		A	N

- 91 -

ANISOU	829	N	VAL A 118	1624	1330	2554	-26	-76	3	A	N
SIGUIJ	829	N	VAL A 118	1	0	0	221	61	289	A	N
ATOM	830	CA	VAL A 118	2.095	-5.723	40.950	1.00	15.27		A	C
ANISOU	830	CA	VAL A 118	1629	1193	2104	-36	-94	1	A	C
SIGUIJ	830	CA	VAL A 118	1	0	0	220	102	290	A	C
ATOM	831	CB	VAL A 118	2.649	-5.931	42.377	1.00	14.08		A	C
ANISOU	831	CB	VAL A 118	1405	1263	2061	3	12	0	A	C
SIGUIJ	831	CB	VAL A 118	1	0	0	220	102	290	A	C
ATOM	832	CG1	VAL A 118	4.176	-6.145	42.338	1.00	13.42		A	C
ANISOU	832	CG1	VAL A 118	1408	1247	2297	-1	22	0	A	C
SIGUIJ	832	CG1	VAL A 118	1	0	0	220	102	290	A	C
ATOM	833	CG2	VAL A 118	2.304	-4.722	43.232	1.00	14.26		A	C
ANISOU	833	CG2	VAL A 118	1562	1269	2099	11	76	1	A	C
SIGUIJ	833	CG2	VAL A 118	1	0	0	220	102	290	A	C
ATOM	834	C	VAL A 118	2.414	-6.890	40.055	1.00	15.11		A	C
ANISOU	834	C	VAL A 118	1434	1161	2121	-131	-60	1	A	C
SIGUIJ	834	C	VAL A 118	1	0	0	220	102	290	A	C
ATOM	835	O	VAL A 118	2.127	-8.060	40.396	1.00	14.71		A	O
ANISOU	835	O	VAL A 118	1814	1179	2218	-232	-43	-2	A	O
SIGUIJ	835	O	VAL A 118	1	0	0	221	54	289	A	O
ATOM	836	N	LYS A 119	2.949	-6.593	38.882	1.00	15.20		A	N
ANISOU	836	N	LYS A 119	1746	1300	2172	-183	63	7	A	N
SIGUIJ	836	N	LYS A 119	1	0	0	221	61	289	A	N
ATOM	837	CA	LYS A 119	3.202	-7.592	37.838	1.00	15.90		A	C
ANISOU	837	CA	LYS A 119	1689	1303	2175	-188	65	3	A	C
SIGUIJ	837	CA	LYS A 119	1	0	0	220	102	290	A	C
ATOM	838	CB	LYS A 119	2.212	-7.325	36.693	1.00	17.02		A	C
ANISOU	838	CB	LYS A 119	2159	1934	2519	-57	-311	59	A	C
SIGUIJ	838	CB	LYS A 119	1	0	0	220	102	290	A	C
ATOM	839	CG	LYS A 119	2.221	-8.230	35.431	1.00	18.86		A	C
ANISOU	839	CG	LYS A 119	2605	2223	2673	-541	42	-144	A	C
SIGUIJ	839	CG	LYS A 119	1	0	0	220	102	290	A	C
ATOM	840	CD	LYS A 119	1.015	-7.886	34.493	1.00	20.61		A	C
ANISOU	840	CD	LYS A 119	2753	4116	2776	-120	4	9	A	C
SIGUIJ	840	CD	LYS A 119	1	0	0	220	101	290	A	C
ATOM	841	CE	LYS A 119	1.219	-6.625	33.566	1.00	21.72		A	C
ANISOU	841	CE	LYS A 119	12388	4128	2918	-702	1335	-104	A	C
SIGUIJ	841	CE	LYS A 119	1	0	0	220	101	290	A	C
ATOM	842	NZ	LYS A 119	0.012	-6.188	32.720	1.00	22.83		A	N
ANISOU	842	NZ	LYS A 119	15093	9430	6830	1341	-1471	-282	A	N
SIGUIJ	842	NZ	LYS A 119	1	0	0	221	61	289	A	N
ATOM	843	C	LYS A 119	4.607	-7.439	37.305	1.00	15.59		A	C
ANISOU	843	C	LYS A 119	1648	1253	1821	-207	-51	-38	A	C
SIGUIJ	843	C	LYS A 119	1	0	0	220	101	290	A	C
ATOM	844	O	LYS A 119	5.169	-6.306	37.257	1.00	15.70		A	O
ANISOU	844	O	LYS A 119	1822	1301	2500	-310	-73	-4	A	O
SIGUIJ	844	O	LYS A 119	1	0	0	221	54	289	A	O
ATOM	845	N	LYS A 120	5.202	-8.532	36.877	1.00	14.95		A	N
ANISOU	845	N	LYS A 120	1615	1235	1756	-241	-16	-21	A	N
SIGUIJ	845	N	LYS A 120	1	0	0	221	61	289	A	N
ATOM	846	CA	LYS A 120	6.481	-8.482	36.187	1.00	15.06		A	C

- 92 -

ANISOU	846	CA	LYS	A	120	1640	1387	1823	-226	23	20	A	C
SIGUIJ	846	CA	LYS	A	120	1	0	0	220	101	290	A	C
ATOM	847	CB	LYS	A	120	7.023	-9.919	36.034	1.00	15.87		A	C
ANISOU	847	CB	LYS	A	120	2003	1450	2116	-80	13	-2	A	C
SIGUIJ	847	CB	LYS	A	120	1	0	0	220	101	290	A	C
ATOM	848	CG	LYS	A	120	7.214	-10.634	37.396	1.00	17.11		A	C
ANISOU	848	CG	LYS	A	120	2185	1579	2148	-69	-15	47	A	C
SIGUIJ	848	CG	LYS	A	120	1	0	0	220	101	290	A	C
ATOM	849	CD	LYS	A	120	7.903	-12.032	37.231	1.00	19.27		A	C
ANISOU	849	CD	LYS	A	120	2483	1637	3342	40	265	32	A	C
SIGUIJ	849	CD	LYS	A	120	1	0	0	220	101	290	A	C
ATOM	850	CE	LYS	A	120	7.005	-13.100	36.616	1.00	20.80		A	C
ANISOU	850	CE	LYS	A	120	3181	2025	3841	-384	-22	-5	A	C
SIGUIJ	850	CE	LYS	A	120	1	0	0	220	101	290	A	C
ATOM	851	NZ	LYS	A	120	7.677	-14.431	36.757	1.00	22.64		A	N
ANISOU	851	NZ	LYS	A	120	4052	2242	5342	35	-275	13	A	N
SIGUIJ	851	NZ	LYS	A	120	1	0	0	221	61	289	A	N
ATOM	852	C	LYS	A	120	6.322	-7.836	34.835	1.00	14.75		A	C
ANISOU	852	C	LYS	A	120	1766	1360	1821	-282	-1	14	A	C
SIGUIJ	852	C	LYS	A	120	1	0	0	220	100	290	A	C
ATOM	853	O	LYS	A	120	5.385	-8.141	34.071	1.00	14.75		A	O
ANISOU	853	O	LYS	A	120	1794	1689	1830	-381	1	-4	A	O
SIGUIJ	853	O	LYS	A	120	1	0	0	221	54	289	A	O
ATOM	854	N	VAL	A	121	7.278	-6.993	34.497	1.00	13.48		A	N
ANISOU	854	N	VAL	A	121	1616	1143	1653	-106	-1	-3	A	N
SIGUIJ	854	N	VAL	A	121	1	0	0	221	61	289	A	N
ATOM	855	CA	VAL	A	121	7.253	-6.364	33.174	1.00	13.91		A	C
ANISOU	855	CA	VAL	A	121	1816	1210	1670	-227	-55	38	A	C
SIGUIJ	855	CA	VAL	A	121	1	0	0	220	100	290	A	C
ATOM	856	CB	VAL	A	121	8.314	-5.209	33.126	1.00	13.56		A	C
ANISOU	856	CB	VAL	A	121	1770	1166	1874	-183	-1	-1	A	C
SIGUIJ	856	CB	VAL	A	121	1	0	0	220	100	290	A	C
ATOM	857	CG1	VAL	A	121	9.753	-5.773	32.994	1.00	13.96		A	C
ANISOU	857	CG1	VAL	A	121	1784	1184	2409	-164	50	1	A	C
SIGUIJ	857	CG1	VAL	A	121	1	0	0	220	100	290	A	C
ATOM	858	CG2	VAL	A	121	7.983	-4.239	32.010	1.00	13.81		A	C
ANISOU	858	CG2	VAL	A	121	1908	1183	1879	-146	-1	3	A	C
SIGUIJ	858	CG2	VAL	A	121	1	0	0	220	100	290	A	C
ATOM	859	C	VAL	A	121	7.593	-7.395	32.072	1.00	14.19		A	C
ANISOU	859	C	VAL	A	121	1805	1241	1751	-314	16	-26	A	C
SIGUIJ	859	C	VAL	A	121	1	0	0	220	100	290	A	C
ATOM	860	O	VAL	A	121	8.297	-8.355	32.317	1.00	14.22		A	O
ANISOU	860	O	VAL	A	121	1970	1332	1922	-204	-9	12	A	O
SIGUIJ	860	O	VAL	A	121	1	0	0	221	54	289	A	O
ATOM	861	N	ARG	A	122	7.115	-7.145	30.859	1.00	15.04		A	N
ANISOU	861	N	ARG	A	122	1902	1439	1781	-380	-36	47	A	N
SIGUIJ	861	N	ARG	A	122	1	0	0	221	61	289	A	N
ATOM	862	CA	ARG	A	122	7.471	-7.987	29.718	1.00	16.06		A	C
ANISOU	862	CA	ARG	A	122	2015	1586	1913	-475	71	-103	A	C
SIGUIJ	862	CA	ARG	A	122	1	0	0	220	100	290	A	C
ATOM	863	CB	ARG	A	122	6.305	-8.073	28.739	1.00	17.68		A	C

- 93 -

ANISOU	863	CB	ARG	A	122	2071	2635	1977	-651	6	24	A	C
SIGUIJ	863	CB	ARG	A	122	1	0	0	220	100	290	A	C
ATOM	864	CG	ARG	A	122	6.544	-9.094	27.666	1.00	20.19		A	C
ANISOU	864	CG	ARG	A	122	3512	2743	2006	-306	3	-1	A	C
SIGUIJ	864	CG	ARG	A	122	1	0	0	220	100	290	A	C
ATOM	865	CD	ARG	A	122	5.253	-9.413	26.867	1.00	22.38		A	C
ANISOU	865	CD	ARG	A	122	4419	9397	2928	-2250	-689	483	A	C
SIGUIJ	865	CD	ARG	A	122	1	0	0	220	99	290	A	C
ATOM	866	NE	ARG	A	122	5.370	-10.389	25.762	1.00	24.54		A	N
ANISOU	866	NE	ARG	A	122	16521	10017	3336	-1114	-402	52	A	N
SIGUIJ	866	NE	ARG	A	122	1	0	0	221	61	289	A	N
ATOM	867	CZ	ARG	A	122	5.921	-11.604	25.812	1.00	25.24		A	C
ANISOU	867	CZ	ARG	A	122	19802	10702	6450	339	-866	-27	A	C
SIGUIJ	867	CZ	ARG	A	122	1	0	0	220	99	290	A	C
ATOM	868	NH1	ARG	A	122	6.484	-12.073	26.931	1.00	26.18		A	N
ANISOU	868	NH1	ARG	A	122	14276	11218	5120	412	1934	164	A	N
SIGUIJ	868	NH1	ARG	A	122	1	0	0	221	61	289	A	N
ATOM	869	NH2	ARG	A	122	5.850	-12.387	24.728	1.00	25.97		A	N
ANISOU	869	NH2	ARG	A	122	5520	10676	6376	380	43	-11	A	N
SIGUIJ	869	NH2	ARG	A	122	1	0	0	221	61	289	A	N
ATOM	870	C	ARG	A	122	8.683	-7.361	29.040	1.00	15.84		A	C
ANISOU	870	C	ARG	A	122	1947	1450	1847	-377	11	-15	A	C
SIGUIJ	870	C	ARG	A	122	1	0	0	220	99	290	A	C
ATOM	871	O	ARG	A	122	8.602	-6.251	28.425	1.00	15.65		A	O
ANISOU	871	O	ARG	A	122	2349	1468	1918	-374	-36	21	A	O
SIGUIJ	871	O	ARG	A	122	1	0	0	221	54	289	A	O
ATOM	872	N	LEU	A	123	9.801	-8.051	29.159	1.00	15.39		A	N
ANISOU	872	N	LEU	A	123	2119	1866	1765	-115	15	-5	A	N
SIGUIJ	872	N	LEU	A	123	1	0	0	221	61	289	A	N
ATOM	873	CA	LEU	A	123	11.038	-7.618	28.518	1.00	15.70		A	C
ANISOU	873	CA	LEU	A	123	2100	1663	1771	-34	16	-1	A	C
SIGUIJ	873	CA	LEU	A	123	1	0	0	220	99	290	A	C
ATOM	874	CB	LEU	A	123	12.221	-8.340	29.185	1.00	15.74		A	C
ANISOU	874	CB	LEU	A	123	2196	1845	1826	79	-20	-4	A	C
SIGUIJ	874	CB	LEU	A	123	1	0	0	220	99	290	A	C
ATOM	875	CG	LEU	A	123	12.488	-7.891	30.640	1.00	15.65		A	C
ANISOU	875	CG	LEU	A	123	2233	1901	1819	-18	-3	0	A	C
SIGUIJ	875	CG	LEU	A	123	1	0	0	220	99	290	A	C
ATOM	876	CD1	LEU	A	123	13.577	-8.783	31.226	1.00	16.72		A	C
ANISOU	876	CD1	LEU	A	123	3489	3126	2116	1193	-488	-401	A	C
SIGUIJ	876	CD1	LEU	A	123	1	0	0	220	99	290	A	C
ATOM	877	CD2	LEU	A	123	12.911	-6.437	30.715	1.00	16.26		A	C
ANISOU	877	CD2	LEU	A	123	2186	1902	2056	-19	-2	0	A	C
SIGUIJ	877	CD2	LEU	A	123	1	0	0	220	99	290	A	C
ATOM	878	C	LEU	A	123	10.950	-7.937	27.023	1.00	16.09		A	C
ANISOU	878	C	LEU	A	123	1925	1611	1775	59	8	2	A	C
SIGUIJ	878	C	LEU	A	123	1	0	0	220	99	290	A	C
ATOM	879	O	LEU	A	123	10.185	-8.833	26.592	1.00	16.40		A	O
ANISOU	879	O	LEU	A	123	2612	2183	1779	-574	96	-66	A	O
SIGUIJ	879	O	LEU	A	123	1	0	0	221	54	289	A	O
ATOM	880	N	PRO	A	124	11.700	-7.220	26.206	1.00	16.35		A	N

- 94 -

ANISOU	880	N	PRO A 124	1978	1672	1766	-4	-4	0	A	N
SIGUIJ	880	N	PRO A 124	1	0	0	221	61	289	A	N
ATOM	881	CD	PRO A 124	12.624	-6.128	26.560	1.00	15.91		A	C
ANISOU	881	CD	PRO A 124	2031	1734	1615	-73	78	-16	A	C
SIGUIJ	881	CD	PRO A 124	1	0	0	220	99	290	A	C
ATOM	882	CA	PRO A 124	11.586	-7.385	24.754	1.00	17.20		A	C
ANISOU	882	CA	PRO A 124	2443	1676	1767	-42	-34	2	A	C
SIGUIJ	882	CA	PRO A 124	1	0	0	220	98	290	A	C
ATOM	883	CB	PRO A 124	12.208	-6.094	24.205	1.00	16.17		A	C
ANISOU	883	CB	PRO A 124	2152	1605	1773	101	-16	-4	A	C
SIGUIJ	883	CB	PRO A 124	1	0	0	220	98	290	A	C
ATOM	884	CG	PRO A 124	13.248	-5.750	25.256	1.00	15.99		A	C
ANISOU	884	CG	PRO A 124	2019	1617	1641	84	110	22	A	C
SIGUIJ	884	CG	PRO A 124	1	0	0	220	98	290	A	C
ATOM	885	C	PRO A 124	12.337	-8.618	24.267	1.00	18.28		A	C
ANISOU	885	C	PRO A 124	3163	1858	1998	300	192	45	A	C
SIGUIJ	885	C	PRO A 124	1	0	0	220	98	290	A	C
ATOM	886	O	PRO A 124	13.386	-8.981	24.829	1.00	18.87		A	O
ANISOU	886	O	PRO A 124	3346	1649	2602	279	-159	-43	A	O
SIGUIJ	886	O	PRO A 124	1	0	0	221	54	289	A	O
ATOM	887	N	SER A 125	11.791	-9.243	23.222	1.00	19.66		A	N
ANISOU	887	N	SER A 125	3843	2018	2171	175	-77	-8	A	N
SIGUIJ	887	N	SER A 125	1	0	0	221	61	289	A	N
ATOM	888	CA	SER A 125	12.571	-10.203	22.419	1.00	20.69		A	C
ANISOU	888	CA	SER A 125	4056	1869	2511	35	286	9	A	C
SIGUIJ	888	CA	SER A 125	1	0	0	220	98	290	A	C
ATOM	889	CB	SER A 125	11.778	-11.476	22.152	1.00	21.47		A	C
ANISOU	889	CB	SER A 125	5812	2535	3271	-1022	117	-40	A	C
SIGUIJ	889	CB	SER A 125	1	0	0	220	98	290	A	C
ATOM	890	OG	SER A 125	10.598	-11.193	21.456	1.00	23.27		A	O
ANISOU	890	OG	SER A 125	6259	3583	4621	-942	-609	247	A	O
SIGUIJ	890	OG	SER A 125	1	0	0	221	54	289	A	O
ATOM	891	C	SER A 125	13.076	-9.643	21.077	1.00	20.70		A	C
ANISOU	891	C	SER A 125	4813	1956	2566	-188	474	-34	A	C
SIGUIJ	891	C	SER A 125	1	0	0	220	98	290	A	C
ATOM	892	O	SER A 125	13.944	-10.244	20.430	1.00	21.30		A	O
ANISOU	892	O	SER A 125	4931	1911	2914	-268	699	-84	A	O
SIGUIJ	892	O	SER A 125	1	0	0	221	54	289	A	O
ATOM	893	N	ARG A 128	12.552	-8.492	20.667	1.00	20.62		A	N
ANISOU	893	N	ARG A 128	4284	1853	2191	-355	662	-99	A	N
SIGUIJ	893	N	ARG A 128	1	0	0	221	61	289	A	N
ATOM	894	CA	ARG A 128	13.031	-7.806	19.477	1.00	20.32		A	C
ANISOU	894	CA	ARG A 128	3194	1797	2110	-112	365	-34	A	C
SIGUIJ	894	CA	ARG A 128	1	0	0	220	98	290	A	C
ATOM	895	CB	ARG A 128	12.083	-8.091	18.318	1.00	21.53		A	C
ANISOU	895	CB	ARG A 128	4473	2586	2833	-575	-573	171	A	C
SIGUIJ	895	CB	ARG A 128	1	0	0	220	98	290	A	C
ATOM	896	CG	ARG A 128	11.995	-9.586	17.993	1.00	23.54		A	C
ANISOU	896	CG	ARG A 128	15334	2629	3423	-1034	-1494	123	A	C
SIGUIJ	896	CG	ARG A 128	1	0	0	220	98	290	A	C
ATOM	897	CD	ARG A 128	10.802	-9.845	17.097	1.00	24.98		A	C

ANISOU	897	CD	ARG A 128	18087	12399	6545	-4248	-4147	1621	A	C
SIGUIJ	897	CD	ARG A 128	1	0	0	220	97	290	A	C
ATOM	898	NE	ARG A 128	10.637	-8.686	16.229	1.00	26.43		A	N
ANISOU	898	NE	ARG A 128	19357	11868	3343	286	1652	51	A	N
SIGUIJ	898	NE	ARG A 128	1	0	0	221	61	289	A	N
ATOM	899	CZ	ARG A 128	11.441	-8.423	15.203	1.00	26.81		A	C
ANISOU	899	CZ	ARG A 128	16526	8558	1782	1274	-336	-33	A	C
SIGUIJ	899	CZ	ARG A 128	1	0	0	220	97	290	A	C
ATOM	900	NH1	ARG A 128	12.441	-9.269	14.965	1.00	27.32		A	N
ANISOU	900	NH1	ARG A 128	16054	7639	4806	508	437	23	A	N
SIGUIJ	900	NH1	ARG A 128	1	0	0	221	61	289	A	N
ATOM	901	NH2	ARG A 128	11.249	-7.338	14.434	1.00	26.86		A	N
ANISOU	901	NH2	ARG A 128	4057	8229	1749	-729	-40	3	A	N
SIGUIJ	901	NH2	ARG A 128	1	0	0	221	61	289	A	N
ATOM	902	C	ARG A 128	13.053	-6.304	19.747	1.00	19.30		A	C
ANISOU	902	C	ARG A 128	2695	1789	1719	-36	33	-1	A	C
SIGUIJ	902	C	ARG A 128	1	0	0	220	97	290	A	C
ATOM	903	O	ARG A 128	12.416	-5.831	20.708	1.00	19.07		A	O
ANISOU	903	O	ARG A 128	2890	2004	1722	150	62	9	A	O
SIGUIJ	903	O	ARG A 128	1	0	0	221	54	289	A	O
ATOM	904	N	CYS A 129	13.757	-5.588	18.894	1.00	18.42		A	N
ANISOU	904	N	CYS A 129	2557	1768	1672	7	-39	0	A	N
SIGUIJ	904	N	CYS A 129	1	0	0	221	61	289	A	N
ATOM	905	CA	CYS A 129	13.825	-4.124	18.956	1.00	17.61		A	C
ANISOU	905	CA	CYS A 129	2220	1775	1665	23	-62	-3	A	C
SIGUIJ	905	CA	CYS A 129	1	0	0	220	97	290	A	C
ATOM	906	C	CYS A 129	12.751	-3.513	18.078	1.00	17.14		A	C
ANISOU	906	C	CYS A 129	2128	1964	1479	75	88	28	A	C
SIGUIJ	906	C	CYS A 129	1	0	0	220	97	290	A	C
ATOM	907	O	CYS A 129	12.690	-3.773	16.860	1.00	17.35		A	O
ANISOU	907	O	CYS A 129	2814	2211	1492	197	16	3	A	O
SIGUIJ	907	O	CYS A 129	1	0	0	221	54	289	A	O
ATOM	908	CB	CYS A 129	15.170	-3.684	18.428	1.00	17.49		A	C
ANISOU	908	CB	CYS A 129	2202	1672	1772	57	-59	-7	A	C
SIGUIJ	908	CB	CYS A 129	1	0	0	220	97	290	A	C
ATOM	909	SG	CYS A 129	16.567	-4.357	19.370	1.00	17.33		A	S
ANISOU	909	SG	CYS A 129	2527	2258	1937	480	-253	-185	A	S
SIGUIJ	909	SG	CYS A 129	1	0	0	221	48	289	A	S
ATOM	910	N	GLU A 130	11.875	-2.719	18.655	1.00	16.42		A	N
ANISOU	910	N	GLU A 130	1991	1922	1399	-6	22	-1	A	N
SIGUIJ	910	N	GLU A 130	1	0	0	221	61	289	A	N
ATOM	911	CA	GLU A 130	10.879	-2.008	17.822	1.00	16.19		A	C
ANISOU	911	CA	GLU A 130	2000	1988	1415	-1	-3	0	A	C
SIGUIJ	911	CA	GLU A 130	1	0	0	220	97	290	A	C
ATOM	912	CB	GLU A 130	9.741	-1.429	18.687	1.00	16.86		A	C
ANISOU	912	CB	GLU A 130	2205	2773	1438	392	14	2	A	C
SIGUIJ	912	CB	GLU A 130	1	0	0	220	97	290	A	C
ATOM	913	CG	GLU A 130	8.808	-2.483	19.317	1.00	19.01		A	C
ANISOU	913	CG	GLU A 130	2557	3102	1342	33	-56	-6	A	C
SIGUIJ	913	CG	GLU A 130	1	0	0	220	97	290	A	C
ATOM	914	CD	GLU A 130	7.994	-3.328	18.339	1.00	19.91		A	C

ANISOU	914	CD	GLU	A	130	3068	3337	1719	-65	-404	-104	A	C
SIGUIJ	914	CD	GLU	A	130	1	0	0	220	97	290	A	C
ATOM	915	OE1	GLU	A	130	7.833	-2.865	17.179	1.00	20.94		A	O
ANISOU	915	OE1	GLU	A	130	2710	3803	1799	-221	-414	82	A	O
SIGUIJ	915	OE1	GLU	A	130	1	0	0	221	54	289	A	O
ATOM	916	OE2	GLU	A	130	7.530	-4.438	18.743	1.00	21.75		A	O
ANISOU	916	OE2	GLU	A	130	4740	3706	2415	-733	-335	139	A	O
SIGUIJ	916	OE2	GLU	A	130	1	0	0	221	54	289	A	O
ATOM	917	C	GLU	A	130	11.549	-0.890	17.037	1.00	15.24		A	C
ANISOU	917	C	GLU	A	130	1918	1991	1348	10	-50	3	A	C
SIGUIJ	917	C	GLU	A	130	1	0	0	220	96	290	A	C
ATOM	918	O	GLU	A	130	12.429	-0.227	17.555	1.00	15.46		A	O
ANISOU	918	O	GLU	A	130	1999	2010	1554	0	-184	11	A	O
SIGUIJ	918	O	GLU	A	130	1	0	0	221	54	289	A	O
ATOM	919	N	PRO	A	131	11.143	-0.677	15.749	1.00	14.49		A	N
ANISOU	919	N	PRO	A	131	1826	2049	1323	37	-4	0	A	N
SIGUIJ	919	N	PRO	A	131	1	0	0	221	61	289	A	N
ATOM	920	CD	PRO	A	131	10.218	-1.515	14.966	1.00	14.56		A	C
ANISOU	920	CD	PRO	A	131	1943	2110	1393	-15	-84	-2	A	C
SIGUIJ	920	CD	PRO	A	131	1	0	0	220	96	290	A	C
ATOM	921	CA	PRO	A	131	11.842	0.294	14.898	1.00	13.90		A	C
ANISOU	921	CA	PRO	A	131	1928	2069	1341	14	47	-3	A	C
SIGUIJ	921	CA	PRO	A	131	1	0	0	220	96	290	A	C
ATOM	922	CB	PRO	A	131	11.461	-0.116	13.495	1.00	14.54		A	C
ANISOU	922	CB	PRO	A	131	2366	1951	1375	130	-87	-18	A	C
SIGUIJ	922	CB	PRO	A	131	1	0	0	220	96	290	A	C
ATOM	923	CG	PRO	A	131	10.119	-0.726	13.664	1.00	14.36		A	C
ANISOU	923	CG	PRO	A	131	2401	2105	1378	58	-81	-11	A	C
SIGUIJ	923	CG	PRO	A	131	1	0	0	220	96	290	A	C
ATOM	924	C	PRO	A	131	11.405	1.728	15.135	1.00	13.68		A	C
ANISOU	924	C	PRO	A	131	1793	2075	1235	7	-59	-1	A	C
SIGUIJ	924	C	PRO	A	131	1	0	0	220	96	290	A	C
ATOM	925	O	PRO	A	131	10.293	1.971	15.604	1.00	13.49		A	O
ANISOU	925	O	PRO	A	131	1786	2141	1185	17	-73	-7	A	O
SIGUIJ	925	O	PRO	A	131	1	0	0	221	54	289	A	O
ATOM	926	N	PRO	A	132	12.236	2.678	14.727	1.00	13.65		A	N
ANISOU	926	N	PRO	A	132	1761	2065	1241	31	-62	1	A	N
SIGUIJ	926	N	PRO	A	132	1	0	0	221	61	289	A	N
ATOM	927	CD	PRO	A	132	13.662	2.507	14.308	1.00	13.98		A	C
ANISOU	927	CD	PRO	A	132	1800	2434	1629	75	49	2	A	C
SIGUIJ	927	CD	PRO	A	132	1	0	0	220	96	290	A	C
ATOM	928	CA	PRO	A	132	11.820	4.055	14.586	1.00	13.24		A	C
ANISOU	928	CA	PRO	A	132	1713	2054	1338	9	-165	-9	A	C
SIGUIJ	928	CA	PRO	A	132	1	0	0	220	96	290	A	C
ATOM	929	CB	PRO	A	132	12.975	4.692	13.777	1.00	13.98		A	C
ANISOU	929	CB	PRO	A	132	1910	2297	1630	-115	22	-1	A	C
SIGUIJ	929	CB	PRO	A	132	1	0	0	220	96	290	A	C
ATOM	930	CG	PRO	A	132	14.175	3.851	14.183	1.00	13.59		A	C
ANISOU	930	CG	PRO	A	132	1983	2462	1533	0	47	-1	A	C
SIGUIJ	930	CG	PRO	A	132	1	0	0	220	96	290	A	C
ATOM	931	C	PRO	A	132	10.480	4.149	13.876	1.00	13.22		A	C

- 97 -

ANISOU	931	C	PRO A 132	1672	1663	1185	0	-83	-1	A	C
SIGUIJ	931	C	PRO A 132	1	0	0	220	95	290	A	C
ATOM	932	O	PRO A 132	10.202	3.377	12.911	1.00	12.65		A	O
ANISOU	932	O	PRO A 132	1839	1675	1185	-16	-117	3	A	O
SIGUIJ	932	O	PRO A 132	1	0	0	221	54	289	A	O
ATOM	933	N	GLY A 133	9.649	5.097	14.310	1.00	12.65		A	N
ANISOU	933	N	GLY A 133	1647	1646	1150	0	-123	-6	A	N
SIGUIJ	933	N	GLY A 133	1	0	0	221	61	289	A	N
ATOM	934	CA	GLY A 133	8.320	5.258	13.755	1.00	12.67		A	C
ANISOU	934	CA	GLY A 133	1649	1779	1108	20	-106	8	A	C
SIGUIJ	934	CA	GLY A 133	1	0	0	220	95	290	A	C
ATOM	935	C	GLY A 133	7.225	4.581	14.547	1.00	12.73		A	C
ANISOU	935	C	GLY A 133	1724	1811	1198	-9	-33	-1	A	C
SIGUIJ	935	C	GLY A 133	1	0	0	220	95	290	A	C
ATOM	936	O	GLY A 133	6.042	4.877	14.319	1.00	13.38		A	O
ANISOU	936	O	GLY A 133	1756	2135	1334	80	-53	-1	A	O
SIGUIJ	936	O	GLY A 133	1	0	0	221	54	289	A	O
ATOM	937	N	THR A 134	7.600	3.704	15.477	1.00	13.30		A	N
ANISOU	937	N	THR A 134	1756	1820	1198	-2	-27	-1	A	N
SIGUIJ	937	N	THR A 134	1	0	0	221	61	289	A	N
ATOM	938	CA	THR A 134	6.617	3.030	16.301	1.00	13.30		A	C
ANISOU	938	CA	THR A 134	1731	1806	1200	3	-37	1	A	C
SIGUIJ	938	CA	THR A 134	1	0	0	220	95	290	A	C
ATOM	939	CB	THR A 134	7.235	1.798	16.938	1.00	13.36		A	C
ANISOU	939	CB	THR A 134	1759	1787	1244	-6	-84	-12	A	C
SIGUIJ	939	CB	THR A 134	1	0	0	220	95	290	A	C
ATOM	940	OG1	THR A 134	7.779	0.970	15.916	1.00	13.52		A	O
ANISOU	940	OG1	THR A 134	2156	1751	1418	-86	199	-33	A	O
SIGUIJ	940	OG1	THR A 134	1	0	0	221	54	289	A	O
ATOM	941	CG2	THR A 134	6.197	0.987	17.718	1.00	14.12		A	C
ANISOU	941	CG2	THR A 134	2547	2022	1879	-383	580	-260	A	C
SIGUIJ	941	CG2	THR A 134	1	0	0	220	95	290	A	C
ATOM	942	C	THR A 134	6.095	3.992	17.394	1.00	13.61		A	C
ANISOU	942	C	THR A 134	1677	1805	1200	-4	-46	-1	A	C
SIGUIJ	942	C	THR A 134	1	0	0	220	95	290	A	C
ATOM	943	O	THR A 134	6.886	4.678	18.065	1.00	12.95		A	O
ANISOU	943	O	THR A 134	1695	1805	1240	-11	-73	-6	A	O
SIGUIJ	943	O	THR A 134	1	0	0	221	54	289	A	O
ATOM	944	N	THR A 135	4.776	4.050	17.591	1.00	13.92		A	N
ANISOU	944	N	THR A 135	1678	2130	1187	2	-57	-5	A	N
SIGUIJ	944	N	THR A 135	1	0	0	221	61	289	A	N
ATOM	945	CA	THR A 135	4.168	4.738	18.736	1.00	14.83		A	C
ANISOU	945	CA	THR A 135	1958	2083	1256	-16	104	9	A	C
SIGUIJ	945	CA	THR A 135	1	0	0	220	95	290	A	C
ATOM	946	CB	THR A 135	2.654	4.998	18.466	1.00	15.90		A	C
ANISOU	946	CB	THR A 135	2026	3624	1838	264	-17	-14	A	C
SIGUIJ	946	CB	THR A 135	1	0	0	220	95	290	A	C
ATOM	947	OG1	THR A 135	2.510	5.931	17.384	1.00	18.22		A	O
ANISOU	947	OG1	THR A 135	3170	3640	1940	-12	-413	38	A	O
SIGUIJ	947	OG1	THR A 135	1	0	0	221	54	289	A	O
ATOM	948	CG2	THR A 135	1.994	5.573	19.688	1.00	17.09		A	C

- 98 -

ANISOU	948	CG2	THR	A	135	2150	3585	1851	292	31	13	A	C
SIGUIJ	948	CG2	THR	A	135	1	0	0	220	95	290	A	C
ATOM	949	C	THR	A	135	4.320	3.966	20.031	1.00	14.33		A	C
ANISOU	949	C	THR	A	135	1624	1974	1241	-200	52	-19	A	C
SIGUIJ	949	C	THR	A	135	1	0	0	220	95	290	A	C
ATOM	950	O	THR	A	135	4.113	2.746	20.078	1.00	14.51		A	O
ANISOU	950	O	THR	A	135	2619	2002	1444	-383	77	-31	A	O
SIGUIJ	950	O	THR	A	135	1	0	0	221	54	289	A	O
ATOM	951	N	CYS	A	136	4.776	4.666	21.062	1.00	13.59		A	N
ANISOU	951	N	CYS	A	136	1558	1773	1249	-12	-20	-1	A	N
SIGUIJ	951	N	CYS	A	136	1	0	0	221	61	289	A	N
ATOM	952	CA	CYS	A	136	5.015	4.065	22.378	1.00	13.33		A	C
ANISOU	952	CA	CYS	A	136	1554	1725	1237	101	28	-5	A	C
SIGUIJ	952	CA	CYS	A	136	1	0	0	220	94	290	A	C
ATOM	953	C	CYS	A	136	4.471	4.964	23.473	1.00	12.46		A	C
ANISOU	953	C	CYS	A	136	1464	1601	1229	0	37	2	A	C
SIGUIJ	953	C	CYS	A	136	1	0	0	220	94	290	A	C
ATOM	954	O	CYS	A	136	4.032	6.090	23.209	1.00	12.45		A	O
ANISOU	954	O	CYS	A	136	1879	1656	1331	157	112	44	A	O
SIGUIJ	954	O	CYS	A	136	1	0	0	221	54	289	A	O
ATOM	955	CB	CYS	A	136	6.509	3.869	22.590	1.00	14.29		A	C
ANISOU	955	CB	CYS	A	136	1573	2489	1431	233	0	0	A	C
SIGUIJ	955	CB	CYS	A	136	1	0	0	220	94	290	A	C
ATOM	956	SG	CYS	A	136	7.367	3.000	21.237	1.00	16.81		A	S
ANISOU	956	SG	CYS	A	136	2525	2969	1554	833	250	66	A	S
SIGUIJ	956	SG	CYS	A	136	1	0	0	221	48	289	A	S
ATOM	957	N	THR	A	137	4.529	4.464	24.723	1.00	11.20		A	N
ANISOU	957	N	THR	A	137	1477	1553	1216	-9	18	1	A	N
SIGUIJ	957	N	THR	A	137	1	0	0	221	61	289	A	N
ATOM	958	CA	THR	A	137	4.042	5.275	25.863	1.00	11.13		A	C
ANISOU	958	CA	THR	A	137	1388	1566	1178	-4	-44	-4	A	C
SIGUIJ	958	CA	THR	A	137	1	0	0	220	94	290	A	C
ATOM	959	CB	THR	A	137	2.808	4.631	26.475	1.00	11.38		A	C
ANISOU	959	CB	THR	A	137	1492	1805	1290	-120	28	-6	A	C
SIGUIJ	959	CB	THR	A	137	1	0	0	220	94	290	A	C
ATOM	960	OG1	THR	A	137	1.772	4.518	25.474	1.00	12.96		A	O
ANISOU	960	OG1	THR	A	137	1690	2319	1457	-189	-148	9	A	O
SIGUIJ	960	OG1	THR	A	137	1	0	0	221	54	289	A	O
ATOM	961	CG2	THR	A	137	2.294	5.460	27.644	1.00	12.06		A	C
ANISOU	961	CG2	THR	A	137	1591	1848	1280	-27	3	0	A	C
SIGUIJ	961	CG2	THR	A	137	1	0	0	220	94	290	A	C
ATOM	962	C	THR	A	137	5.114	5.316	26.922	1.00	10.72		A	C
ANISOU	962	C	THR	A	137	1358	1288	1131	-10	-4	0	A	C
SIGUIJ	962	C	THR	A	137	1	0	0	220	94	290	A	C
ATOM	963	O	THR	A	137	5.701	4.302	27.259	1.00	10.60		A	O
ANISOU	963	O	THR	A	137	1439	1299	1274	23	-53	-8	A	O
SIGUIJ	963	O	THR	A	137	1	0	0	221	54	289	A	O
ATOM	964	N	AVAL	A	138	5.393	6.508	27.426	0.50	10.12		A	N
ANISOU	964	N	AVAL	A	138	1211	1281	1094	8	-3	0	A	N
SIGUIJ	964	N	AVAL	A	138	1	0	0	221	60	289	A	N
ATOM	965	N	BVAL	A	138	5.385	6.512	27.428	0.50	12.31		A	N

- 99 -

ANISOU	965	N	BVAL	A	138	1443	1286	1103	-4	-40	1	A	N
SIGUIJ	965	N	BVAL	A	138	1	0	0	221	60	289	A	N
ATOM	966	CA	AVAL	A	138	6.324	6.704	28.549	0.50	10.10		A	C
ANISOU	966	CA	AVAL	A	138	1182	1254	1073	6	9	0	A	C
SIGUIJ	966	CA	AVAL	A	138	1	0	0	220	94	290	A	C
ATOM	967	CA	BVAL	A	138	6.312	6.716	28.551	0.50	12.29		A	C
ANISOU	967	CA	BVAL	A	138	1531	1444	1157	15	-118	-14	A	C
SIGUIJ	967	CA	BVAL	A	138	1	0	0	220	94	290	A	C
ATOM	968	CB	AVAL	A	138	7.508	7.655	28.165	0.50	10.53		A	C
ANISOU	968	CB	AVAL	A	138	1183	1243	957	10	-16	1	A	C
SIGUIJ	968	CB	AVAL	A	138	1	0	0	220	94	290	A	C
ATOM	969	CB	BVAL	A	138	7.386	7.752	28.218	0.50	12.72		A	C
ANISOU	969	CB	BVAL	A	138	1606	1489	1617	-11	0	0	A	C
SIGUIJ	969	CB	BVAL	A	138	1	0	0	220	94	290	A	C
ATOM	970	CG1AVAL	A	138		7.015	9.028	27.740	0.50	12.13		A	C
ANISOU	970	CG1AVAL	A	138		842	1196	916	-110	-4	-3	A	C
SIGUIJ	970	CG1AVAL	A	138		1	0	0	220	93	290	A	C
ATOM	971	CG1BVAL	A	138		8.402	7.849	29.353	0.50	14.32		A	C
ANISOU	971	CG1BVAL	A	138		1610	1933	1620	-51	0	0	A	C
SIGUIJ	971	CG1BVAL	A	138		1	0	0	220	93	290	A	C
ATOM	972	CG2AVAL	A	138		8.490	7.746	29.329	0.50	11.37		A	C
ANISOU	972	CG2AVAL	A	138		1172	1688	941	-47	5	0	A	C
SIGUIJ	972	CG2AVAL	A	138		1	0	0	220	93	290	A	C
ATOM	973	CG2BVAL	A	138		8.073	7.365	26.963	0.50	13.56		A	C
ANISOU	973	CG2BVAL	A	138		1626	1632	1622	1	0	0	A	C
SIGUIJ	973	CG2BVAL	A	138		1	0	0	220	93	290	A	C
ATOM	974	C	AVAL	A	138	5.531	7.206	29.743	0.50	9.50		A	C
ANISOU	974	C	AVAL	A	138	1136	1216	1080	-7	6	0	A	C
SIGUIJ	974	C	AVAL	A	138	1	0	0	220	93	290	A	C
ATOM	975	C	BVAL	A	138	5.507	7.183	29.746	0.50	11.69		A	C
ANISOU	975	C	BVAL	A	138	1477	1210	1138	-57	-117	21	A	C
SIGUIJ	975	C	BVAL	A	138	1	0	0	220	93	290	A	C
ATOM	976	O	AVAL	A	138	4.578	7.983	29.589	0.50	9.79		A	O
ANISOU	976	O	AVAL	A	138	1151	1246	1524	11	-36	3	A	O
SIGUIJ	976	O	AVAL	A	138	1	0	0	221	54	289	A	O
ATOM	977	O	BVAL	A	138	4.527	7.927	29.600	0.50	11.98		A	O
ANISOU	977	O	BVAL	A	138	1549	1334	1002	40	-111	-13	A	O
SIGUIJ	977	O	BVAL	A	138	1	0	0	221	54	289	A	O
ATOM	978	N	SER	A	139	5.937	6.742	30.928	1.00	9.56		A	N
ANISOU	978	N	SER	A	139	1291	1221	1099	-1	-38	0	A	N
SIGUIJ	978	N	SER	A	139	1	0	0	221	60	289	A	N
ATOM	979	CA	SER	A	139	5.170	7.005	32.131	1.00	9.54		A	C
ANISOU	979	CA	SER	A	139	1324	1237	1118	8	-24	-2	A	C
SIGUIJ	979	CA	SER	A	139	1	0	0	220	93	290	A	C
ATOM	980	CB	SER	A	139	4.269	5.812	32.461	1.00	10.03		A	C
ANISOU	980	CB	SER	A	139	1401	1270	1287	-34	10	-3	A	C
SIGUIJ	980	CB	SER	A	139	1	0	0	220	93	290	A	C
ATOM	981	OG	SER	A	139	5.003	4.617	32.481	1.00	11.51		A	O
ANISOU	981	OG	SER	A	139	1459	1292	1644	-1	33	1	A	O
SIGUIJ	981	OG	SER	A	139	1	0	0	221	54	289	A	O
ATOM	982	C	SER	A	139	6.078	7.354	33.297	1.00	9.22		A	C

- 100 -

ANISOU	982	C	SER A 139	1253	1054	1087	66	23	8	A	C
SIGUIJ	982	C	SER A 139	1	0	0	220	93	290	A	C
ATOM	983	O	SER A 139	7.224	6.867	33.392	1.00	9.85		A	O
ANISOU	983	O	SER A 139	1281	1163	1307	117	0	4	A	O
SIGUIJ	983	O	SER A 139	1	0	0	221	54	289	A	O
ATOM	984	N	GLY A 140	5.572	8.185	34.207	1.00	9.08		A	N
ANISOU	984	N	GLY A 140	1119	1029	1087	-4	-2	0	A	N
SIGUIJ	984	N	GLY A 140	1	0	0	221	60	289	A	N
ATOM	985	CA	GLY A 140	6.380	8.522	35.357	1.00	8.65		A	C
ANISOU	985	CA	GLY A 140	1095	1033	1083	-2	1	0	A	C
SIGUIJ	985	CA	GLY A 140	1	0	0	220	93	290	A	C
ATOM	986	C	GLY A 140	5.665	9.494	36.268	1.00	8.84		A	C
ANISOU	986	C	GLY A 140	1080	1012	1076	13	0	0	A	C
SIGUIJ	986	C	GLY A 140	1	0	0	220	93	290	A	C
ATOM	987	O	GLY A 140	4.631	10.083	35.912	1.00	9.20		A	O
ANISOU	987	O	GLY A 140	1154	1180	1100	132	0	2	A	O
SIGUIJ	987	O	GLY A 140	1	0	0	221	54	289	A	O
ATOM	988	N	TRP A 141	6.298	9.713	37.416	1.00	8.37		A	N
ANISOU	988	N	TRP A 141	1068	998	1071	1	0	0	A	N
SIGUIJ	988	N	TRP A 141	1	0	0	221	60	289	A	N
ATOM	989	CA	TRP A 141	5.861	10.711	38.419	1.00	8.42		A	C
ANISOU	989	CA	TRP A 141	1159	1028	1085	39	2	1	A	C
SIGUIJ	989	CA	TRP A 141	1	0	0	220	92	290	A	C
ATOM	990	CB	TRP A 141	5.863	10.071	39.821	1.00	8.68		A	C
ANISOU	990	CB	TRP A 141	1235	1071	1094	-6	-19	1	A	C
SIGUIJ	990	CB	TRP A 141	1	0	0	220	92	290	A	C
ATOM	991	CG	TRP A 141	4.815	9.037	40.046	1.00	9.31		A	C
ANISOU	991	CG	TRP A 141	1259	1093	1260	-23	0	0	A	C
SIGUIJ	991	CG	TRP A 141	1	0	0	220	92	290	A	C
ATOM	992	CD2	TRP A 141	4.973	7.599	40.033	1.00	9.94		A	C
ANISOU	992	CD2	TRP A 141	1400	1092	1238	-27	-19	2	A	C
SIGUIJ	992	CD2	TRP A 141	1	0	0	220	92	290	A	C
ATOM	993	CE2	TRP A 141	3.721	7.036	40.431	1.00	10.38		A	C
ANISOU	993	CE2	TRP A 141	1454	1293	1265	-130	-3	2	A	C
SIGUIJ	993	CE2	TRP A 141	1	0	0	220	92	290	A	C
ATOM	994	CE3	TRP A 141	6.041	6.729	39.721	1.00	10.05		A	C
ANISOU	994	CE3	TRP A 141	1450	1194	1146	55	-80	-15	A	C
SIGUIJ	994	CE3	TRP A 141	1	0	0	220	92	290	A	C
ATOM	995	CD1	TRP A 141	3.527	9.252	40.428	1.00	10.23		A	C
ANISOU	995	CD1	TRP A 141	1255	1266	1297	-1	-2	0	A	C
SIGUIJ	995	CD1	TRP A 141	1	0	0	220	92	290	A	C
ATOM	996	NE1	TRP A 141	2.851	8.071	40.672	1.00	10.13		A	N
ANISOU	996	NE1	TRP A 141	1458	1320	1352	-122	21	-17	A	N
SIGUIJ	996	NE1	TRP A 141	1	0	0	221	60	289	A	N
ATOM	997	CZ2	TRP A 141	3.529	5.643	40.519	1.00	10.92		A	C
ANISOU	997	CZ2	TRP A 141	1913	1299	1413	-192	-119	38	A	C
SIGUIJ	997	CZ2	TRP A 141	1	0	0	220	92	290	A	C
ATOM	998	CZ3	TRP A 141	5.811	5.348	39.810	1.00	10.75		A	C
ANISOU	998	CZ3	TRP A 141	1928	1208	1483	-30	-130	8	A	C
SIGUIJ	998	CZ3	TRP A 141	1	0	0	220	92	290	A	C
ATOM	999	CH2	TRP A 141	4.561	4.850	40.207	1.00	11.25		A	C

- 101 -

ANISOU	999	CH2	TRP	A	141	1969	1395	1465	-113	-126	25	A	C
SIGUIJ	999	CH2	TRP	A	141	1	0	0	220	92	290	A	C
ATOM	1000	C	TRP	A	141	6.775	11.907	38.430	1.00	9.04		A	C
ANISOU	1000	C	TRP	A	141	1142	1016	1281	54	-4	0	A	C
SIGUIJ	1000	C	TRP	A	141	1	0	0	220	92	290	A	C
ATOM	1001	O	TRP	A	141	6.708	12.694	39.416	1.00	9.10		A	O
ANISOU	1001	O	TRP	A	141	1424	1075	1289	135	-48	-30	A	O
SIGUIJ	1001	O	TRP	A	141	1	0	0	221	54	289	A	O
ATOM	1002	N	GLY	A	142	7.582	12.103	37.387	1.00	8.85		A	N
ANISOU	1002	N	GLY	A	142	1106	950	1270	30	-28	-1	A	N
SIGUIJ	1002	N	GLY	A	142	1	0	0	221	60	289	A	N
ATOM	1003	CA	GLY	A	142	8.438	13.273	37.308	1.00	9.39		A	C
ANISOU	1003	CA	GLY	A	142	1130	971	1490	7	-14	0	A	C
SIGUIJ	1003	CA	GLY	A	142	1	0	0	220	92	290	A	C
ATOM	1004	C	GLY	A	142	7.624	14.567	37.182	1.00	9.80		A	C
ANISOU	1004	C	GLY	A	142	1139	988	1262	15	4	0	A	C
SIGUIJ	1004	C	GLY	A	142	1	0	0	220	91	290	A	C
ATOM	1005	O	GLY	A	142	6.425	14.609	37.001	1.00	9.72		A	O
ANISOU	1005	O	GLY	A	142	1138	1093	1291	4	-6	0	A	O
SIGUIJ	1005	O	GLY	A	142	1	0	0	221	54	289	A	O
ATOM	1006	N	THR	A	143	8.368	15.669	37.165	1.00	9.84		A	N
ANISOU	1006	N	THR	A	143	1165	993	1462	11	17	0	A	N
SIGUIJ	1006	N	THR	A	143	1	0	0	221	60	289	A	N
ATOM	1007	CA	THR	A	143	7.699	16.969	37.095	1.00	10.27		A	C
ANISOU	1007	CA	THR	A	143	1258	1018	1345	54	3	-1	A	C
SIGUIJ	1007	CA	THR	A	143	1	0	0	220	91	290	A	C
ATOM	1008	CB	THR	A	143	8.746	18.084	37.231	1.00	10.32		A	C
ANISOU	1008	CB	THR	A	143	1204	970	1652	102	-17	0	A	C
SIGUIJ	1008	CB	THR	A	143	1	0	0	220	91	290	A	C
ATOM	1009	OG1	THR	A	143	8.063	19.358	37.259	1.00	9.98		A	O
ANISOU	1009	OG1	THR	A	143	1329	1005	1727	174	-10	1	A	O
SIGUIJ	1009	OG1	THR	A	143	1	0	0	221	54	289	A	O
ATOM	1010	CG2	THR	A	143	9.814	18.077	36.102	1.00	11.20		A	C
ANISOU	1010	CG2	THR	A	143	1556	1474	1984	-12	329	-83	A	C
SIGUIJ	1010	CG2	THR	A	143	1	0	0	220	91	290	A	C
ATOM	1011	C	THR	A	143	6.907	17.091	35.796	1.00	9.85		A	C
ANISOU	1011	C	THR	A	143	1261	1021	1340	16	-3	0	A	C
SIGUIJ	1011	C	THR	A	143	1	0	0	220	91	290	A	C
ATOM	1012	O	THR	A	143	7.319	16.587	34.723	1.00	10.01		A	O
ANISOU	1012	O	THR	A	143	1366	1051	1335	64	2	2	A	O
SIGUIJ	1012	O	THR	A	143	1	0	0	221	54	289	A	O
ATOM	1013	N	THR	A	144	5.791	17.825	35.914	1.00	10.36		A	N
ANISOU	1013	N	THR	A	144	1238	1002	1364	-10	6	0	A	N
SIGUIJ	1013	N	THR	A	144	1	0	0	221	60	289	A	N
ATOM	1014	CA	THR	A	144	4.945	18.147	34.775	1.00	10.86		A	C
ANISOU	1014	CA	THR	A	144	1287	1167	1390	23	-21	1	A	C
SIGUIJ	1014	CA	THR	A	144	1	0	0	220	91	290	A	C
ATOM	1015	CB	THR	A	144	3.454	17.993	35.145	1.00	10.86		A	C
ANISOU	1015	CB	THR	A	144	1301	1280	1505	2	14	0	A	C
SIGUIJ	1015	CB	THR	A	144	1	0	0	220	91	290	A	C
ATOM	1016	OG1	THR	A	144	3.194	18.895	36.245	1.00	11.34		A	O

- 102 -

ANISOU	1016	OG1	THR	A	144	1482	1318	1493	112	0	-2	A	O
SIGUIJ	1016	OG1	THR	A	144	1	0	0	221	54	289	A	O
ATOM	1017	CG2	THR	A	144	3.171	16.582	35.580	1.00	11.09		A	C
ANISOU	1017	CG2	THR	A	144	1458	1289	1506	-29	2	0	A	C
SIGUIJ	1017	CG2	THR	A	144	1	0	0	220	91	290	A	C
ATOM	1018	C	THR	A	144	5.183	19.524	34.244	1.00	11.05		A	C
ANISOU	1018	C	THR	A	144	1315	1164	1433	14	-2	0	A	C
SIGUIJ	1018	C	THR	A	144	1	0	0	220	91	290	A	C
ATOM	1019	O	THR	A	144	4.545	19.931	33.272	1.00	11.42		A	O
ANISOU	1019	O	THR	A	144	1681	1258	1494	202	-153	-83	A	O
SIGUIJ	1019	O	THR	A	144	1	0	0	221	54	289	A	O
ATOM	1020	N	THR	A	145	6.052	20.279	34.904	1.00	11.43		A	N
ANISOU	1020	N	THR	A	145	1298	1103	1471	30	1	0	A	N
SIGUIJ	1020	N	THR	A	145	1	0	0	221	60	289	A	N
ATOM	1021	CA	THR	A	145	6.405	21.640	34.524	1.00	12.02		A	C
ANISOU	1021	CA	THR	A	145	1643	1128	1554	-73	3	-1	A	C
SIGUIJ	1021	CA	THR	A	145	1	0	0	220	91	290	A	C
ATOM	1022	CB	THR	A	145	5.840	22.676	35.533	1.00	11.75		A	C
ANISOU	1022	CB	THR	A	145	1687	1177	1583	0	-1	0	A	C
SIGUIJ	1022	CB	THR	A	145	1	0	0	220	91	290	A	C
ATOM	1023	OG1	THR	A	145	6.301	22.372	36.851	1.00	12.15		A	O
ANISOU	1023	OG1	THR	A	145	1658	1383	1594	119	2	2	A	O
SIGUIJ	1023	OG1	THR	A	145	1	0	0	221	54	289	A	O
ATOM	1024	CG2	THR	A	145	4.316	22.694	35.480	1.00	12.43		A	C
ANISOU	1024	CG2	THR	A	145	1686	1575	2121	14	-22	-1	A	C
SIGUIJ	1024	CG2	THR	A	145	1	0	0	220	91	290	A	C
ATOM	1025	C	THR	A	145	7.915	21.777	34.499	1.00	13.22		A	C
ANISOU	1025	C	THR	A	145	1651	1148	1958	-98	35	2	A	C
SIGUIJ	1025	C	THR	A	145	1	0	0	220	90	290	A	C
ATOM	1026	O	THR	A	145	8.640	21.001	35.108	1.00	12.96		A	O
ANISOU	1026	O	THR	A	145	1572	1279	1698	39	312	39	A	O
SIGUIJ	1026	O	THR	A	145	1	0	0	221	54	289	A	O
ATOM	1027	N	SER	A	146	8.396	22.805	33.789	1.00	14.32		A	N
ANISOU	1027	N	SER	A	146	2091	1240	1923	-316	13	-12	A	N
SIGUIJ	1027	N	SER	A	146	1	0	0	221	60	289	A	N
ATOM	1028	CA	SER	A	146	9.827	23.078	33.778	1.00	15.69		A	C
ANISOU	1028	CA	SER	A	146	2077	1369	2390	-354	29	5	A	C
SIGUIJ	1028	CA	SER	A	146	1	0	0	220	90	290	A	C
ATOM	1029	CB	SER	A	146	10.531	22.074	32.828	1.00	15.13		A	C
ANISOU	1029	CB	SER	A	146	1955	1414	2348	-341	-53	-21	A	C
SIGUIJ	1029	CB	SER	A	146	1	0	0	220	90	290	A	C
ATOM	1030	OG	SER	A	146	11.947	22.136	32.948	1.00	15.26		A	O
ANISOU	1030	OG	SER	A	146	1947	1494	1868	-352	-10	15	A	O
SIGUIJ	1030	OG	SER	A	146	1	0	0	221	54	289	A	O
ATOM	1031	C	SER	A	146	10.016	24.529	33.296	1.00	16.96		A	C
ANISOU	1031	C	SER	A	146	2270	1385	2791	-317	274	89	A	C
SIGUIJ	1031	C	SER	A	146	1	0	0	220	90	290	A	C
ATOM	1032	O	SER	A	146	9.317	24.943	32.402	1.00	17.83		A	O
ANISOU	1032	O	SER	A	146	2835	1765	2966	26	-7	1	A	O
SIGUIJ	1032	O	SER	A	146	1	0	0	221	54	289	A	O
ATOM	1033	N	PRO	A	147	10.984	25.281	33.888	1.00	18.13		A	N

- 103 -

ANISOU	1033	N	PRO	A	147	2614	1723	3238	-579	48	25	A	N
SIGUIJ	1033	N	PRO	A	147	1	0	0	221	60	289	A	N
ATOM	1034	CD	PRO	A	147	11.203	26.695	33.477	1.00	18.57		A	C
ANISOU	1034	CD	PRO	A	147	3321	1758	3547	-694	35	114	A	C
SIGUIJ	1034	CD	PRO	A	147	1	0	0	220	90	290	A	C
ATOM	1035	CA	PRO	A	147	11.935	24.865	34.919	1.00	18.91		A	C
ANISOU	1035	CA	PRO	A	147	2366	1635	3105	-710	235	100	A	C
SIGUIJ	1035	CA	PRO	A	147	1	0	0	220	90	290	A	C
ATOM	1036	CB	PRO	A	147	13.038	25.941	34.860	1.00	18.92		A	C
ANISOU	1036	CB	PRO	A	147	2746	2035	3761	-1103	220	172	A	C
SIGUIJ	1036	CB	PRO	A	147	1	0	0	220	90	290	A	C
ATOM	1037	CG	PRO	A	147	12.247	27.120	34.449	1.00	19.82		A	C
ANISOU	1037	CG	PRO	A	147	3386	2206	3649	-752	-3	-16	A	C
SIGUIJ	1037	CG	PRO	A	147	1	0	0	220	90	290	A	C
ATOM	1038	C	PRO	A	147	11.384	24.714	36.329	1.00	19.36		A	C
ANISOU	1038	C	PRO	A	147	2281	1841	3094	-744	184	101	A	C
SIGUIJ	1038	C	PRO	A	147	1	0	0	220	90	290	A	C
ATOM	1039	O	PRO	A	147	12.027	24.088	37.151	1.00	20.21		A	O
ANISOU	1039	O	PRO	A	147	3189	2435	3163	-54	1	-1	A	O
SIGUIJ	1039	O	PRO	A	147	1	0	0	221	54	289	A	O
ATOM	1040	N	ASP	A	148	10.199	25.273	36.593	1.00	19.73		A	N
ANISOU	1040	N	ASP	A	148	2484	2886	2571	-251	4	5	A	N
SIGUIJ	1040	N	ASP	A	148	1	0	0	221	60	289	A	N
ATOM	1041	CA	ASP	A	148	9.538	25.134	37.886	1.00	19.78		A	C
ANISOU	1041	CA	ASP	A	148	2418	2110	2565	-14	-6	0	A	C
SIGUIJ	1041	CA	ASP	A	148	1	0	0	220	90	290	A	C
ATOM	1042	CB	ASP	A	148	8.234	25.937	37.938	1.00	21.32		A	C
ANISOU	1042	CB	ASP	A	148	2480	2280	3978	85	55	10	A	C
SIGUIJ	1042	CB	ASP	A	148	1	0	0	220	90	290	A	C
ATOM	1043	CG	ASP	A	148	8.457	27.414	38.112	1.00	22.69		A	C
ANISOU	1043	CG	ASP	A	148	3800	2314	4254	-113	3	0	A	C
SIGUIJ	1043	CG	ASP	A	148	1	0	0	220	90	290	A	C
ATOM	1044	OD1	ASP	A	148	9.587	27.828	38.379	1.00	24.07		A	O
ANISOU	1044	OD1	ASP	A	148	3948	2897	5492	-327	-284	-8	A	O
SIGUIJ	1044	OD1	ASP	A	148	1	0	0	221	54	289	A	O
ATOM	1045	OD2	ASP	A	148	7.483	28.188	37.967	1.00	24.12		A	O
ANISOU	1045	OD2	ASP	A	148	4594	3226	11473	650	-1275	-255	A	O
SIGUIJ	1045	OD2	ASP	A	148	1	0	0	221	54	289	A	O
ATOM	1046	C	ASP	A	148	9.206	23.661	38.078	1.00	18.72		A	C
ANISOU	1046	C	ASP	A	148	1599	2068	2271	180	104	-31	A	C
SIGUIJ	1046	C	ASP	A	148	1	0	0	220	89	290	A	C
ATOM	1047	O	ASP	A	148	8.798	22.986	37.114	1.00	18.78		A	O
ANISOU	1047	O	ASP	A	148	2096	2187	2285	-13	21	2	A	O
SIGUIJ	1047	O	ASP	A	148	1	0	0	221	54	289	A	O
ATOM	1048	N	VAL	A	149	9.477	23.118	39.260	1.00	17.60		A	N
ANISOU	1048	N	VAL	A	149	1685	1907	2307	-149	-66	-24	A	N
SIGUIJ	1048	N	VAL	A	149	1	0	0	221	60	289	A	N
ATOM	1049	CA	VAL	A	149	9.117	21.723	39.475	1.00	16.98		A	C
ANISOU	1049	CA	VAL	A	149	1519	1886	2609	-52	235	-23	A	C
SIGUIJ	1049	CA	VAL	A	149	1	0	0	220	89	290	A	C
ATOM	1050	CB	VAL	A	149	10.223	20.909	40.221	1.00	18.14		A	C

- 104 -

ANISOU	1050	CB	VAL	A	149	2361	3066	3460	690	-224	136	A	C
SIGUIJ	1050	CB	VAL	A	149	1	0	0	220	89	290	A	C
ATOM	1051	CG1	VAL	A	149	11.607	21.415	39.780	1.00	19.42		A	C
ANISOU	1051	CG1	VAL	A	149	2784	4089	5840	250	613	-77	A	C
SIGUIJ	1051	CG1	VAL	A	149	1	0	0	220	89	290	A	C
ATOM	1052	CG2	VAL	A	149	10.157	21.071	41.655	1.00	18.89		A	C
ANISOU	1052	CG2	VAL	A	149	2410	4172	3483	-116	-129	-11	A	C
SIGUIJ	1052	CG2	VAL	A	149	1	0	0	220	89	290	A	C
ATOM	1053	C	VAL	A	149	7.747	21.548	40.152	1.00	15.68		A	C
ANISOU	1053	C	VAL	A	149	1353	1601	1887	-25	-116	-11	A	C
SIGUIJ	1053	C	VAL	A	149	1	0	0	220	89	290	A	C
ATOM	1054	O	VAL	A	149	7.386	22.235	41.125	1.00	15.49		A	O
ANISOU	1054	O	VAL	A	149	1800	1636	1937	7	18	-1	A	O
SIGUIJ	1054	O	VAL	A	149	1	0	0	221	54	289	A	O
ATOM	1055	N	THR	A	150	6.961	20.639	39.577	1.00	14.24		A	N
ANISOU	1055	N	THR	A	150	1201	1560	1574	-12	94	3	A	N
SIGUIJ	1055	N	THR	A	150	1	0	0	221	60	289	A	N
ATOM	1056	CA	THR	A	150	5.613	20.336	40.083	1.00	13.97		A	C
ANISOU	1056	CA	THR	A	150	1203	1419	1588	9	92	-3	A	C
SIGUIJ	1056	CA	THR	A	150	1	0	0	220	89	290	A	C
ATOM	1057	CB	THR	A	150	4.525	21.015	39.233	1.00	13.75		A	C
ANISOU	1057	CB	THR	A	150	1382	1432	1892	16	-125	25	A	C
SIGUIJ	1057	CB	THR	A	150	1	0	0	220	89	290	A	C
ATOM	1058	OG1	THR	A	150	4.809	22.402	39.136	1.00	13.44		A	O
ANISOU	1058	OG1	THR	A	150	1530	1432	1779	3	22	0	A	O
SIGUIJ	1058	OG1	THR	A	150	1	0	0	221	54	289	A	O
ATOM	1059	CG2	THR	A	150	3.156	20.866	39.871	1.00	14.02		A	C
ANISOU	1059	CG2	THR	A	150	1500	2153	2403	-76	116	11	A	C
SIGUIJ	1059	CG2	THR	A	150	1	0	0	220	89	290	A	C
ATOM	1060	C	THR	A	150	5.466	18.807	39.947	1.00	13.95		A	C
ANISOU	1060	C	THR	A	150	1396	1421	1565	-4	26	2	A	C
SIGUIJ	1060	C	THR	A	150	1	0	0	220	89	290	A	C
ATOM	1061	O	THR	A	150	5.425	18.253	38.819	1.00	13.25		A	O
ANISOU	1061	O	THR	A	150	1375	1439	1553	2	22	0	A	O
SIGUIJ	1061	O	THR	A	150	1	0	0	221	54	289	A	O
ATOM	1062	N	PHE	A	151	5.438	18.123	41.069	1.00	14.35		A	N
ANISOU	1062	N	PHE	A	151	2376	1402	1568	-85	18	-2	A	N
SIGUIJ	1062	N	PHE	A	151	1	0	0	221	60	289	A	N
ATOM	1063	CA	PHE	A	151	5.479	16.635	41.088	1.00	14.74		A	C
ANISOU	1063	CA	PHE	A	151	2104	1402	1576	-90	106	-15	A	C
SIGUIJ	1063	CA	PHE	A	151	1	0	0	220	89	290	A	C
ATOM	1064	CB	PHE	A	151	6.448	16.168	42.184	1.00	15.42		A	C
ANISOU	1064	CB	PHE	A	151	2535	1967	1768	224	-141	-45	A	C
SIGUIJ	1064	CB	PHE	A	151	1	0	0	220	89	290	A	C
ATOM	1065	CG	PHE	A	151	7.876	16.302	41.822	1.00	16.52		A	C
ANISOU	1065	CG	PHE	A	151	2575	1771	2398	252	9	7	A	C
SIGUIJ	1065	CG	PHE	A	151	1	0	0	220	89	290	A	C
ATOM	1066	CD1	PHE	A	151	8.715	17.164	42.537	1.00	17.26		A	C
ANISOU	1066	CD1	PHE	A	151	3798	2860	2442	-887	-54	34	A	C
SIGUIJ	1066	CD1	PHE	A	151	1	0	0	220	88	290	A	C
ATOM	1067	CD2	PHE	A	151	8.421	15.591	40.804	1.00	16.32		A	C

- 105 -

ANISOU	1067	CD2	PHE	A	151	2220	1574	2393	18	-23	1	A	C
SIGUIJ	1067	CD2	PHE	A	151	1	0	0	220	88	290	A	C
ATOM	1068	CE1	PHE	A	151	10.046	17.272	42.212	1.00	17.77		A	C
ANISOU	1068	CE1	PHE	A	151	3814	3163	2595	-917	-4	3	A	C
SIGUIJ	1068	CE1	PHE	A	151	1	0	0	220	88	290	A	C
ATOM	1069	CE2	PHE	A	151	9.756	15.708	40.467	1.00	16.62		A	C
ANISOU	1069	CE2	PHE	A	151	2235	1615	2666	7	32	0	A	C
SIGUIJ	1069	CE2	PHE	A	151	1	0	0	220	88	290	A	C
ATOM	1070	CZ	PHE	A	151	10.587	16.559	41.183	1.00	17.51		A	C
ANISOU	1070	CZ	PHE	A	151	3519	3053	2754	-1333	125	-143	A	C
SIGUIJ	1070	CZ	PHE	A	151	1	0	0	220	88	290	A	C
ATOM	1071	C	PHE	A	151	4.084	16.083	41.317	1.00	14.71		A	C
ANISOU	1071	C	PHE	A	151	2138	1651	1557	-198	138	-47	A	C
SIGUIJ	1071	C	PHE	A	151	1	0	0	220	88	290	A	C
ATOM	1072	O	PHE	A	151	3.495	16.307	42.380	1.00	14.96		A	O
ANISOU	1072	O	PHE	A	151	2406	1832	1649	-231	303	-94	A	O
SIGUIJ	1072	O	PHE	A	151	1	0	0	221	54	289	A	O
ATOM	1073	N	PRO	A	152	3.497	15.385	40.340	1.00	14.27		A	N
ANISOU	1073	N	PRO	A	152	1876	1307	1561	78	77	12	A	N
SIGUIJ	1073	N	PRO	A	152	1	0	0	221	60	289	A	N
ATOM	1074	CD	PRO	A	152	4.177	14.888	39.119	1.00	13.63		A	C
ANISOU	1074	CD	PRO	A	152	1704	1335	1524	105	-2	-1	A	C
SIGUIJ	1074	CD	PRO	A	152	1	0	0	220	88	290	A	C
ATOM	1075	CA	PRO	A	152	2.168	14.843	40.478	1.00	14.57		A	C
ANISOU	1075	CA	PRO	A	152	1912	1581	1682	-23	48	-4	A	C
SIGUIJ	1075	CA	PRO	A	152	1	0	0	220	88	290	A	C
ATOM	1076	CB	PRO	A	152	1.834	14.420	39.050	1.00	13.80		A	C
ANISOU	1076	CB	PRO	A	152	1734	1470	1696	164	-4	-6	A	C
SIGUIJ	1076	CB	PRO	A	152	1	0	0	220	88	290	A	C
ATOM	1077	CG	PRO	A	152	3.207	13.884	38.561	1.00	13.60		A	C
ANISOU	1077	CG	PRO	A	152	1709	1342	1615	106	-9	-6	A	C
SIGUIJ	1077	CG	PRO	A	152	1	0	0	220	88	290	A	C
ATOM	1078	C	PRO	A	152	2.094	13.623	41.416	1.00	14.68		A	C
ANISOU	1078	C	PRO	A	152	1938	1582	1662	-28	5	0	A	C
SIGUIJ	1078	C	PRO	A	152	1	0	0	220	88	290	A	C
ATOM	1079	O	PRO	A	152	3.014	12.759	41.387	1.00	14.95		A	O
ANISOU	1079	O	PRO	A	152	2052	1731	1963	112	8	6	A	O
SIGUIJ	1079	O	PRO	A	152	1	0	0	221	54	289	A	O
ATOM	1080	N	ASER	A	153	1.037	13.452	42.177	0.50	14.75		A	N
ANISOU	1080	N	ASER	A	153	1941	1271	1662	36	17	2	A	N
SIGUIJ	1080	N	ASER	A	153	1	0	0	221	60	289	A	N
ATOM	1081	N	BSER	A	153	1.027	13.449	42.165	0.50	16.94		A	N
ANISOU	1081	N	BSER	A	153	1966	1686	1691	-32	28	-3	A	N
SIGUIJ	1081	N	BSER	A	153	1	0	0	221	60	289	A	N
ATOM	1082	CA	ASER	A	153	0.895	12.194	42.906	0.50	15.25		A	C
ANISOU	1082	CA	ASER	A	153	1924	1273	1631	27	25	2	A	C
SIGUIJ	1082	CA	ASER	A	153	1	0	0	220	88	290	A	C
ATOM	1083	CA	BSER	A	153	0.874	12.194	42.901	0.50	17.44		A	C
ANISOU	1083	CA	BSER	A	153	2665	1697	1679	-100	53	-5	A	C
SIGUIJ	1083	CA	BSER	A	153	1	0	0	220	88	290	A	C
ATOM	1084	CB	ASER	A	153	-0.131	12.364	44.038	0.50	15.90		A	C

- 106 -

ANISOU	1084	CB	ASER	A	153	1956	1581	1640	104	50	14	A	C
SIGUIJ	1084	CB	ASER	A	153	1	0	0	220	88	290	A	C
ATOM	1085	CB	BSER	A	153	-0.203	12.347	43.970	0.50	18.09		A	C
ANISOU	1085	CB	BSER	A	153	3327	2368	2346	-33	714	-24	A	C
SIGUIJ	1085	CB	BSER	A	153	1	0	0	220	87	290	A	C
ATOM	1086	OG	ASER	A	153	0.274	13.375	44.962	0.50	17.70		A	O
ANISOU	1086	OG	ASER	A	153	2449	1707	1640	-138	105	-18	A	O
SIGUIJ	1086	OG	ASER	A	153	1	0	0	221	54	289	A	O
ATOM	1087	OG	BSER	A	153	-1.393	12.819	43.378	0.50	19.89		A	O
ANISOU	1087	OG	BSER	A	153	3692	2488	3783	1	7	0	A	O
SIGUIJ	1087	OG	BSER	A	153	1	0	0	221	54	289	A	O
ATOM	1088	C	ASER	A	153	0.491	11.031	42.001	0.50	14.78		A	C
ANISOU	1088	C	ASER	A	153	2083	1334	1618	-109	123	-22	A	C
SIGUIJ	1088	C	ASER	A	153	1	0	0	220	87	290	A	C
ATOM	1089	C	BSER	A	153	0.498	11.033	41.995	0.50	16.97		A	C
ANISOU	1089	C	BSER	A	153	2117	1650	1628	21	133	6	A	C
SIGUIJ	1089	C	BSER	A	153	1	0	0	220	87	290	A	C
ATOM	1090	O	ASER	A	153	0.821	9.878	42.297	0.50	14.89		A	O
ANISOU	1090	O	ASER	A	153	2390	1392	1506	64	444	27	A	O
SIGUIJ	1090	O	ASER	A	153	1	0	0	221	54	289	A	O
ATOM	1091	O	BSER	A	153	0.837	9.883	42.290	0.50	17.08		A	O
ANISOU	1091	O	BSER	A	153	2077	1631	1788	-18	54	-3	A	O
SIGUIJ	1091	O	BSER	A	153	1	0	0	221	54	289	A	O
ATOM	1092	N	ASP	A	154	-0.215	11.329	40.913	1.00	14.61		A	N
ANISOU	1092	N	ASP	A	154	1867	1602	1507	-21	292	-15	A	N
SIGUIJ	1092	N	ASP	A	154	1	0	0	221	60	289	A	N
ATOM	1093	CA	ASP	A	154	-0.716	10.259	40.073	1.00	14.15		A	C
ANISOU	1093	CA	ASP	A	154	1829	1493	1506	129	111	39	A	C
SIGUIJ	1093	CA	ASP	A	154	1	0	0	220	87	290	A	C
ATOM	1094	CB	ASP	A	154	-2.133	10.547	39.606	1.00	16.72		A	C
ANISOU	1094	CB	ASP	A	154	2039	2560	3065	290	-403	134	A	C
SIGUIJ	1094	CB	ASP	A	154	1	0	0	220	87	290	A	C
ATOM	1095	CG	ASP	A	154	-3.149	10.212	40.698	1.00	18.51		A	C
ANISOU	1095	CG	ASP	A	154	3092	3865	3820	-195	421	100	A	C
SIGUIJ	1095	CG	ASP	A	154	1	0	0	220	87	290	A	C
ATOM	1096	OD1	ASP	A	154	-2.736	9.964	41.855	1.00	20.68		A	O
ANISOU	1096	OD1	ASP	A	154	5297	7688	3945	2014	103	129	A	O
SIGUIJ	1096	OD1	ASP	A	154	1	0	0	221	54	289	A	O
ATOM	1097	OD2	ASP	A	154	-4.292	10.177	40.392	1.00	20.27		A	O
ANISOU	1097	OD2	ASP	A	154	3126	3468	4265	-180	296	83	A	O
SIGUIJ	1097	OD2	ASP	A	154	1	0	0	221	54	289	A	O
ATOM	1098	C	ASP	A	154	0.217	10.035	38.916	1.00	13.00		A	C
ANISOU	1098	C	ASP	A	154	1619	1251	1396	54	-30	-6	A	C
SIGUIJ	1098	C	ASP	A	154	1	0	0	220	87	290	A	C
ATOM	1099	O	ASP	A	154	0.732	10.987	38.317	1.00	13.08		A	O
ANISOU	1099	O	ASP	A	154	1725	1288	1483	35	25	3	A	O
SIGUIJ	1099	O	ASP	A	154	1	0	0	221	53	289	A	O
ATOM	1100	N	LEU	A	155	0.431	8.750	38.591	1.00	11.46		A	N
ANISOU	1100	N	LEU	A	155	1268	1229	1300	-2	1	0	A	N
SIGUIJ	1100	N	LEU	A	155	1	0	0	221	60	289	A	N
ATOM	1101	CA	LEU	A	155	1.333	8.396	37.482	1.00	10.69		A	C

- 107 -

ANISOU	1101	CA	LEU	A	155	1278	1173	1299	9	0	0	A	C
SIGUIJ	1101	CA	LEU	A	155	1	0	0	220	87	290	A	C
ATOM	1102	CB	LEU	A	155	1.323	6.886	37.354	1.00	10.62		A	C
ANISOU	1102	CB	LEU	A	155	1357	1170	1476	13	3	0	A	C
SIGUIJ	1102	CB	LEU	A	155	1	0	0	220	87	290	A	C
ATOM	1103	CG	LEU	A	155	2.321	6.294	36.341	1.00	10.20		A	C
ANISOU	1103	CG	LEU	A	155	1369	1216	1468	42	-1	0	A	C
SIGUIJ	1103	CG	LEU	A	155	1	0	0	220	87	290	A	C
ATOM	1104	CD1	LEU	A	155	3.766	6.518	36.795	1.00	10.47		A	C
ANISOU	1104	CD1	LEU	A	155	1368	1430	1437	3	3	0	A	C
SIGUIJ	1104	CD1	LEU	A	155	1	0	0	220	87	290	A	C
ATOM	1105	CD2	LEU	A	155	2.044	4.778	36.195	1.00	10.77		A	C
ANISOU	1105	CD2	LEU	A	155	1559	1219	1641	13	0	0	A	C
SIGUIJ	1105	CD2	LEU	A	155	1	0	0	220	87	290	A	C
ATOM	1106	C	LEU	A	155	0.811	9.022	36.189	1.00	10.49		A	C
ANISOU	1106	C	LEU	A	155	1245	1164	1304	-10	6	0	A	C
SIGUIJ	1106	C	LEU	A	155	1	0	0	220	87	290	A	C
ATOM	1107	O	LEU	A	155	-0.371	8.882	35.838	1.00	11.28		A	O
ANISOU	1107	O	LEU	A	155	1258	1519	1419	-58	-15	-4	A	O
SIGUIJ	1107	O	LEU	A	155	1	0	0	221	53	289	A	O
ATOM	1108	N	MET	A	156	1.690	9.655	35.433	1.00	9.99		A	N
ANISOU	1108	N	MET	A	156	1204	1082	1273	46	1	0	A	N
SIGUIJ	1108	N	MET	A	156	1	0	0	221	60	289	A	N
ATOM	1109	CA	MET	A	156	1.326	10.323	34.195	1.00	10.37		A	C
ANISOU	1109	CA	MET	A	156	1254	1102	1270	11	0	0	A	C
SIGUIJ	1109	CA	MET	A	156	1	0	0	220	86	290	A	C
ATOM	1110	CB	MET	A	156	1.875	11.741	34.143	1.00	10.66		A	C
ANISOU	1110	CB	MET	A	156	1241	1089	1358	18	15	0	A	C
SIGUIJ	1110	CB	MET	A	156	1	0	0	220	86	290	A	C
ATOM	1111	CG	MET	A	156	1.422	12.569	35.306	1.00	10.75		A	C
ANISOU	1111	CG	MET	A	156	1467	1129	1354	172	19	16	A	C
SIGUIJ	1111	CG	MET	A	156	1	0	0	220	86	290	A	C
ATOM	1112	SD	MET	A	156	-0.367	12.913	35.257	1.00	11.95		A	S
ANISOU	1112	SD	MET	A	156	1475	1478	1716	248	47	-47	A	S
SIGUIJ	1112	SD	MET	A	156	1	0	0	221	48	289	A	S
ATOM	1113	CE	MET	A	156	-0.404	14.362	34.145	1.00	12.88		A	C
ANISOU	1113	CE	MET	A	156	2145	1524	1792	231	6	3	A	C
SIGUIJ	1113	CE	MET	A	156	1	0	0	220	86	290	A	C
ATOM	1114	C	MET	A	156	1.926	9.535	33.003	1.00	10.18		A	C
ANISOU	1114	C	MET	A	156	1229	1116	1253	-4	0	0	A	C
SIGUIJ	1114	C	MET	A	156	1	0	0	220	86	290	A	C
ATOM	1115	O	MET	A	156	2.974	8.862	33.116	1.00	9.91		A	O
ANISOU	1115	O	MET	A	156	1247	1152	1350	13	-13	0	A	O
SIGUIJ	1115	O	MET	A	156	1	0	0	221	53	289	A	O
ATOM	1116	N	CYS	A	157	1.241	9.621	31.862	1.00	11.22		A	N
ANISOU	1116	N	CYS	A	157	1250	1483	1243	112	2	-8	A	N
SIGUIJ	1116	N	CYS	A	157	1	0	0	221	60	289	A	N
ATOM	1117	CA	CYS	A	157	1.515	8.880	30.626	1.00	12.15		A	C
ANISOU	1117	CA	CYS	A	157	2256	1482	1236	275	149	44	A	C
SIGUIJ	1117	CA	CYS	A	157	1	0	0	220	86	290	A	C
ATOM	1118	C	CYS	A	157	1.524	9.860	29.448	1.00	11.80		A	C

- 108 -

ANISOU	1118	C	CYS A 157	1292	1434	1196	50	-9	-1	A	C
SIGUIJ	1118	C	CYS A 157	1	0	0	220	86	290	A	C
ATOM	1119	O	CYS A 157	0.675	10.782	29.398	1.00	11.77		A	O
ANISOU	1119	O	CYS A 157	1416	1540	1417	181	-10	23	A	O
SIGUIJ	1119	O	CYS A 157	1	0	0	221	53	289	A	O
ATOM	1120	CB	CYS A 157	0.356	7.834	30.350	1.00	13.74		A	C
ANISOU	1120	CB	CYS A 157	2508	1751	1748	47	47	3	A	C
SIGUIJ	1120	CB	CYS A 157	1	0	0	220	86	290	A	C
ATOM	1121	SG	CYS A 157	0.673	6.233	31.156	1.00	16.07		A	S
ANISOU	1121	SG	CYS A 157	2211	1753	1968	-138	-181	62	A	S
SIGUIJ	1121	SG	CYS A 157	1	0	0	221	48	289	A	S
ATOM	1122	N	VAL A 158	2.415	9.642	28.483	1.00	11.72		A	N
ANISOU	1122	N	VAL A 158	1299	1378	1182	5	-8	0	A	N
SIGUIJ	1122	N	VAL A 158	1	0	0	221	60	289	A	N
ATOM	1123	CA	VAL A 158	2.293	10.363	27.243	1.00	12.28		A	C
ANISOU	1123	CA	VAL A 158	1705	1408	1171	110	18	5	A	C
SIGUIJ	1123	CA	VAL A 158	1	0	0	220	86	290	A	C
ATOM	1124	CB	VAL A 158	3.136	11.684	27.278	1.00	13.24		A	C
ANISOU	1124	CB	VAL A 158	1959	1516	1902	-48	-1	0	A	C
SIGUIJ	1124	CB	VAL A 158	1	0	0	220	86	290	A	C
ATOM	1125	CG1	VAL A 158	4.608	11.418	27.296	1.00	13.74		A	C
ANISOU	1125	CG1	VAL A 158	1957	1569	1947	-44	0	0	A	C
SIGUIJ	1125	CG1	VAL A 158	1	0	0	220	86	290	A	C
ATOM	1126	CG2	VAL A 158	2.745	12.647	26.178	1.00	14.77		A	C
ANISOU	1126	CG2	VAL A 158	4568	1691	1967	560	-391	-77	A	C
SIGUIJ	1126	CG2	VAL A 158	1	0	0	220	86	290	A	C
ATOM	1127	C	VAL A 158	2.751	9.425	26.128	1.00	12.41		A	C
ANISOU	1127	C	VAL A 158	1430	1350	1159	-17	5	-1	A	C
SIGUIJ	1127	C	VAL A 158	1	0	0	220	86	290	A	C
ATOM	1128	O	VAL A 158	3.652	8.600	26.272	1.00	12.16		A	O
ANISOU	1128	O	VAL A 158	1502	1396	1358	35	-88	-21	A	O
SIGUIJ	1128	O	VAL A 158	1	0	0	221	53	289	A	O
ATOM	1129	N	ASP A 159	2.086	9.578	24.965	1.00	12.76		A	N
ANISOU	1129	N	ASP A 159	1584	1656	1198	20	-77	13	A	N
SIGUIJ	1129	N	ASP A 159	1	0	0	221	60	289	A	N
ATOM	1130	CA	ASP A 159	2.497	8.811	23.777	1.00	13.37		A	C
ANISOU	1130	CA	ASP A 159	1598	1673	1204	-8	-52	-2	A	C
SIGUIJ	1130	CA	ASP A 159	1	0	0	220	86	290	A	C
ATOM	1131	CB	ASP A 159	1.267	8.420	22.927	1.00	14.74		A	C
ANISOU	1131	CB	ASP A 159	1857	2422	1533	-246	-301	42	A	C
SIGUIJ	1131	CB	ASP A 159	1	0	0	220	86	290	A	C
ATOM	1132	CG	ASP A 159	0.493	7.286	23.548	1.00	16.02		A	C
ANISOU	1132	CG	ASP A 159	2007	2337	1862	-160	34	-15	A	C
SIGUIJ	1132	CG	ASP A 159	1	0	0	220	85	290	A	C
ATOM	1133	OD1	ASP A 159	0.719	6.893	24.717	1.00	16.45		A	O
ANISOU	1133	OD1	ASP A 159	2215	2464	1870	-62	17	0	A	O
SIGUIJ	1133	OD1	ASP A 159	1	0	0	221	53	289	A	O
ATOM	1134	OD2	ASP A 159	-0.351	6.719	22.834	1.00	18.29		A	O
ANISOU	1134	OD2	ASP A 159	5074	4532	2734	-2701	-1569	1271	A	O
SIGUIJ	1134	OD2	ASP A 159	1	0	0	221	53	289	A	O
ATOM	1135	C	ASP A 159	3.493	9.567	22.905	1.00	13.43		A	C

- 109 -

ANISOU	1135	C	ASP	A	159	1654	1629	1284	3	36	2	A	C
SIGUIJ	1135	C	ASP	A	159	1	0	0	220	85	290	A	C
ATOM	1136	O	ASP	A	159	3.303	10.759	22.627	1.00	13.53		A	O
ANISOU	1136	O	ASP	A	159	1965	1636	1365	27	-70	-4	A	O
SIGUIJ	1136	O	ASP	A	159	1	0	0	221	53	289	A	O
ATOM	1137	N	VAL	A	160	4.533	8.860	22.468	1.00	13.40		A	N
ANISOU	1137	N	VAL	A	160	1625	1614	1169	0	16	0	A	N
SIGUIJ	1137	N	VAL	A	160	1	0	0	221	60	289	A	N
ATOM	1138	CA	VAL	A	160	5.576	9.460	21.670	1.00	13.93		A	C
ANISOU	1138	CA	VAL	A	160	1688	1606	1314	7	131	10	A	C
SIGUIJ	1138	CA	VAL	A	160	1	0	0	220	85	290	A	C
ATOM	1139	CB	VAL	A	160	6.792	9.849	22.569	1.00	13.94		A	C
ANISOU	1139	CB	VAL	A	160	1836	1945	1543	-94	-38	-4	A	C
SIGUIJ	1139	CB	VAL	A	160	1	0	0	220	85	290	A	C
ATOM	1140	CG1	VAL	A	160	6.462	11.119	23.411	1.00	14.40		A	C
ANISOU	1140	CG1	VAL	A	160	2351	2011	1859	-197	319	-127	A	C
SIGUIJ	1140	CG1	VAL	A	160	1	0	0	220	85	290	A	C
ATOM	1141	CG2	VAL	A	160	7.188	8.695	23.499	1.00	14.36		A	C
ANISOU	1141	CG2	VAL	A	160	2235	1984	1618	-33	-139	13	A	C
SIGUIJ	1141	CG2	VAL	A	160	1	0	0	220	85	290	A	C
ATOM	1142	C	VAL	A	160	6.039	8.422	20.663	1.00	14.44		A	C
ANISOU	1142	C	VAL	A	160	1886	1637	1361	-2	225	-19	A	C
SIGUIJ	1142	C	VAL	A	160	1	0	0	220	85	290	A	C
ATOM	1143	O	VAL	A	160	5.843	7.199	20.854	1.00	14.89		A	O
ANISOU	1143	O	VAL	A	160	2763	1635	1732	-86	614	-37	A	O
SIGUIJ	1143	O	VAL	A	160	1	0	0	221	53	289	A	O
ATOM	1144	N	ALYS	A	161	6.709	8.880	19.616	0.50	14.82		A	N
ANISOU	1144	N	ALYS	A	161	1721	1923	1271	-115	77	8	A	N
SIGUIJ	1144	N	ALYS	A	161	1	0	0	221	60	289	A	N
ATOM	1145	N	BLYS	A	161	6.739	8.891	19.639	0.50	17.01		A	N
ANISOU	1145	N	BLYS	A	161	1678	1944	1216	-153	15	0	A	N
SIGUIJ	1145	N	BLYS	A	161	1	0	0	221	60	289	A	N
ATOM	1146	CA	ALYS	A	161	7.140	7.989	18.553	0.50	15.17		A	C
ANISOU	1146	CA	ALYS	A	161	1807	2002	1245	13	7	-1	A	C
SIGUIJ	1146	CA	ALYS	A	161	1	0	0	220	85	290	A	C
ATOM	1147	CA	BLYS	A	161	7.167	8.044	18.538	0.50	17.36		A	C
ANISOU	1147	CA	BLYS	A	161	1866	2045	1191	22	-24	1	A	C
SIGUIJ	1147	CA	BLYS	A	161	1	0	0	220	85	290	A	C
ATOM	1148	CB	ALYS	A	161	6.749	8.600	17.194	0.50	16.95		A	C
ANISOU	1148	CB	ALYS	A	161	2060	2058	1278	-5	-79	21	A	C
SIGUIJ	1148	CB	ALYS	A	161	1	0	0	220	85	290	A	C
ATOM	1149	CB	BLYS	A	161	6.826	8.764	17.223	0.50	19.14		A	C
ANISOU	1149	CB	BLYS	A	161	3838	2063	1294	108	-494	-25	A	C
SIGUIJ	1149	CB	BLYS	A	161	1	0	0	220	85	290	A	C
ATOM	1150	CG	ALYS	A	161	5.437	8.043	16.545	0.50	19.34		A	C
ANISOU	1150	CG	ALYS	A	161	2915	5131	1914	-1480	-539	360	A	C
SIGUIJ	1150	CG	ALYS	A	161	1	0	0	220	85	290	A	C
ATOM	1151	CG	BLYS	A	161	7.117	7.965	15.951	0.50	21.53		A	C
ANISOU	1151	CG	BLYS	A	161	3547	1785	1294	-348	-276	47	A	C
SIGUIJ	1151	CG	BLYS	A	161	1	0	0	220	85	290	A	C
ATOM	1152	CD	ALYS	A	161	5.332	8.488	15.063	0.50	20.76		A	C

- 110 -

ANISOU	1152	CD	ALYS	A	161	4366	4204	1772	34	-188	-25	A	C
SIGUIJ	1152	CD	ALYS	A	161	1	0	0	220	85	290	A	C
ATOM	1153	CD	BLYS	A	161	6.593	8.709	14.720	0.50	22.95		A	C
ANISOU	1153	CD	BLYS	A	161	4275	2216	1181	430	-112	-19	A	C
SIGUIJ	1153	CD	BLYS	A	161	1	0	0	220	85	290	A	C
ATOM	1154	CE	ALYS	A	161	5.716	9.966	14.901	0.50	22.03		A	C
ANISOU	1154	CE	ALYS	A	161	8184	4418	3039	-842	864	-158	A	C
SIGUIJ	1154	CE	ALYS	A	161	1	0	0	220	84	290	A	C
ATOM	1155	CE	BLYS	A	161	7.245	10.085	14.606	0.50	24.22		A	C
ANISOU	1155	CE	BLYS	A	161	4538	2268	2011	316	0	0	A	C
SIGUIJ	1155	CE	BLYS	A	161	1	0	0	220	84	290	A	C
ATOM	1156	NZ	ALYS	A	161	5.633	10.480	13.492	0.50	23.07		A	N
ANISOU	1156	NZ	ALYS	A	161	9802	5323	3110	434	1233	98	A	N
SIGUIJ	1156	NZ	ALYS	A	161	1	0	0	221	60	289	A	N
ATOM	1157	NZ	BLYS	A	161	7.093	10.747	13.285	0.50	25.26		A	N
ANISOU	1157	NZ	BLYS	A	161	3509	2200	2008	85	6	0	A	N
SIGUIJ	1157	NZ	BLYS	A	161	1	0	0	221	60	289	A	N
ATOM	1158	C	ALYS	A	161	8.652	7.771	18.618	0.50	14.88		A	C
ANISOU	1158	C	ALYS	A	161	1803	1893	1418	-6	15	0	A	C
SIGUIJ	1158	C	ALYS	A	161	1	0	0	220	84	290	A	C
ATOM	1159	C	BLYS	A	161	8.672	7.780	18.617	0.50	17.07		A	C
ANISOU	1159	C	BLYS	A	161	1857	1895	1357	1	-25	0	A	C
SIGUIJ	1159	C	BLYS	A	161	1	0	0	220	84	290	A	C
ATOM	1160	O	ALYS	A	161	9.407	8.730	18.907	0.50	14.76		A	O
ANISOU	1160	O	ALYS	A	161	1819	1897	1528	-9	-26	-1	A	O
SIGUIJ	1160	O	ALYS	A	161	1	0	0	221	53	289	A	O
ATOM	1161	O	BLYS	A	161	9.444	8.716	18.909	0.50	16.95		A	O
ANISOU	1161	O	BLYS	A	161	1871	1904	1438	-5	-48	-4	A	O
SIGUIJ	1161	O	BLYS	A	161	1	0	0	221	53	289	A	O
ATOM	1162	N	LEU	A	162	9.111	6.539	18.367	1.00	14.53		A	N
ANISOU	1162	N	LEU	A	162	1637	1883	1170	-41	-184	-22	A	N
SIGUIJ	1162	N	LEU	A	162	1	0	0	221	60	289	A	N
ATOM	1163	CA	LEU	A	162	10.540	6.245	18.423	1.00	14.97		A	C
ANISOU	1163	CA	LEU	A	162	1641	1937	1336	-28	-196	-30	A	C
SIGUIJ	1163	CA	LEU	A	162	1	0	0	220	84	290	A	C
ATOM	1164	CB	LEU	A	162	10.797	4.765	18.271	1.00	15.03		A	C
ANISOU	1164	CB	LEU	A	162	2006	1945	1331	30	-92	-19	A	C
SIGUIJ	1164	CB	LEU	A	162	1	0	0	220	84	290	A	C
ATOM	1165	CG	LEU	A	162	10.240	3.915	19.380	1.00	15.42		A	C
ANISOU	1165	CG	LEU	A	162	2416	2021	1397	-68	36	-4	A	C
SIGUIJ	1165	CG	LEU	A	162	1	0	0	220	84	290	A	C
ATOM	1166	CD1	LEU	A	162	10.716	2.477	19.181	1.00	15.74		A	C
ANISOU	1166	CD1	LEU	A	162	2552	2029	1560	-38	114	-6	A	C
SIGUIJ	1166	CD1	LEU	A	162	1	0	0	220	84	290	A	C
ATOM	1167	CD2	LEU	A	162	10.693	4.416	20.755	1.00	15.28		A	C
ANISOU	1167	CD2	LEU	A	162	2820	1970	1440	-3	-127	0	A	C
SIGUIJ	1167	CD2	LEU	A	162	1	0	0	220	84	290	A	C
ATOM	1168	C	LEU	A	162	11.304	6.935	17.295	1.00	15.37		A	C
ANISOU	1168	C	LEU	A	162	1833	1949	1447	5	-48	0	A	C
SIGUIJ	1168	C	LEU	A	162	1	0	0	220	84	290	A	C
ATOM	1169	O	LEU	A	162	10.794	7.015	16.148	1.00	15.52		A	O

- 111 -

ANISOU	1169	O	LEU	A	162	1829	2144	1445	-15	-39	0	A	O
SIGUIJ	1169	O	LEU	A	162	1	0	0	221	53	289	A	O
ATOM	1170	N	ILE	A	163	12.498	7.435	17.619	1.00	15.74		A	N
ANISOU	1170	N	ILE	A	163	1883	2260	1359	-125	-34	-3	A	N
SIGUIJ	1170	N	ILE	A	163	1	0	0	221	60	289	A	N
ATOM	1171	CA	ILE	A	163	13.354	8.202	16.719	1.00	16.21		A	C
ANISOU	1171	CA	ILE	A	163	1862	2200	1390	-53	2	0	A	C
SIGUIJ	1171	CA	ILE	A	163	1	0	0	220	84	290	A	C
ATOM	1172	CB	ILE	A	163	13.472	9.672	17.202	1.00	15.92		A	C
ANISOU	1172	CB	ILE	A	163	2120	2205	1412	-20	-124	-15	A	C
SIGUIJ	1172	CB	ILE	A	163	1	0	0	220	84	290	A	C
ATOM	1173	CG2	ILE	A	163	14.500	10.400	16.330	1.00	15.79		A	C
ANISOU	1173	CG2	ILE	A	163	2191	2218	1522	-2	-32	-1	A	C
SIGUIJ	1173	CG2	ILE	A	163	1	0	0	220	84	290	A	C
ATOM	1174	CG1	ILE	A	163	12.117	10.382	17.185	1.00	15.79		A	C
ANISOU	1174	CG1	ILE	A	163	2130	2228	1603	0	-121	-1	A	C
SIGUIJ	1174	CG1	ILE	A	163	1	0	0	220	84	290	A	C
ATOM	1175	CD1	ILE	A	163	12.075	11.716	17.970	1.00	15.74		A	C
ANISOU	1175	CD1	ILE	A	163	2539	2223	1621	-69	39	-6	A	C
SIGUIJ	1175	CD1	ILE	A	163	1	0	0	220	84	290	A	C
ATOM	1176	C	ILE	A	163	14.720	7.506	16.806	1.00	16.73		A	C
ANISOU	1176	C	ILE	A	163	1831	2097	1548	-115	-3	0	A	C
SIGUIJ	1176	C	ILE	A	163	1	0	0	220	83	290	A	C
ATOM	1177	O	ILE	A	163	15.248	7.225	17.902	1.00	16.91		A	O
ANISOU	1177	O	ILE	A	163	1812	2195	1546	-43	21	-1	A	O
SIGUIJ	1177	O	ILE	A	163	1	0	0	221	53	289	A	O
ATOM	1178	N	ASER	A	164	15.283	7.166	15.649	0.50	17.54		A	N
ANISOU	1178	N	ASER	A	164	1955	2334	1556	13	11	0	A	N
SIGUIJ	1178	N	ASER	A	164	1	0	0	221	60	289	A	N
ATOM	1179	N	BSER	A	164	15.299	7.181	15.648	0.50	19.73		A	N
ANISOU	1179	N	BSER	A	164	2017	2399	1584	-12	62	-5	A	N
SIGUIJ	1179	N	BSER	A	164	1	0	0	221	60	289	A	N
ATOM	1180	CA	ASER	A	164	16.610	6.552	15.616	0.50	18.20		A	C
ANISOU	1180	CA	ASER	A	164	1927	2198	1631	-47	11	0	A	C
SIGUIJ	1180	CA	ASER	A	164	1	0	0	220	83	290	A	C
ATOM	1181	CA	BSER	A	164	16.626	6.547	15.627	0.50	20.39		A	C
ANISOU	1181	CA	BSER	A	164	2009	2396	1594	-21	53	1	A	C
SIGUIJ	1181	CA	BSER	A	164	1	0	0	220	83	290	A	C
ATOM	1182	CB	ASER	A	164	16.963	6.230	14.159	0.50	18.66		A	C
ANISOU	1182	CB	ASER	A	164	2509	2259	1665	-37	143	-14	A	C
SIGUIJ	1182	CB	ASER	A	164	1	0	0	220	83	290	A	C
ATOM	1183	CB	BSER	A	164	17.049	6.228	14.188	0.50	20.85		A	C
ANISOU	1183	CB	BSER	A	164	2339	3908	1573	918	-59	-42	A	C
SIGUIJ	1183	CB	BSER	A	164	1	0	0	220	83	290	A	C
ATOM	1184	OG	ASER	A	164	18.305	5.844	14.025	0.50	20.65		A	O
ANISOU	1184	OG	ASER	A	164	2516	2354	1592	-9	137	-6	A	O
SIGUIJ	1184	OG	ASER	A	164	1	0	0	221	53	289	A	O
ATOM	1185	OG	BSER	A	164	17.503	7.408	13.543	0.50	22.84		A	O
ANISOU	1185	OG	BSER	A	164	4086	4269	1212	-25	-553	-49	A	O
SIGUIJ	1185	OG	BSER	A	164	1	0	0	221	53	289	A	O
ATOM	1186	C	ASER	A	164	17.670	7.497	16.218	0.50	18.34		A	C

- 112 -

ANISOU	1186	C	ASER	A	164	2095	2445	1585	-265	48	-6	A	C
SIGUIJ	1186	C	ASER	A	164	1	0	0	220	83	290	A	C
ATOM	1187	C	BSER	A	164	17.672	7.493	16.228	0.50	20.53		A	C
ANISOU	1187	C	BSER	A	164	2139	2579	1570	-188	66	-2	A	C
SIGUIJ	1187	C	BSER	A	164	1	0	0	220	83	290	A	C
ATOM	1188	O	ASER	A	164	17.544	8.711	16.080	0.50	18.24		A	O
ANISOU	1188	O	ASER	A	164	1689	2442	1801	-325	9	11	A	O
SIGUIJ	1188	O	ASER	A	164	1	0	0	221	53	289	A	O
ATOM	1189	O	BSER	A	164	17.547	8.706	16.089	0.50	20.43		A	O
ANISOU	1189	O	BSER	A	164	1868	2576	1648	-238	-7	4	A	O
SIGUIJ	1189	O	BSER	A	164	1	0	0	221	53	289	A	O
ATOM	1190	N	PRO	A	165	18.726	6.936	16.871	1.00	18.81		A	N
ANISOU	1190	N	PRO	A	165	2149	2718	1539	-112	89	-4	A	N
SIGUIJ	1190	N	PRO	A	165	1	0	0	221	60	289	A	N
ATOM	1191	CD	PRO	A	165	18.987	5.525	17.213	1.00	18.76		A	C
ANISOU	1191	CD	PRO	A	165	2457	2721	1699	-69	-46	-3	A	C
SIGUIJ	1191	CD	PRO	A	165	1	0	0	220	83	290	A	C
ATOM	1192	CA	PRO	A	165	19.775	7.824	17.374	1.00	19.57		A	C
ANISOU	1192	CA	PRO	A	165	2032	2668	1427	-48	195	-33	A	C
SIGUIJ	1192	CA	PRO	A	165	1	0	0	220	83	290	A	C
ATOM	1193	CB	PRO	A	165	20.786	6.876	18.018	1.00	19.09		A	C
ANISOU	1193	CB	PRO	A	165	2277	2742	1967	3	-109	9	A	C
SIGUIJ	1193	CB	PRO	A	165	1	0	0	220	83	290	A	C
ATOM	1194	CG	PRO	A	165	20.466	5.504	17.491	1.00	19.35		A	C
ANISOU	1194	CG	PRO	A	165	2468	2765	2015	-50	-98	-10	A	C
SIGUIJ	1194	CG	PRO	A	165	1	0	0	220	83	290	A	C
ATOM	1195	C	PRO	A	165	20.380	8.674	16.265	1.00	20.46		A	C
ANISOU	1195	C	PRO	A	165	2709	3180	1499	-561	189	70	A	C
SIGUIJ	1195	C	PRO	A	165	1	0	0	220	83	290	A	C
ATOM	1196	O	PRO	A	165	20.723	9.841	16.475	1.00	20.36		A	O
ANISOU	1196	O	PRO	A	165	2254	3139	2103	-399	-6	15	A	O
SIGUIJ	1196	O	PRO	A	165	1	0	0	221	53	289	A	O
ATOM	1197	N	GLN	A	166	20.476	8.111	15.063	1.00	21.46		A	N
ANISOU	1197	N	GLN	A	166	2181	3457	1534	-440	99	-28	A	N
SIGUIJ	1197	N	GLN	A	166	1	0	0	221	60	289	A	N
ATOM	1198	CA	GLN	A	166	21.083	8.867	13.962	1.00	22.39		A	C
ANISOU	1198	CA	GLN	A	166	2032	3534	1614	-301	112	82	A	C
SIGUIJ	1198	CA	GLN	A	166	1	0	0	220	83	290	A	C
ATOM	1199	CB	GLN	A	166	21.313	7.971	12.734	1.00	23.16		A	C
ANISOU	1199	CB	GLN	A	166	3581	3767	1697	41	163	-25	A	C
SIGUIJ	1199	CB	GLN	A	166	1	0	0	220	83	290	A	C
ATOM	1200	CG	GLN	A	166	22.377	6.908	12.923	1.00	24.35		A	C
ANISOU	1200	CG	GLN	A	166	3512	3675	2572	-51	33	4	A	C
SIGUIJ	1200	CG	GLN	A	166	1	0	0	220	83	290	A	C
ATOM	1201	CD	GLN	A	166	21.923	5.716	13.746	1.00	25.19		A	C
ANISOU	1201	CD	GLN	A	166	5033	3707	2696	-308	498	-85	A	C
SIGUIJ	1201	CD	GLN	A	166	1	0	0	220	83	290	A	C
ATOM	1202	OE1	GLN	A	166	20.727	5.479	13.912	1.00	25.85		A	O
ANISOU	1202	OE1	GLN	A	166	5129	6361	2617	-825	467	14	A	O
SIGUIJ	1202	OE1	GLN	A	166	1	0	0	221	53	289	A	O
ATOM	1203	NE2	GLN	A	166	22.885	4.959	14.268	1.00	26.18		A	N

- 113 -

ANISOU	1203	NE2	GLN	A	166	7239	6079	4294	1731	-609	-394	A	N
SIGUIJ	1203	NE2	GLN	A	166	1	0	0	221	60	289	A	N
ATOM	1204	C	GLN	A	166	20.221	10.037	13.575	1.00	22.75		A	C
ANISOU	1204	C	GLN	A	166	2587	3802	1480	91	61	-2	A	C
SIGUIJ	1204	C	GLN	A	166	1	0	0	220	82	290	A	C
ATOM	1205	O	GLN	A	166	20.709	10.983	12.975	1.00	23.16		A	O
ANISOU	1205	O	GLN	A	166	4006	4222	3316	40	1137	617	A	O
SIGUIJ	1205	O	GLN	A	166	1	0	0	221	53	289	A	O
ATOM	1206	N	ASP	A	167	18.938	9.991	13.913	1.00	22.90		A	N
ANISOU	1206	N	ASP	A	167	2602	3170	1754	108	135	0	A	N
SIGUIJ	1206	N	ASP	A	167	1	0	0	221	60	289	A	N
ATOM	1207	CA	ASP	A	167	18.056	11.093	13.579	1.00	23.15		A	C
ANISOU	1207	CA	ASP	A	167	3064	3415	2305	420	-80	-10	A	C
SIGUIJ	1207	CA	ASP	A	167	1	0	0	220	82	290	A	C
ATOM	1208	CB	ASP	A	167	16.706	10.538	13.068	1.00	24.27		A	C
ANISOU	1208	CB	ASP	A	167	3393	5992	1565	-639	200	-15	A	C
SIGUIJ	1208	CB	ASP	A	167	1	0	0	220	82	290	A	C
ATOM	1209	CG	ASP	A	167	16.877	9.635	11.810	1.00	25.43		A	C
ANISOU	1209	CG	ASP	A	167	5659	6095	1537	-5	55	-1	A	C
SIGUIJ	1209	CG	ASP	A	167	1	0	0	220	82	290	A	C
ATOM	1210	OD1	ASP	A	167	17.549	10.088	10.848	1.00	26.67		A	O
ANISOU	1210	OD1	ASP	A	167	6408	6339	1957	-7	580	105	A	O
SIGUIJ	1210	OD1	ASP	A	167	1	0	0	221	53	289	A	O
ATOM	1211	OD2	ASP	A	167	16.381	8.468	11.749	1.00	26.53		A	O
ANISOU	1211	OD2	ASP	A	167	5637	6082	4197	23	-291	5	A	O
SIGUIJ	1211	OD2	ASP	A	167	1	0	0	221	53	289	A	O
ATOM	1212	C	ASP	A	167	17.849	12.040	14.763	1.00	22.74		A	C
ANISOU	1212	C	ASP	A	167	2535	3302	2299	155	59	25	A	C
SIGUIJ	1212	C	ASP	A	167	1	0	0	220	82	290	A	C
ATOM	1213	O	ASP	A	167	17.058	12.949	14.672	1.00	23.11		A	O
ANISOU	1213	O	ASP	A	167	5157	5350	2673	2471	408	362	A	O
SIGUIJ	1213	O	ASP	A	167	1	0	0	221	53	289	A	O
ATOM	1214	N	CYS	A	168	18.565	11.819	15.863	1.00	21.84		A	N
ANISOU	1214	N	CYS	A	168	2657	2909	2338	110	-25	0	A	N
SIGUIJ	1214	N	CYS	A	168	1	0	0	221	60	289	A	N
ATOM	1215	CA	CYS	A	168	18.455	12.574	17.109	1.00	21.29		A	C
ANISOU	1215	CA	CYS	A	168	2458	2912	2337	10	18	1	A	C
SIGUIJ	1215	CA	CYS	A	168	1	0	0	220	82	290	A	C
ATOM	1216	C	CYS	A	168	19.744	13.356	17.349	1.00	21.19		A	C
ANISOU	1216	C	CYS	A	168	2440	2839	2561	37	-1	0	A	C
SIGUIJ	1216	C	CYS	A	168	1	0	0	220	82	290	A	C
ATOM	1217	O	CYS	A	168	20.753	12.779	17.774	1.00	21.33		A	O
ANISOU	1217	O	CYS	A	168	2350	2590	2614	-110	-8	-3	A	O
SIGUIJ	1217	O	CYS	A	168	1	0	0	221	53	289	A	O
ATOM	1218	CB	CYS	A	168	18.227	11.592	18.289	1.00	20.25		A	C
ANISOU	1218	CB	CYS	A	168	2799	2942	2314	22	38	0	A	C
SIGUIJ	1218	CB	CYS	A	168	1	0	0	220	82	290	A	C
ATOM	1219	SG	CYS	A	168	17.637	12.381	19.813	1.00	19.44		A	S
ANISOU	1219	SG	CYS	A	168	2305	2485	2228	-371	51	139	A	S
SIGUIJ	1219	SG	CYS	A	168	1	0	0	221	48	289	A	S
ATOM	1220	N	THR	A	169	19.704	14.662	17.133	1.00	21.34		A	N

ANISOU	1220	N	THR	A	169	2615	2832	2450	37	2	0	A	N
SIGUIJ	1220	N	THR	A	169	1	0	0	221	60	289	A	N
ATOM	1221	CA	THR	A	169	20.939	15.446	17.084	1.00	21.34		A	C
ANISOU	1221	CA	THR	A	169	2648	2897	3004	-8	26	1	A	C
SIGUIJ	1221	CA	THR	A	169	1	0	0	220	82	290	A	C
ATOM	1222	CB	THR	A	169	20.619	16.869	16.685	1.00	21.92		A	C
ANISOU	1222	CB	THR	A	169	3516	2947	3132	191	37	15	A	C
SIGUIJ	1222	CB	THR	A	169	1	0	0	220	82	290	A	C
ATOM	1223	OG1	THR	A	169	19.746	16.838	15.550	1.00	22.86		A	O
ANISOU	1223	OG1	THR	A	169	3587	3924	3179	159	-15	0	A	O
SIGUIJ	1223	OG1	THR	A	169	1	0	0	221	53	289	A	O
ATOM	1224	CG2	THR	A	169	21.905	17.637	16.423	1.00	22.13		A	C
ANISOU	1224	CG2	THR	A	169	3660	3327	3109	-45	39	-4	A	C
SIGUIJ	1224	CG2	THR	A	169	1	0	0	220	82	290	A	C
ATOM	1225	C	THR	A	169	21.691	15.465	18.390	1.00	21.07		A	C
ANISOU	1225	C	THR	A	169	2190	2662	2837	-67	302	33	A	C
SIGUIJ	1225	C	THR	A	169	1	0	0	220	82	290	A	C
ATOM	1226	O	THR	A	169	22.905	15.517	18.392	1.00	21.00		A	O
ANISOU	1226	O	THR	A	169	2187	2828	3303	-78	303	29	A	O
SIGUIJ	1226	O	THR	A	169	1	0	0	221	53	289	A	O
ATOM	1227	N	LYS	A	170	20.975	15.412	19.523	1.00	20.57		A	N
ANISOU	1227	N	LYS	A	170	1891	2629	2700	-119	96	14	A	N
SIGUIJ	1227	N	LYS	A	170	1	0	0	221	60	289	A	N
ATOM	1228	CA	LYS	A	170	21.672	15.507	20.806	1.00	20.13		A	C
ANISOU	1228	CA	LYS	A	170	1876	2497	2697	-38	92	5	A	C
SIGUIJ	1228	CA	LYS	A	170	1	0	0	220	82	290	A	C
ATOM	1229	CB	LYS	A	170	20.709	15.882	21.943	1.00	19.74		A	C
ANISOU	1229	CB	LYS	A	170	1824	2107	2682	-157	85	27	A	C
SIGUIJ	1229	CB	LYS	A	170	1	0	0	220	82	290	A	C
ATOM	1230	CG	LYS	A	170	19.604	14.816	22.229	1.00	18.85		A	C
ANISOU	1230	CG	LYS	A	170	1779	2060	2249	-125	1	0	A	C
SIGUIJ	1230	CG	LYS	A	170	1	0	0	220	82	290	A	C
ATOM	1231	CD	LYS	A	170	18.720	15.116	23.458	1.00	18.16		A	C
ANISOU	1231	CD	LYS	A	170	1837	2256	2256	-43	12	1	A	C
SIGUIJ	1231	CD	LYS	A	170	1	0	0	220	82	290	A	C
ATOM	1232	CE	LYS	A	170	17.997	16.462	23.389	1.00	17.62		A	C
ANISOU	1232	CE	LYS	A	170	1895	2266	1848	-17	3	-1	A	C
SIGUIJ	1232	CE	LYS	A	170	1	0	0	220	82	290	A	C
ATOM	1233	NZ	LYS	A	170	16.968	16.452	22.315	1.00	16.88		A	N
ANISOU	1233	NZ	LYS	A	170	1898	1875	1853	-3	1	0	A	N
SIGUIJ	1233	NZ	LYS	A	170	1	0	0	221	60	289	A	N
ATOM	1234	C	LYS	A	170	22.412	14.201	21.174	1.00	20.06		A	C
ANISOU	1234	C	LYS	A	170	1567	2434	2438	-165	245	44	A	C
SIGUIJ	1234	C	LYS	A	170	1	0	0	220	81	290	A	C
ATOM	1235	O	LYS	A	170	23.217	14.193	22.112	1.00	20.45		A	O
ANISOU	1235	O	LYS	A	170	1997	3070	2753	-90	-129	-13	A	O
SIGUIJ	1235	O	LYS	A	170	1	0	0	221	53	289	A	O
ATOM	1236	N	VAL	A	171	22.152	13.098	20.470	1.00	20.14		A	N
ANISOU	1236	N	VAL	A	171	1835	2415	2364	-225	255	89	A	N
SIGUIJ	1236	N	VAL	A	171	1	0	0	221	60	289	A	N
ATOM	1237	CA	VAL	A	171	22.895	11.853	20.727	1.00	20.53		A	C

ANISOU	1237	CA	VAL	A	171	2282	2522	2780	-12	-61	-3	A	C
SIGUIJ	1237	CA	VAL	A	171	1	0	0	220	81	290	A	C
ATOM	1238	CB	VAL	A	171	22.084	10.556	20.310	1.00	20.49		A	C
ANISOU	1238	CB	VAL	A	171	2207	2520	2482	-16	71	4	A	C
SIGUIJ	1238	CB	VAL	A	171	1	0	0	220	81	290	A	C
ATOM	1239	CG1	VAL	A	171	22.984	9.287	20.470	1.00	20.47		A	C
ANISOU	1239	CG1	VAL	A	171	2247	2537	2636	8	29	-1	A	C
SIGUIJ	1239	CG1	VAL	A	171	1	0	0	220	81	290	A	C
ATOM	1240	CG2	VAL	A	171	20.770	10.419	21.143	1.00	20.58		A	C
ANISOU	1240	CG2	VAL	A	171	2165	3658	2337	-151	-17	-8	A	C
SIGUIJ	1240	CG2	VAL	A	171	1	0	0	220	81	290	A	C
ATOM	1241	C	VAL	A	171	24.187	11.930	19.884	1.00	20.83		A	C
ANISOU	1241	C	VAL	A	171	2346	3732	2925	-83	29	3	A	C
SIGUIJ	1241	C	VAL	A	171	1	0	0	220	81	290	A	C
ATOM	1242	O	VAL	A	171	24.131	12.259	18.675	1.00	21.72		A	O
ANISOU	1242	O	VAL	A	171	2571	3750	2925	47	63	-4	A	O
SIGUIJ	1242	O	VAL	A	171	1	0	0	221	53	289	A	O
ATOM	1243	N	GLU	A	177	24.714	6.144	22.061	1.00	30.45		A	N
ANISOU	1243	N	GLU	A	177	15233	5567	7403	2183	1205	295	A	N
SIGUIJ	1243	N	GLU	A	177	1	0	0	221	59	289	A	N
ATOM	1244	CA	GLU	A	177	25.208	5.336	20.938	1.00	30.20		A	C
ANISOU	1244	CA	GLU	A	177	6599	3692	7053	-1437	11	52	A	C
SIGUIJ	1244	CA	GLU	A	177	1	0	0	220	81	290	A	C
ATOM	1245	CB	GLU	A	177	26.280	4.351	21.409	1.00	30.89		A	C
ANISOU	1245	CB	GLU	A	177	8482	5844	7054	574	-73	-22	A	C
SIGUIJ	1245	CB	GLU	A	177	1	0	0	220	81	290	A	C
ATOM	1246	CG	GLU	A	177	27.548	4.940	22.022	1.00	31.90		A	C
ANISOU	1246	CG	GLU	A	177	8808	7402	6935	-165	-36	4	A	C
SIGUIJ	1246	CG	GLU	A	177	1	0	0	220	81	290	A	C
ATOM	1247	CD	GLU	A	177	28.257	3.887	22.864	1.00	32.41		A	C
ANISOU	1247	CD	GLU	A	177	9329	7656	6884	219	11	1	A	C
SIGUIJ	1247	CD	GLU	A	177	1	0	0	220	81	290	A	C
ATOM	1248	OE1	GLU	A	177	27.734	2.734	22.885	1.00	33.04		A	O
ANISOU	1248	OE1	GLU	A	177	10051	7800	17802	-100	605	-45	A	O
SIGUIJ	1248	OE1	GLU	A	177	1	0	0	221	53	289	A	O
ATOM	1249	OE2	GLU	A	177	29.309	4.194	23.498	1.00	33.04		A	O
ANISOU	1249	OE2	GLU	A	177	9204	7747	6480	175	243	22	A	O
SIGUIJ	1249	OE2	GLU	A	177	1	0	0	221	53	289	A	O
ATOM	1250	C	GLU	A	177	24.084	4.530	20.269	1.00	29.54		A	C
ANISOU	1250	C	GLU	A	177	6277	2685	7931	-641	-409	-78	A	C
SIGUIJ	1250	C	GLU	A	177	1	0	0	220	81	290	A	C
ATOM	1251	O	GLU	A	177	22.911	4.914	20.319	1.00	29.57		A	O
ANISOU	1251	O	GLU	A	177	6388	3811	3113	-269	-563	51	A	O
SIGUIJ	1251	O	GLU	A	177	1	0	0	221	53	289	A	O
ATOM	1252	N	ASN	A	178	24.479	3.419	19.638	1.00	28.62		A	N
ANISOU	1252	N	ASN	A	178	9088	2947	8004	196	-131	-24	A	N
SIGUIJ	1252	N	ASN	A	178	1	0	0	221	59	289	A	N
ATOM	1253	CA	ASN	A	178	23.571	2.477	18.981	1.00	27.24		A	C
ANISOU	1253	CA	ASN	A	178	7592	3769	4115	-488	2926	-271	A	C
SIGUIJ	1253	CA	ASN	A	178	1	0	0	220	81	290	A	C
ATOM	1254	CB	ASN	A	178	24.352	1.495	18.067	1.00	28.13		A	C

ANISOU	1254	CB	ASN	A	178	6290	3877	2567	-101	1381	-56	A	C
SIGUIJ	1254	CB	ASN	A	178	1	0	0	220	81	290	A	C
ATOM	1255	CG	ASN	A	178	25.745	1.119	18.625	1.00	28.73		A	C
ANISOU	1255	CG	ASN	A	178	6714	4665	4896	81	458	19	A	C
SIGUIJ	1255	CG	ASN	A	178	1	0	0	220	81	290	A	C
ATOM	1256	OD1	ASN	A	178	26.192	1.636	19.666	1.00	29.72		A	O
ANISOU	1256	OD1	ASN	A	178	8455	4754	5214	23	-259	-2	A	O
SIGUIJ	1256	OD1	ASN	A	178	1	0	0	221	53	289	A	O
ATOM	1257	ND2	ASN	A	178	26.448	0.220	17.914	1.00	29.42		A	N
ANISOU	1257	ND2	ASN	A	178	7350	5001	4766	590	434	99	A	N
SIGUIJ	1257	ND2	ASN	A	178	1	0	0	221	59	289	A	N
ATOM	1258	C	ASN	A	178	22.775	1.681	20.016	1.00	25.77		A	C
ANISOU	1258	C	ASN	A	178	3575	3705	2238	-41	180	37	A	C
SIGUIJ	1258	C	ASN	A	178	1	0	0	220	81	290	A	C
ATOM	1259	O	ASN	A	178	22.065	0.768	19.660	1.00	26.06		A	O
ANISOU	1259	O	ASN	A	178	7055	7616	3835	-3753	2759	-2585	A	O
SIGUIJ	1259	O	ASN	A	178	1	0	0	221	53	289	A	O
ATOM	1260	N	SER	A	179	22.896	2.009	21.299	1.00	23.67		A	N
ANISOU	1260	N	SER	A	179	2304	2817	2162	-205	341	260	A	N
SIGUIJ	1260	N	SER	A	179	1	0	0	221	59	289	A	N
ATOM	1261	CA	SER	A	179	21.988	1.398	22.278	1.00	21.65		A	C
ANISOU	1261	CA	SER	A	179	1937	1871	1752	31	149	-112	A	C
SIGUIJ	1261	CA	SER	A	179	1	0	0	220	81	290	A	C
ATOM	1262	CB	SER	A	179	22.760	0.577	23.301	1.00	21.87		A	C
ANISOU	1262	CB	SER	A	179	2977	2792	1952	849	20	15	A	C
SIGUIJ	1262	CB	SER	A	179	1	0	0	220	81	290	A	C
ATOM	1263	OG	SER	A	179	23.751	1.382	23.877	1.00	22.51		A	O
ANISOU	1263	OG	SER	A	179	3828	3864	2467	-1	-265	-14	A	O
SIGUIJ	1263	OG	SER	A	179	1	0	0	221	53	289	A	O
ATOM	1264	C	SER	A	179	21.163	2.461	22.981	1.00	20.58		A	C
ANISOU	1264	C	SER	A	179	1866	1786	1496	27	89	17	A	C
SIGUIJ	1264	C	SER	A	179	1	0	0	220	80	290	A	C
ATOM	1265	O	SER	A	179	20.666	2.225	24.082	1.00	19.04		A	O
ANISOU	1265	O	SER	A	179	1600	1802	1451	-24	-42	-1	A	O
SIGUIJ	1265	O	SER	A	179	1	0	0	221	53	289	A	O
ATOM	1266	N	MET	A	180	21.010	3.603	22.317	1.00	19.80		A	N
ANISOU	1266	N	MET	A	180	2051	1818	1507	107	260	63	A	N
SIGUIJ	1266	N	MET	A	180	1	0	0	221	59	289	A	N
ATOM	1267	CA	MET	A	180	20.080	4.634	22.752	1.00	19.86		A	C
ANISOU	1267	CA	MET	A	180	2142	1852	1489	157	324	100	A	C
SIGUIJ	1267	CA	MET	A	180	1	0	0	220	80	290	A	C
ATOM	1268	CB	MET	A	180	20.877	5.887	23.100	1.00	21.09		A	C
ANISOU	1268	CB	MET	A	180	2439	2022	2291	-55	297	-47	A	C
SIGUIJ	1268	CB	MET	A	180	1	0	0	220	80	290	A	C
ATOM	1269	CG	MET	A	180	21.722	5.649	24.370	1.00	22.71		A	C
ANISOU	1269	CG	MET	A	180	2953	3089	2523	123	-22	2	A	C
SIGUIJ	1269	CG	MET	A	180	1	0	0	220	80	290	A	C
ATOM	1270	SD	MET	A	180	22.740	6.968	25.045	1.00	25.89		A	S
ANISOU	1270	SD	MET	A	180	3687	3461	4056	-155	-668	-263	A	S
SIGUIJ	1270	SD	MET	A	180	1	0	0	221	48	289	A	S
ATOM	1271	CE	MET	A	180	22.682	8.045	23.918	1.00	25.18		A	C

- 117 -

ANISOU	1271	CE	MET	A	180	2232	3732	4211	587	146	-47	A	C
SIGUIJ	1271	CE	MET	A	180	1	0	0	220	80	290	A	C
ATOM	1272	C	MET	A	180	19.024	4.912	21.679	1.00	19.33		A	C
ANISOU	1272	C	MET	A	180	2299	2089	1567	219	212	98	A	C
SIGUIJ	1272	C	MET	A	180	1	0	0	220	80	290	A	C
ATOM	1273	O	MET	A	180	19.264	4.704	20.467	1.00	18.97		A	O
ANISOU	1273	O	MET	A	180	2263	2650	1587	50	250	-36	A	O
SIGUIJ	1273	O	MET	A	180	1	0	0	221	53	289	A	O
ATOM	1274	N	LEU	A	181	17.860	5.385	22.110	1.00	18.49		A	N
ANISOU	1274	N	LEU	A	181	2227	1985	1333	141	80	24	A	N
SIGUIJ	1274	N	LEU	A	181	1	0	0	221	59	289	A	N
ATOM	1275	CA	LEU	A	181	16.721	5.725	21.257	1.00	18.17		A	C
ANISOU	1275	CA	LEU	A	181	2590	2084	1818	292	-347	-155	A	C
SIGUIJ	1275	CA	LEU	A	181	1	0	0	220	80	290	A	C
ATOM	1276	CB	LEU	A	181	15.499	4.782	21.584	1.00	19.17		A	C
ANISOU	1276	CB	LEU	A	181	2887	2534	3154	-22	-109	-2	A	C
SIGUIJ	1276	CB	LEU	A	181	1	0	0	220	80	290	A	C
ATOM	1277	CG	LEU	A	181	15.488	3.297	21.162	1.00	20.31		A	C
ANISOU	1277	CG	LEU	A	181	8681	2536	3196	113	-741	-13	A	C
SIGUIJ	1277	CG	LEU	A	181	1	0	0	220	80	290	A	C
ATOM	1278	CD1	LEU	A	181	14.409	2.548	21.904	1.00	20.65		A	C
ANISOU	1278	CD1	LEU	A	181	8500	1489	3825	817	-292	-42	A	C
SIGUIJ	1278	CD1	LEU	A	181	1	0	0	220	80	290	A	C
ATOM	1279	CD2	LEU	A	181	15.256	3.218	19.670	1.00	20.95		A	C
ANISOU	1279	CD2	LEU	A	181	3788	3211	3073	-175	35	-9	A	C
SIGUIJ	1279	CD2	LEU	A	181	1	0	0	220	80	290	A	C
ATOM	1280	C	LEU	A	181	16.361	7.163	21.654	1.00	17.15		A	C
ANISOU	1280	C	LEU	A	181	1756	1968	1299	14	-130	7	A	C
SIGUIJ	1280	C	LEU	A	181	1	0	0	220	80	290	A	C
ATOM	1281	O	LEU	A	181	16.578	7.556	22.811	1.00	16.13		A	O
ANISOU	1281	O	LEU	A	181	2236	1939	1308	50	-220	-20	A	O
SIGUIJ	1281	O	LEU	A	181	1	0	0	221	53	289	A	O
ATOM	1282	N	CYS	A	182	15.733	7.938	20.767	1.00	15.93		A	N
ANISOU	1282	N	CYS	A	182	1636	1977	1252	15	-62	0	A	N
SIGUIJ	1282	N	CYS	A	182	1	0	0	221	59	289	A	N
ATOM	1283	CA	CYS	A	182	14.999	9.120	21.204	1.00	15.01		A	C
ANISOU	1283	CA	CYS	A	182	1496	1914	1462	-93	3	-6	A	C
SIGUIJ	1283	CA	CYS	A	182	1	0	0	220	80	290	A	C
ATOM	1284	C	CYS	A	182	13.521	8.880	20.989	1.00	14.28		A	C
ANISOU	1284	C	CYS	A	182	1492	1609	1371	-26	9	0	A	C
SIGUIJ	1284	C	CYS	A	182	1	0	0	220	80	290	A	C
ATOM	1285	O	CYS	A	182	13.125	7.915	20.303	1.00	13.79		A	O
ANISOU	1285	O	CYS	A	182	1842	1635	1379	-107	-69	22	A	O
SIGUIJ	1285	O	CYS	A	182	1	0	0	221	53	289	A	O
ATOM	1286	CB	CYS	A	182	15.471	10.364	20.446	1.00	15.88		A	C
ANISOU	1286	CB	CYS	A	182	1854	1974	1505	-259	21	-7	A	C
SIGUIJ	1286	CB	CYS	A	182	1	0	0	220	80	290	A	C
ATOM	1287	SG	CYS	A	182	17.179	10.774	20.933	1.00	16.61		A	S
ANISOU	1287	SG	CYS	A	182	1886	2331	1784	-338	-44	-111	A	S
SIGUIJ	1287	SG	CYS	A	182	1	0	0	221	48	289	A	S
ATOM	1288	N	ALA	A	183	12.691	9.734	21.548	1.00	13.52		A	N

- 118 -

ANISOU	1288	N	ALA	A	183	1501	1611	1283	3	-50	1	A	N
SIGUIJ	1288	N	ALA	A	183	1	0	0	221	59	289	A	N
ATOM	1289	CA	ALA	A	183	11.260	9.592	21.273	1.00	13.20		A	C
ANISOU	1289	CA	ALA	A	183	1517	1668	1319	-31	-57	-7	A	C
SIGUIJ	1289	CA	ALA	A	183	1	0	0	220	80	290	A	C
ATOM	1290	CB	ALA	A	183	10.574	8.603	22.227	1.00	13.34		A	C
ANISOU	1290	CB	ALA	A	183	1571	1652	1389	1	13	0	A	C
SIGUIJ	1290	CB	ALA	A	183	1	0	0	220	80	290	A	C
ATOM	1291	C	ALA	A	183	10.599	10.959	21.446	1.00	13.39		A	C
ANISOU	1291	C	ALA	A	183	1651	1674	1264	-5	-1	0	A	C
SIGUIJ	1291	C	ALA	A	183	1	0	0	220	80	290	A	C
ATOM	1292	O	ALA	A	183	10.937	11.736	22.383	1.00	13.25		A	O
ANISOU	1292	O	ALA	A	183	1903	1675	1270	-79	-38	8	A	O
SIGUIJ	1292	O	ALA	A	183	1	0	0	221	53	289	A	O
ATOM	1293	N	GLY	A	184	9.634	11.249	20.592	1.00	13.85		A	N
ANISOU	1293	N	GLY	A	184	1692	1596	1308	-57	-37	11	A	N
SIGUIJ	1293	N	GLY	A	184	1	0	0	221	59	289	A	N
ATOM	1294	CA	GLY	A	184	8.925	12.512	20.673	1.00	14.85		A	C
ANISOU	1294	CA	GLY	A	184	1833	1634	1631	4	21	0	A	C
SIGUIJ	1294	CA	GLY	A	184	1	0	0	220	79	290	A	C
ATOM	1295	C	GLY	A	184	7.853	12.524	19.591	1.00	15.55		A	C
ANISOU	1295	C	GLY	A	184	1908	1981	1696	13	-48	4	A	C
SIGUIJ	1295	C	GLY	A	184	1	0	0	220	79	290	A	C
ATOM	1296	O	GLY	A	184	7.673	11.534	18.865	1.00	15.41		A	O
ANISOU	1296	O	GLY	A	184	2337	1985	1746	5	-160	-1	A	O
SIGUIJ	1296	O	GLY	A	184	1	0	0	221	53	289	A	O
ATOM	1297	N	ILE	A	185	7.149	13.649	19.494	1.00	16.56		A	N
ANISOU	1297	N	ILE	A	185	2464	2162	1717	326	-463	-226	A	N
SIGUIJ	1297	N	ILE	A	185	1	0	0	221	59	289	A	N
ATOM	1298	CA	ILE	A	185	6.104	13.888	18.467	1.00	17.76		A	C
ANISOU	1298	CA	ILE	A	185	2356	1838	1699	2	-403	4	A	C
SIGUIJ	1298	CA	ILE	A	185	1	0	0	220	79	290	A	C
ATOM	1299	CB	ILE	A	185	4.737	14.077	19.163	1.00	18.05		A	C
ANISOU	1299	CB	ILE	A	185	2558	1913	2521	8	4	0	A	C
SIGUIJ	1299	CB	ILE	A	185	1	0	0	220	79	290	A	C
ATOM	1300	CG2	ILE	A	185	3.671	14.450	18.160	1.00	18.41		A	C
ANISOU	1300	CG2	ILE	A	185	2592	2147	2532	91	-4	-3	A	C
SIGUIJ	1300	CG2	ILE	A	185	1	0	0	220	79	290	A	C
ATOM	1301	CG1	ILE	A	185	4.303	12.782	19.873	1.00	18.24		A	C
ANISOU	1301	CG1	ILE	A	185	2702	1937	2551	-42	10	-1	A	C
SIGUIJ	1301	CG1	ILE	A	185	1	0	0	220	79	290	A	C
ATOM	1302	CD1	ILE	A	185	3.986	11.644	18.904	1.00	18.38		A	C
ANISOU	1302	CD1	ILE	A	185	2395	1924	2566	48	6	-1	A	C
SIGUIJ	1302	CD1	ILE	A	185	1	0	0	220	79	290	A	C
ATOM	1303	C	ILE	A	185	6.528	15.183	17.749	1.00	18.58		A	C
ANISOU	1303	C	ILE	A	185	2666	1856	1746	-36	-310	13	A	C
SIGUIJ	1303	C	ILE	A	185	1	0	0	220	79	290	A	C
ATOM	1304	O	ILE	A	185	6.793	16.151	18.408	1.00	18.04		A	O
ANISOU	1304	O	ILE	A	185	2616	1851	1719	-26	-305	5	A	O
SIGUIJ	1304	O	ILE	A	185	1	0	0	221	53	289	A	O
ATOM	1305	N	PRO	A	186	6.597	15.196	16.397	1.00	19.42		A	N

ANISOU	1305	N	PRO A 186	3006	2554	1750	-76	-290	29	A	N
SIGUIJ	1305	N	PRO A 186	1	0	0	221	59	289	A	N
ATOM	1306	CD	PRO A 186	6.278	14.129	15.430	1.00	20.02		A	C
ANISOU	1306	CD	PRO A 186	2736	2594	1854	50	-335	-53	A	C
SIGUIJ	1306	CD	PRO A 186	1	0	0	220	79	290	A	C
ATOM	1307	CA	PRO A 186	6.974	16.437	15.725	1.00	20.07		A	C
ANISOU	1307	CA	PRO A 186	3182	2600	1801	-148	-318	58	A	C
SIGUIJ	1307	CA	PRO A 186	1	0	0	220	79	290	A	C
ATOM	1308	CB	PRO A 186	6.710	16.142	14.252	1.00	20.37		A	C
ANISOU	1308	CB	PRO A 186	3572	2807	1829	-63	-404	17	A	C
SIGUIJ	1308	CB	PRO A 186	1	0	0	220	79	290	A	C
ATOM	1309	CG	PRO A 186	6.669	14.734	14.124	1.00	20.70		A	C
ANISOU	1309	CG	PRO A 186	3533	2812	1940	-80	-155	12	A	C
SIGUIJ	1309	CG	PRO A 186	1	0	0	220	79	290	A	C
ATOM	1310	C	PRO A 186	6.142	17.609	16.194	1.00	20.31		A	C
ANISOU	1310	C	PRO A 186	3182	2629	1658	-114	-395	61	A	C
SIGUIJ	1310	C	PRO A 186	1	0	0	220	79	290	A	C
ATOM	1311	O	PRO A 186	4.904	17.527	16.318	1.00	20.36		A	O
ANISOU	1311	O	PRO A 186	3187	2274	2361	-89	-328	31	A	O
SIGUIJ	1311	O	PRO A 186	1	0	0	221	53	289	A	O
ATOM	1312	N	ASP A 186A	6.835	18.715	16.417	1.00	20.72		A	N
ANISOU	1312	N	ASP A 186A	2899	2555	1610	28	-240	-8	A	N
SIGUIJ	1312	N	ASP A 186A	1	0	0	221	59	289	A	N
ATOM	1313	CA	ASP A 186A	6.237	19.998	16.786	1.00	21.18		A	C
ANISOU	1313	CA	ASP A 186A	3476	2730	1801	334	-321	-97	A	C
SIGUIJ	1313	CA	ASP A 186A	1	0	0	220	79	290	A	C
ATOM	1314	CB	ASP A 186A	5.366	20.539	15.625	1.00	22.27		A	C
ANISOU	1314	CB	ASP A 186A	3473	2376	2017	-90	-517	40	A	C
SIGUIJ	1314	CB	ASP A 186A	1	0	0	220	79	290	A	C
ATOM	1315	CG	ASP A 186A	6.156	20.717	14.355	1.00	23.43		A	C
ANISOU	1315	CG	ASP A 186A	4196	5781	2219	-920	-183	-4	A	C
SIGUIJ	1315	CG	ASP A 186A	1	0	0	220	79	290	A	C
ATOM	1316	OD1	ASP A 186A	7.288	21.218	14.437	1.00	24.41		A	O
ANISOU	1316	OD1	ASP A 186A	3792	3691	2398	5	-194	-5	A	O
SIGUIJ	1316	OD1	ASP A 186A	1	0	0	221	53	289	A	O
ATOM	1317	OD2	ASP A 186A	5.653	20.326	13.272	1.00	24.75		A	O
ANISOU	1317	OD2	ASP A 186A	4673	6813	2176	-1755	-103	11	A	O
SIGUIJ	1317	OD2	ASP A 186A	1	0	0	221	53	289	A	O
ATOM	1318	C	ASP A 186A	5.451	19.972	18.087	1.00	20.78		A	C
ANISOU	1318	C	ASP A 186A	3914	2229	1960	518	-45	-12	A	C
SIGUIJ	1318	C	ASP A 186A	1	0	0	220	79	290	A	C
ATOM	1319	O	ASP A 186A	4.604	20.805	18.310	1.00	21.16		A	O
ANISOU	1319	O	ASP A 186A	4445	2561	3025	917	499	248	A	O
SIGUIJ	1319	O	ASP A 186A	1	0	0	221	53	289	A	O
ATOM	1320	N	SER A 186B	5.743	18.996	18.957	1.00	19.72		A	N
ANISOU	1320	N	SER A 186B	2709	2092	2003	20	-197	-6	A	N
SIGUIJ	1320	N	SER A 186B	1	0	0	221	59	289	A	N
ATOM	1321	CA	SER A 186B	5.029	18.811	20.224	1.00	19.06		A	C
ANISOU	1321	CA	SER A 186B	2776	2401	2023	-28	-167	9	A	C
SIGUIJ	1321	CA	SER A 186B	1	0	0	220	79	290	A	C
ATOM	1322	CB	SER A 186B	4.333	17.456	20.205	1.00	18.95		A	C

- 120 -

ANISOU	1322	CB	SER A 186B	2800	2411	1927	-39	-165	11	A	C
SIGUIJ	1322	CB	SER A 186B	1	0	0	220	78	290	A	C
ATOM	1323	OG	SER A 186B	3.828	17.155	21.492	1.00	18.85		A	O
ANISOU	1323	OG	SER A 186B	2384	2464	1874	7	-315	30	A	O
SIGUIJ	1323	OG	SER A 186B	1	0	0	221	53	289	A	O
ATOM	1324	C	SER A 186B	5.994	18.854	21.391	1.00	18.39		A	C
ANISOU	1324	C	SER A 186B	2588	1709	1908	5	-14	0	A	C
SIGUIJ	1324	C	SER A 186B	1	0	0	220	78	290	A	C
ATOM	1325	O	SER A 186B	7.143	18.478	21.244	1.00	18.48		A	O
ANISOU	1325	O	SER A 186B	2650	2316	1988	202	7	3	A	O
SIGUIJ	1325	O	SER A 186B	1	0	0	221	53	289	A	O
ATOM	1326	N	ALYS A 187	5.507	19.319	22.529	0.50	17.77		A	N
ANISOU	1326	N	ALYS A 187	2220	1630	1851	-45	-152	14	A	N
SIGUIJ	1326	N	ALYS A 187	1	0	0	221	59	289	A	N
ATOM	1327	N	BLYS A 187	5.484	19.331	22.525	0.50	19.96		A	N
ANISOU	1327	N	BLYS A 187	2234	1592	1840	-71	-148	20	A	N
SIGUIJ	1327	N	BLYS A 187	1	0	0	221	59	289	A	N
ATOM	1328	CA	ALYS A 187	6.284	19.355	23.760	0.50	17.28		A	C
ANISOU	1328	CA	ALYS A 187	2079	1412	1804	-41	-68	9	A	C
SIGUIJ	1328	CA	ALYS A 187	1	0	0	220	78	290	A	C
ATOM	1329	CA	BLYS A 187	6.185	19.396	23.809	0.50	19.47		A	C
ANISOU	1329	CA	BLYS A 187	2711	1446	1981	-143	-407	64	A	C
SIGUIJ	1329	CA	BLYS A 187	1	0	0	220	78	290	A	C
ATOM	1330	CB	ALYS A 187	5.712	20.431	24.683	0.50	18.41		A	C
ANISOU	1330	CB	ALYS A 187	2400	1530	1834	140	-77	-15	A	C
SIGUIJ	1330	CB	ALYS A 187	1	0	0	220	78	290	A	C
ATOM	1331	CB	BLYS A 187	5.424	20.327	24.777	0.50	20.60		A	C
ANISOU	1331	CB	BLYS A 187	3766	1779	2431	192	99	11	A	C
SIGUIJ	1331	CB	BLYS A 187	1	0	0	220	78	290	A	C
ATOM	1332	CG	ALYS A 187	5.737	21.819	24.058	0.50	19.76		A	C
ANISOU	1332	CG	ALYS A 187	3743	1555	1933	-99	-559	28	A	C
SIGUIJ	1332	CG	ALYS A 187	1	0	0	220	78	290	A	C
ATOM	1333	CG	BLYS A 187	5.329	21.812	24.398	0.50	21.95		A	C
ANISOU	1333	CG	BLYS A 187	3097	1767	2428	67	-200	-8	A	C
SIGUIJ	1333	CG	BLYS A 187	1	0	0	220	78	290	A	C
ATOM	1334	CD	ALYS A 187	5.202	22.885	25.007	0.50	21.54		A	C
ANISOU	1334	CD	ALYS A 187	6093	1801	2387	382	223	21	A	C
SIGUIJ	1334	CD	ALYS A 187	1	0	0	220	78	290	A	C
ATOM	1335	CD	BLYS A 187	4.571	22.614	25.506	0.50	23.73		A	C
ANISOU	1335	CD	BLYS A 187	5177	3591	2541	1906	-108	-75	A	C
SIGUIJ	1335	CD	BLYS A 187	1	0	0	220	78	290	A	C
ATOM	1336	CE	ALYS A 187	5.691	24.276	24.602	0.50	22.22		A	C
ANISOU	1336	CE	ALYS A 187	9106	2124	2521	-591	519	-45	A	C
SIGUIJ	1336	CE	ALYS A 187	1	0	0	220	78	290	A	C
ATOM	1337	CE	BLYS A 187	4.688	24.148	25.345	0.50	24.41		A	C
ANISOU	1337	CE	BLYS A 187	13777	3655	5721	1369	1007	152	A	C
SIGUIJ	1337	CE	BLYS A 187	1	0	0	220	78	290	A	C
ATOM	1338	NZ	ALYS A 187	5.364	25.307	25.640	0.50	23.45		A	N
ANISOU	1338	NZ	ALYS A 187	14140	2203	3005	-445	1960	-75	A	N
SIGUIJ	1338	NZ	ALYS A 187	1	0	0	221	59	289	A	N
ATOM	1339	NZ	BLYS A 187	4.207	24.944	26.534	0.50	25.64		A	N

- 121 -

ANISOU	1339	NZ	BLYS	A	187	13596	3934	5596	1778	657	131	A	N
SIGUIJ	1339	NZ	BLYS	A	187	1	0	0	221	59	289	A	N
ATOM	1340	C	ALYS	A	187	6.360	18.024	24.520	0.50	16.33		A	C
ANISOU	1340	C	ALYS	A	187	1924	1408	1780	-22	1	0	A	C
SIGUIJ	1340	C	ALYS	A	187	1	0	0	220	78	290	A	C
ATOM	1341	C	BLYS	A	187	6.353	18.034	24.512	0.50	18.52		A	C
ANISOU	1341	C	BLYS	A	187	1939	1424	1764	-37	-3	1	A	C
SIGUIJ	1341	C	BLYS	A	187	1	0	0	220	78	290	A	C
ATOM	1342	O	ALYS	A	187	7.132	17.917	25.480	0.50	16.34		A	O
ANISOU	1342	O	ALYS	A	187	1933	1749	1779	5	-3	0	A	O
SIGUIJ	1342	O	ALYS	A	187	1	0	0	221	53	289	A	O
ATOM	1343	O	BLYS	A	187	7.177	17.917	25.426	0.50	18.53		A	O
ANISOU	1343	O	BLYS	A	187	1942	1736	1762	0	-4	0	A	O
SIGUIJ	1343	O	BLYS	A	187	1	0	0	221	53	289	A	O
ATOM	1344	N	LYS	A	188	5.557	17.033	24.125	1.00	14.96		A	N
ANISOU	1344	N	LYS	A	188	1853	1363	1774	29	3	1	A	N
SIGUIJ	1344	N	LYS	A	188	1	0	0	221	59	289	A	N
ATOM	1345	CA	LYS	A	188	5.442	15.771	24.874	1.00	14.02		A	C
ANISOU	1345	CA	LYS	A	188	1589	1366	1791	10	-67	4	A	C
SIGUIJ	1345	CA	LYS	A	188	1	0	0	220	78	290	A	C
ATOM	1346	CB	LYS	A	188	4.549	14.803	24.081	1.00	14.14		A	C
ANISOU	1346	CB	LYS	A	188	1573	1402	1780	-10	-36	0	A	C
SIGUIJ	1346	CB	LYS	A	188	1	0	0	220	78	290	A	C
ATOM	1347	CG	LYS	A	188	3.093	15.262	24.107	1.00	14.83		A	C
ANISOU	1347	CG	LYS	A	188	1593	1677	1895	69	-48	19	A	C
SIGUIJ	1347	CG	LYS	A	188	1	0	0	220	78	290	A	C
ATOM	1348	CD	LYS	A	188	2.268	14.487	23.118	1.00	16.07		A	C
ANISOU	1348	CD	LYS	A	188	1835	1920	2045	-56	-162	-51	A	C
SIGUIJ	1348	CD	LYS	A	188	1	0	0	220	78	290	A	C
ATOM	1349	CE	LYS	A	188	0.771	14.891	23.168	1.00	16.84		A	C
ANISOU	1349	CE	LYS	A	188	1864	2302	2691	47	-123	10	A	C
SIGUIJ	1349	CE	LYS	A	188	1	0	0	220	78	290	A	C
ATOM	1350	NZ	LYS	A	188	0.149	14.611	24.457	1.00	18.97		A	N
ANISOU	1350	NZ	LYS	A	188	2285	2681	2766	-116	36	9	A	N
SIGUIJ	1350	NZ	LYS	A	188	1	0	0	221	59	289	A	N
ATOM	1351	C	LYS	A	188	6.825	15.159	25.109	1.00	13.21		A	C
ANISOU	1351	C	LYS	A	188	1592	1396	1314	28	3	0	A	C
SIGUIJ	1351	C	LYS	A	188	1	0	0	220	77	290	A	C
ATOM	1352	O	LYS	A	188	7.611	14.950	24.182	1.00	12.89		A	O
ANISOU	1352	O	LYS	A	188	1598	1827	1295	135	-25	-1	A	O
SIGUIJ	1352	O	LYS	A	188	1	0	0	221	53	289	A	O
ATOM	1353	N	ASN	A	189	7.106	14.821	26.360	1.00	12.05		A	N
ANISOU	1353	N	ASN	A	189	1493	1287	1305	-33	15	-2	A	N
SIGUIJ	1353	N	ASN	A	189	1	0	0	221	59	289	A	N
ATOM	1354	CA	ASN	A	189	8.442	14.336	26.726	1.00	11.64		A	C
ANISOU	1354	CA	ASN	A	189	1506	1290	1360	-27	-13	2	A	C
SIGUIJ	1354	CA	ASN	A	189	1	0	0	220	77	290	A	C
ATOM	1355	CB	ASN	A	189	9.451	15.474	26.529	1.00	11.73		A	C
ANISOU	1355	CB	ASN	A	189	1504	1272	1391	-11	-9	1	A	C
SIGUIJ	1355	CB	ASN	A	189	1	0	0	220	77	290	A	C
ATOM	1356	CG	ASN	A	189	10.808	15.004	26.122	1.00	12.45		A	C

- 122 -

ANISOU	1356	CG	ASN	A	189	1520	1412	1302	30	-41	-8	A	C
SIGUIJ	1356	CG	ASN	A	189	1	0	0	220	77	290	A	C
ATOM	1357	OD1	ASN	A	189	11.230	13.842	26.358	1.00	11.93		A	O
ANISOU	1357	OD1	ASN	A	189	1572	1450	1292	100	121	51	A	O
SIGUIJ	1357	OD1	ASN	A	189	1	0	0	221	53	289	A	O
ATOM	1358	ND2	ASN	A	189	11.548	15.934	25.501	1.00	13.28		A	N
ANISOU	1358	ND2	ASN	A	189	1956	1491	1618	-105	270	-58	A	N
SIGUIJ	1358	ND2	ASN	A	189	1	0	0	221	59	289	A	N
ATOM	1359	C	ASN	A	189	8.442	13.848	28.184	1.00	11.46		A	C
ANISOU	1359	C	ASN	A	189	1489	1279	1365	57	8	3	A	C
SIGUIJ	1359	C	ASN	A	189	1	0	0	220	77	290	A	C
ATOM	1360	O	ASN	A	189	7.460	14.017	28.885	1.00	11.18		A	O
ANISOU	1360	O	ASN	A	189	1475	1295	1383	83	3	2	A	O
SIGUIJ	1360	O	ASN	A	189	1	0	0	221	53	289	A	O
ATOM	1361	N	ALA	A	190	9.588	13.320	28.631	1.00	11.38		A	N
ANISOU	1361	N	ALA	A	190	1480	1239	1397	41	-4	-1	A	N
SIGUIJ	1361	N	ALA	A	190	1	0	0	221	59	289	A	N
ATOM	1362	CA	ALA	A	190	9.839	13.028	30.026	1.00	11.34		A	C
ANISOU	1362	CA	ALA	A	190	1428	1218	1403	114	4	6	A	C
SIGUIJ	1362	CA	ALA	A	190	1	0	0	220	77	290	A	C
ATOM	1363	CB	ALA	A	190	10.695	11.762	30.129	1.00	11.42		A	C
ANISOU	1363	CB	ALA	A	190	1576	1290	1506	220	6	7	A	C
SIGUIJ	1363	CB	ALA	A	190	1	0	0	220	77	290	A	C
ATOM	1364	C	ALA	A	190	10.590	14.233	30.624	1.00	11.69		A	C
ANISOU	1364	C	ALA	A	190	1447	1216	1552	114	-8	4	A	C
SIGUIJ	1364	C	ALA	A	190	1	0	0	220	77	290	A	C
ATOM	1365	O	ALA	A	190	11.000	15.193	29.874	1.00	12.39		A	O
ANISOU	1365	O	ALA	A	190	1837	1276	1616	5	44	2	A	O
SIGUIJ	1365	O	ALA	A	190	1	0	0	221	53	289	A	O
ATOM	1366	N	CYS	A	191	10.750	14.233	31.946	1.00	11.81		A	N
ANISOU	1366	N	CYS	A	191	1490	1103	1564	9	2	0	A	N
SIGUIJ	1366	N	CYS	A	191	1	0	0	221	59	289	A	N
ATOM	1367	CA	CYS	A	191	11.495	15.320	32.611	1.00	11.91		A	C
ANISOU	1367	CA	CYS	A	191	1544	1111	1703	-2	-39	-5	A	C
SIGUIJ	1367	CA	CYS	A	191	1	0	0	220	77	290	A	C
ATOM	1368	C	CYS	A	191	12.036	14.793	33.944	1.00	11.80		A	C
ANISOU	1368	C	CYS	A	191	1214	1167	1666	0	100	4	A	C
SIGUIJ	1368	C	CYS	A	191	1	0	0	220	77	290	A	C
ATOM	1369	O	CYS	A	191	12.040	13.570	34.192	1.00	11.71		A	O
ANISOU	1369	O	CYS	A	191	1357	1171	1607	-38	-73	0	A	O
SIGUIJ	1369	O	CYS	A	191	1	0	0	221	53	289	A	O
ATOM	1370	CB	CYS	A	191	10.575	16.562	32.752	1.00	12.54		A	C
ANISOU	1370	CB	CYS	A	191	1730	1191	2157	120	41	-2	A	C
SIGUIJ	1370	CB	CYS	A	191	1	0	0	220	77	290	A	C
ATOM	1371	SG	CYS	A	191	11.386	18.128	33.252	1.00	13.85		A	S
ANISOU	1371	SG	CYS	A	191	1970	1270	1902	-56	194	24	A	S
SIGUIJ	1371	SG	CYS	A	191	1	0	0	221	48	289	A	S
ATOM	1372	N	AASN	A	192	12.570	15.687	34.798	0.50	11.82		A	N
ANISOU	1372	N	AASN	A	192	1408	1193	1734	-56	26	-1	A	N
SIGUIJ	1372	N	AASN	A	192	1	0	0	221	59	289	A	N
ATOM	1373	N	BASN	A	192	12.568	15.696	34.795	0.50	14.01		A	N

- 123 -

ANISOU	1373	N	BASN	A	192	1391	1189	1728	-42	28	-1	A	N
SIGUIJ	1373	N	BASN	A	192	1	0	0	221	59	289	A	N
ATOM	1374	CA	AASN	A	192	13.201	15.266	36.067	0.50	12.62		A	C
ANISOU	1374	CA	AASN	A	192	1420	1257	1736	20	48	5	A	C
SIGUIJ	1374	CA	AASN	A	192	1	0	0	220	77	290	A	C
ATOM	1375	CA	BASN	A	192	13.225	15.299	36.063	0.50	14.81		A	C
ANISOU	1375	CA	BASN	A	192	1374	1279	1725	12	59	5	A	C
SIGUIJ	1375	CA	BASN	A	192	1	0	0	220	77	290	A	C
ATOM	1376	CB	AASN	A	192	13.672	16.443	36.931	0.50	15.37		A	C
ANISOU	1376	CB	AASN	A	192	2253	1352	1788	-236	-36	13	A	C
SIGUIJ	1376	CB	AASN	A	192	1	0	0	220	77	290	A	C
ATOM	1377	CB	BASN	A	192	13.644	16.494	36.969	0.50	17.56		A	C
ANISOU	1377	CB	BASN	A	192	6809	1617	1888	-1290	-736	178	A	C
SIGUIJ	1377	CB	BASN	A	192	1	0	0	220	77	290	A	C
ATOM	1378	CG	AASN	A	192	14.769	17.215	36.280	0.50	17.74		A	C
ANISOU	1378	CG	AASN	A	192	2339	1369	1933	-271	65	-28	A	C
SIGUIJ	1378	CG	AASN	A	192	1	0	0	220	77	290	A	C
ATOM	1379	CG	BASN	A	192	13.934	17.777	36.193	0.50	19.93		A	C
ANISOU	1379	CG	BASN	A	192	3989	1283	1874	-239	-50	5	A	C
SIGUIJ	1379	CG	BASN	A	192	1	0	0	220	77	290	A	C
ATOM	1380	OD1AASN	A	192		14.522	18.106	35.442	0.50	19.81		A	O
ANISOU	1380	OD1AASN	A	192		3003	1423	2051	-256	-107	24	A	O
SIGUIJ	1380	OD1AASN	A	192		1	0	0	221	53	289	A	O
ATOM	1381	OD1BASN	A	192		15.078	18.232	36.121	0.50	22.00		A	O
ANISOU	1381	OD1BASN	A	192		4514	4570	2567	-1549	5	-5	A	O
SIGUIJ	1381	OD1BASN	A	192		1	0	0	221	53	289	A	O
ATOM	1382	ND2AASN	A	192		16.007	16.879	36.631	0.50	19.13		A	N
ANISOU	1382	ND2AASN	A	192		2368	1614	2078	-206	19	-9	A	N
SIGUIJ	1382	ND2AASN	A	192		1	0	0	221	59	289	A	N
ATOM	1383	ND2BASN	A	192		12.905	18.355	35.601	0.50	21.32		A	N
ANISOU	1383	ND2BASN	A	192		4270	1309	2842	-265	-567	76	A	N
SIGUIJ	1383	ND2BASN	A	192		1	0	0	221	59	289	A	N
ATOM	1384	C	AASN	A	192	12.264	14.462	36.903	0.50	11.77		A	C
ANISOU	1384	C	AASN	A	192	1267	1262	1531	-1	-132	-5	A	C
SIGUIJ	1384	C	AASN	A	192	1	0	0	220	77	290	A	C
ATOM	1385	C	BASN	A	192	12.277	14.470	36.887	0.50	13.96		A	C
ANISOU	1385	C	BASN	A	192	1223	1263	1484	-7	-135	-8	A	C
SIGUIJ	1385	C	BASN	A	192	1	0	0	220	77	290	A	C
ATOM	1386	O	AASN	A	192	11.125	14.863	37.169	0.50	12.07		A	O
ANISOU	1386	O	AASN	A	192	1291	1266	1846	0	-49	0	A	O
SIGUIJ	1386	O	AASN	A	192	1	0	0	221	53	289	A	O
ATOM	1387	O	BASN	A	192	11.130	14.866	37.118	0.50	14.26		A	O
ANISOU	1387	O	BASN	A	192	1248	1266	1997	1	-23	1	A	O
SIGUIJ	1387	O	BASN	A	192	1	0	0	221	53	289	A	O
ATOM	1388	N	GLY	A	193	12.808	13.370	37.406	1.00	10.39		A	N
ANISOU	1388	N	GLY	A	193	1144	1264	1345	17	6	-1	A	N
SIGUIJ	1388	N	GLY	A	193	1	0	0	221	59	289	A	N
ATOM	1389	CA	GLY	A	193	12.005	12.434	38.185	1.00	10.12		A	C
ANISOU	1389	CA	GLY	A	193	1149	1288	1295	-17	-30	-4	A	C
SIGUIJ	1389	CA	GLY	A	193	1	0	0	220	77	290	A	C
ATOM	1390	C	GLY	A	193	11.536	11.260	37.368	1.00	9.29		A	C

- 124 -

ANISOU	1390	C	GLY A 193	966	1257	1264	63	-38	8	A	C
SIGUIJ	1390	C	GLY A 193	1	0	0	220	76	290	A	C
ATOM	1391	O	GLY A 193	11.109	10.228	37.949	1.00	10.02		A	O
ANISOU	1391	O	GLY A 193	1252	1299	1302	-7	1	0	A	O
SIGUIJ	1391	O	GLY A 193	1	0	0	221	53	289	A	O
ATOM	1392	N	ASP A 194	11.609	11.355	36.050	1.00	8.82		A	N
ANISOU	1392	N	ASP A 194	1051	990	1255	2	-37	-1	A	N
SIGUIJ	1392	N	ASP A 194	1	0	0	221	59	289	A	N
ATOM	1393	CA	ASP A 194	11.158	10.267	35.167	1.00	9.00		A	C
ANISOU	1393	CA	ASP A 194	1094	992	1236	-24	-6	0	A	C
SIGUIJ	1393	CA	ASP A 194	1	0	0	220	76	290	A	C
ATOM	1394	CB	ASF A 194	10.554	10.842	33.894	1.00	9.29		A	C
ANISOU	1394	CB	ASF A 194	1159	1027	1245	22	-6	0	A	C
SIGUIJ	1394	CB	ASF A 194	1	0	0	220	76	290	A	C
ATOM	1395	CG	ASP A 194	9.250	11.547	34.130	1.00	9.46		A	C
ANISOU	1395	CG	ASP A 194	1171	1042	1269	12	-1	0	A	C
SIGUIJ	1395	CG	ASP A 194	1	0	0	220	76	290	A	C
ATOM	1396	OD1	ASP A 194	8.417	11.087	34.969	1.00	9.59		A	O
ANISOU	1396	OD1	ASP A 194	1226	1150	1278	-16	4	0	A	O
SIGUIJ	1396	OD1	ASP A 194	1	0	0	221	53	289	A	O
ATOM	1397	OD2	ASP A 194	8.990	12.566	33.432	1.00	10.06		A	O
ANISOU	1397	OD2	ASP A 194	1204	1058	1309	52	-5	1	A	O
SIGUIJ	1397	OD2	ASP A 194	1	0	0	221	53	289	A	O
ATOM	1398	C	ASP A 194	12.265	9.291	34.827	1.00	8.95		A	C
ANISOU	1398	C	ASP A 194	1115	1025	1181	2	0	0	A	C
SIGUIJ	1398	C	ASP A 194	1	0	0	220	76	290	A	C
ATOM	1399	O	ASP A 194	11.930	8.200	34.314	1.00	9.47		A	O
ANISOU	1399	O	ASP A 194	1291	1042	1204	-33	-10	2	A	O
SIGUIJ	1399	O	ASP A 194	1	0	0	221	52	289	A	O
ATOM	1400	N	SER A 195	13.524	9.644	35.045	1.00	8.61		A	N
ANISOU	1400	N	SER A 195	1112	1039	1117	1	0	0	A	N
SIGUIJ	1400	N	SER A 195	1	0	0	221	59	289	A	N
ATOM	1401	CA	SER A 195	14.636	8.728	34.715	1.00	9.06		A	C
ANISOU	1401	CA	SER A 195	1108	1034	1200	-7	15	0	A	C
SIGUIJ	1401	CA	SER A 195	1	0	0	220	76	290	A	C
ATOM	1402	CB	SER A 195	15.932	9.226	35.339	1.00	9.26		A	C
ANISOU	1402	CB	SER A 195	1129	1029	1310	-11	-23	1	A	C
SIGUIJ	1402	CB	SER A 195	1	0	0	220	76	290	A	C
ATOM	1403	OG	SER A 195	16.952	8.239	35.258	1.00	10.77		A	O
ANISOU	1403	OG	SER A 195	1251	1131	1836	94	34	5	A	O
SIGUIJ	1403	OG	SER A 195	1	0	0	221	52	289	A	O
ATOM	1404	C	SER A 195	14.390	7.331	35.236	1.00	8.79		A	C
ANISOU	1404	C	SER A 195	1093	1037	1135	5	-1	0	A	C
SIGUIJ	1404	C	SER A 195	1	0	0	220	76	290	A	C
ATOM	1405	O	SER A 195	13.928	7.140	36.359	1.00	8.77		A	O
ANISOU	1405	O	SER A 195	1141	1165	1125	0	0	0	A	O
SIGUIJ	1405	O	SER A 195	1	0	0	221	52	289	A	O
ATOM	1406	N	GLY A 196	14.731	6.344	34.397	1.00	8.96		A	N
ANISOU	1406	N	GLY A 196	1083	1037	1172	8	3	0	A	N
SIGUIJ	1406	N	GLY A 196	1	0	0	221	59	289	A	N
ATOM	1407	CA	GLY A 196	14.603	4.955	34.824	1.00	9.79		A	C

- 125 -

ANISOU	1407	CA	GLY	A	196	1346	1045	1251	-26	5	-1	A	C
SIGUIJ	1407	CA	GLY	A	196	1	0	0	220	76	290	A	C
ATOM	1408	C	GLY	A	196	13.268	4.335	34.559	1.00	10.15		A	C
ANISOU	1408	C	GLY	A	196	1357	1133	1279	-59	3	-2	A	C
SIGUIJ	1408	C	GLY	A	196	1	0	0	220	76	290	A	C
ATOM	1409	O	GLY	A	196	13.122	3.077	34.625	1.00	11.37		A	O
ANISOU	1409	O	GLY	A	196	1574	1138	1455	-86	12	-5	A	O
SIGUIJ	1409	O	GLY	A	196	1	0	0	221	52	289	A	O
ATOM	1410	N	GLY	A	197	12.270	5.174	34.293	1.00	10.34		A	N
ANISOU	1410	N	GLY	A	197	1390	1225	1252	3	0	0	A	N
SIGUIJ	1410	N	GLY	A	197	1	0	0	221	59	289	A	N
ATOM	1411	CA	GLY	A	197	10.950	4.639	34.022	1.00	10.70		A	C
ANISOU	1411	CA	GLY	A	197	1399	1258	1271	-14	-5	1	A	C
SIGUIJ	1411	CA	GLY	A	197	1	0	0	220	76	290	A	C
ATOM	1412	C	GLY	A	197	10.775	4.179	32.572	1.00	10.49		A	C
ANISOU	1412	C	GLY	A	197	1284	1160	1264	32	0	0	A	C
SIGUIJ	1412	C	GLY	A	197	1	0	0	220	76	290	A	C
ATOM	1413	O	GLY	A	197	11.628	4.364	31.687	1.00	10.72		A	O
ANISOU	1413	O	GLY	A	197	1301	1386	1252	-6	3	0	A	O
SIGUIJ	1413	O	GLY	A	197	1	0	0	221	52	289	A	O
ATOM	1414	N	PRO	A	198	9.659	3.487	32.333	1.00	10.32		A	N
ANISOU	1414	N	PRO	A	198	1299	1211	1147	-4	22	-1	A	N
SIGUIJ	1414	N	PRO	A	198	1	0	0	221	59	289	A	N
ATOM	1415	CD	PRO	A	198	8.577	3.242	33.332	1.00	10.54		A	C
ANISOU	1415	CD	PRO	A	198	1332	1247	1182	2	56	1	A	C
SIGUIJ	1415	CD	PRO	A	198	1	0	0	220	76	290	A	C
ATOM	1416	CA	PRO	A	198	9.493	2.681	31.115	1.00	10.29		A	C
ANISOU	1416	CA	PRO	A	198	1438	1205	1158	36	-19	-3	A	C
SIGUIJ	1416	CA	PRO	A	198	1	0	0	220	76	290	A	C
ATOM	1417	CB	PRO	A	198	8.462	1.655	31.568	1.00	10.41		A	C
ANISOU	1417	CB	PRO	A	198	1537	1278	1330	-35	48	-7	A	C
SIGUIJ	1417	CB	PRO	A	198	1	0	0	220	76	290	A	C
ATOM	1418	CG	PRO	A	198	7.644	2.375	32.586	1.00	11.03		A	C
ANISOU	1418	CG	PRO	A	198	1439	1279	1276	-34	-28	6	A	C
SIGUIJ	1418	CG	PRO	A	198	1	0	0	220	76	290	A	C
ATOM	1419	C	PRO	A	198	8.957	3.456	29.895	1.00	10.64		A	C
ANISOU	1419	C	PRO	A	198	1350	1170	1163	-39	-14	3	A	C
SIGUIJ	1419	C	PRO	A	198	1	0	0	220	76	290	A	C
ATOM	1420	O	PRO	A	198	8.036	4.276	30.000	1.00	11.03		A	O
ANISOU	1420	O	PRO	A	198	1485	1332	1335	93	-2	-1	A	O
SIGUIJ	1420	O	PRO	A	198	1	0	0	221	52	289	A	O
ATOM	1421	N	LEU	A	199	9.511	3.089	28.732	1.00	10.69		A	N
ANISOU	1421	N	LEU	A	199	1373	1162	1185	-100	27	-12	A	N
SIGUIJ	1421	N	LEU	A	199	1	0	0	221	59	289	A	N
ATOM	1422	CA	LEU	A	199	8.960	3.416	27.418	1.00	10.99		A	C
ANISOU	1422	CA	LEU	A	199	1462	1258	1196	-28	12	-1	A	C
SIGUIJ	1422	CA	LEU	A	199	1	0	0	220	76	290	A	C
ATOM	1423	CB	LEU	A	199	10.064	4.001	26.536	1.00	11.16		A	C
ANISOU	1423	CB	LEU	A	199	1531	1357	1204	-105	38	-15	A	C
SIGUIJ	1423	CB	LEU	A	199	1	0	0	220	76	290	A	C
ATOM	1424	CG	LEU	A	199	9.679	4.334	25.092	1.00	11.53		A	C

ANISOU	1424	CG	LEU	A	199	1678	1387	1215	-188	-4	2	A	C
SIGUIJ	1424	CG	LEU	A	199	1	0	0	220	76	290	A	C
ATOM	1425	CD1	LEU	A	199	8.681	5.517	25.023	1.00	12.70		A	C
ANISOU	1425	CD1	LEU	A	199	1922	1558	2204	14	-71	6	A	C
SIGUIJ	1425	CD1	LEU	A	199	1	0	0	220	76	290	A	C
ATOM	1426	CD2	LEU	A	199	10.953	4.704	24.328	1.00	12.64		A	C
ANISOU	1426	CD2	LEU	A	199	1876	3221	1286	-740	46	-32	A	C
SIGUIJ	1426	CD2	LEU	A	199	1	0	0	220	75	290	A	C
ATOM	1427	C	LEU	A	199	8.489	2.055	26.870	1.00	11.49		A	C
ANISOU	1427	C	LEU	A	199	1340	1248	1270	14	8	1	A	C
SIGUIJ	1427	C	LEU	A	199	1	0	0	220	75	290	A	C
ATOM	1428	O	LEU	A	199	9.287	1.147	26.665	1.00	11.40		A	O
ANISOU	1428	O	LEU	A	199	1339	1245	1380	3	-3	0	A	O
SIGUIJ	1428	O	LEU	A	199	1	0	0	221	52	289	A	O
ATOM	1429	N	AVAL	A	200	7.185	1.905	26.707	0.50	11.93		A	N
ANISOU	1429	N	AVAL	A	200	1338	1137	1409	16	-1	0	A	N
SIGUIJ	1429	N	AVAL	A	200	1	0	0	221	59	289	A	N
ATOM	1430	N	BVAL	A	200	7.186	1.915	26.680	0.50	14.12		A	N
ANISOU	1430	N	BVAL	A	200	1344	1287	1383	6	0	0	A	N
SIGUIJ	1430	N	BVAL	A	200	1	0	0	221	59	289	A	N
ATOM	1431	CA	AVAL	A	200	6.624	0.630	26.281	0.50	13.23		A	C
ANISOU	1431	CA	AVAL	A	200	1574	1180	1391	-88	-36	12	A	C
SIGUIJ	1431	CA	AVAL	A	200	1	0	0	220	75	290	A	C
ATOM	1432	CA	BVAL	A	200	6.581	0.639	26.300	0.50	15.42		A	C
ANISOU	1432	CA	BVAL	A	200	1642	1338	1400	-117	-56	23	A	C
SIGUIJ	1432	CA	BVAL	A	200	1	0	0	220	75	290	A	C
ATOM	1433	CB	AVAL	A	200	5.606	0.099	27.295	0.50	13.34		A	C
ANISOU	1433	CB	AVAL	A	200	1672	1757	1391	-334	-62	70	A	C
SIGUIJ	1433	CB	AVAL	A	200	1	0	0	220	75	290	A	C
ATOM	1434	CB	BVAL	A	200	5.488	0.249	27.312	0.50	15.53		A	C
ANISOU	1434	CB	BVAL	A	200	1838	1626	1527	-304	82	-66	A	C
SIGUIJ	1434	CB	BVAL	A	200	1	0	0	220	75	290	A	C
ATOM	1435	CG1AVAL	A	200		6.292	-0.162	28.632	0.50	13.55		A	C
ANISOU	1435	CG1AVAL	A	200		1665	2286	1342	11	5	0	A	C
SIGUIJ	1435	CG1AVAL	A	200		1	0	0	220	75	290	A	C
ATOM	1436	CG1BVAL	A	200		4.723	-1.017	26.843	0.50	15.74		A	C
ANISOU	1436	CG1BVAL	A	200		1410	1412	1576	0	-6	0	A	C
SIGUIJ	1436	CG1BVAL	A	200		1	0	0	220	75	290	A	C
ATOM	1437	CG2AVAL	A	200		4.463	1.047	27.461	0.50	14.98		A	C
ANISOU	1437	CG2AVAL	A	200		1941	2131	2307	-33	27	3	A	C
SIGUIJ	1437	CG2AVAL	A	200		1	0	0	220	75	290	A	C
ATOM	1438	CG2BVAL	A	200		6.135	-0.022	28.679	0.50	17.17		A	C
ANISOU	1438	CG2BVAL	A	200		2144	2640	1587	-35	-16	0	A	C
SIGUIJ	1438	CG2BVAL	A	200		1	0	0	220	75	290	A	C
ATOM	1439	C	AVAL	A	200	5.981	0.752	24.908	0.50	14.07		A	C
ANISOU	1439	C	AVAL	A	200	1498	1485	1367	0	3	0	A	C
SIGUIJ	1439	C	AVAL	A	200	1	0	0	220	75	290	A	C
ATOM	1440	C	BVAL	A	200	5.987	0.762	24.897	0.50	16.26		A	C
ANISOU	1440	C	BVAL	A	200	1490	1495	1371	0	0	0	A	C
SIGUIJ	1440	C	BVAL	A	200	1	0	0	220	75	290	A	C
ATOM	1441	O	AVAL	A	200	5.305	1.741	24.594	0.50	13.73		A	O

- 127 -

ANISOU	1441	O	AVAL	A	200	1646	1522	1422	72	-118	-42	A	O
SIGUIJ	1441	O	AVAL	A	200	1	0	0	221	52	289	A	O
ATOM	1442	O	BVAL	A	200	5.352	1.768	24.551	0.50	15.92		A	O
ANISOU	1442	O	BVAL	A	200	2287	1656	1640	355	-485	-204	A	O
SIGUIJ	1442	O	BVAL	A	200	1	0	0	221	52	289	A	O
ATOM	1443	N	CYS	A	201	6.224	-0.256	24.071	0.50	15.72		A	N
ANISOU	1443	N	CYS	A	201	1271	1472	1352	-39	-2	-1	A	N
SIGUIJ	1443	N	CYS	A	201	1	0	0	221	59	289	A	N
ATOM	1444	CA	CYS	A	201	5.658	-0.276	22.719	1.00	17.44		A	C
ANISOU	1444	CA	CYS	A	201	2518	2148	1573	12	-528	-6	A	C
SIGUIJ	1444	CA	CYS	A	201	1	0	0	220	75	290	A	C
ATOM	1445	C	CYS	A	201	5.110	-1.671	22.498	1.00	18.94		A	C
ANISOU	1445	C	CYS	A	201	2602	2150	2126	10	-638	-32	A	C
SIGUIJ	1445	C	CYS	A	201	1	0	0	220	75	290	A	C
ATOM	1446	O	CYS	A	201	5.813	-2.658	22.695	1.00	19.18		A	O
ANISOU	1446	O	CYS	A	201	4095	2583	2869	839	-1856	-746	A	O
SIGUIJ	1446	O	CYS	A	201	1	0	0	221	52	289	A	O
ATOM	1447	CB	CYS	A	201	6.748	-0.005	21.674	1.00	17.59		A	C
ANISOU	1447	CB	CYS	A	201	3256	3970	2261	-353	139	22	A	C
SIGUIJ	1447	CB	CYS	A	201	1	0	0	220	75	290	A	C
ATOM	1448	SG	CYS	A	201	7.974	1.255	22.085	1.00	17.50		A	S
ANISOU	1448	SG	CYS	A	201	2224	2944	1746	673	162	133	A	S
SIGUIJ	1448	SG	CYS	A	201	1	0	0	221	48	289	A	S
ATOM	1449	N	ARG	A	202	3.867	-1.771	22.056	1.00	20.47		A	N
ANISOU	1449	N	ARG	A	202	2697	3430	2998	-9	-918	-237	A	N
SIGUIJ	1449	N	ARG	A	202	1	0	0	221	59	289	A	N
ATOM	1450	CA	ARG	A	202	3.429	-3.048	21.476	1.00	21.98		A	C
ANISOU	1450	CA	ARG	A	202	3505	3546	2423	-510	-422	-111	A	C
SIGUIJ	1450	CA	ARG	A	202	1	0	0	220	75	290	A	C
ATOM	1451	CB	ARG	A	202	4.356	-3.484	20.322	1.00	23.51		A	C
ANISOU	1451	CB	ARG	A	202	4708	4464	3162	-225	458	-188	A	C
SIGUIJ	1451	CB	ARG	A	202	1	0	0	220	75	290	A	C
ATOM	1452	CG	ARG	A	202	4.054	-2.872	18.967	1.00	25.72		A	C
ANISOU	1452	CG	ARG	A	202	6650	4820	3356	-316	-15	2	A	C
SIGUIJ	1452	CG	ARG	A	202	1	0	0	220	75	290	A	C
ATOM	1453	CD	ARG	A	202	4.130	-3.981	17.913	1.00	27.39		A	C
ANISOU	1453	CD	ARG	A	202	15836	5050	3417	1325	-1073	-124	A	C
SIGUIJ	1453	CD	ARG	A	202	1	0	0	220	75	290	A	C
ATOM	1454	NE	ARG	A	202	3.147	-5.039	18.198	1.00	28.89		A	N
ANISOU	1454	NE	ARG	A	202	19882	7865	11675	-1772	1472	-268	A	N
SIGUIJ	1454	NE	ARG	A	202	1	0	0	221	59	289	A	N
ATOM	1455	CZ	ARG	A	202	3.241	-6.309	17.802	1.00	29.52		A	C
ANISOU	1455	CZ	ARG	A	202	13635	7753	10102	-1680	-267	98	A	C
SIGUIJ	1455	CZ	ARG	A	202	1	0	0	220	75	290	A	C
ATOM	1456	NH1	ARG	A	202	4.279	-6.722	17.087	1.00	30.11		A	N
ANISOU	1456	NH1	ARG	A	202	14569	12497	10591	146	30	2	A	N
SIGUIJ	1456	NH1	ARG	A	202	1	0	0	221	59	289	A	N
ATOM	1457	NH2	ARG	A	202	2.286	-7.177	18.134	1.00	30.19		A	N
ANISOU	1457	NH2	ARG	A	202	14220	8203	10911	-2155	176	-83	A	N
SIGUIJ	1457	NH2	ARG	A	202	1	0	0	221	59	289	A	N
ATOM	1458	C	ARG	A	202	3.527	-4.078	22.596	1.00	21.91		A	C

ANISOU	1458	C	ARG	A	202	3709	3701	2523	-1	22	-1	A	C
SIGUIJ	1458	C	ARG	A	202	1	0	0	220	75	290	A	C
ATOM	1459	O	ARG	A	202	3.882	-5.252	22.360	1.00	22.61		A	O
ANISOU	1459	O	ARG	A	202	4400	3923	2787	459	-1263	-433	A	O
SIGUIJ	1459	O	ARG	A	202	1	0	0	221	52	289	A	O
ATOM	1460	N	GLY	A	207	3.247	-3.629	23.816	1.00	21.43		A	N
ANISOU	1460	N	GLY	A	207	2943	3658	2516	-77	-115	-13	A	N
SIGUIJ	1460	N	GLY	A	207	1	0	0	221	59	289	A	N
ATOM	1461	CA	GLY	A	207	3.230	-4.550	24.940	1.00	20.55		A	C
ANISOU	1461	CA	GLY	A	207	2370	3677	2563	54	-17	4	A	C
SIGUIJ	1461	CA	GLY	A	207	1	0	0	220	75	290	A	C
ATOM	1462	C	GLY	A	207	4.528	-4.917	25.648	1.00	19.61		A	C
ANISOU	1462	C	GLY	A	207	2269	2796	2561	-214	25	13	A	C
SIGUIJ	1462	C	GLY	A	207	1	0	0	220	74	290	A	C
ATOM	1463	O	GLY	A	207	4.524	-5.662	26.630	1.00	20.31		A	O
ANISOU	1463	O	GLY	A	207	3111	2799	2580	-291	-10	6	A	O
SIGUIJ	1463	O	GLY	A	207	1	0	0	221	52	289	A	O
ATOM	1464	N	THR	A	208	5.648	-4.397	25.155	1.00	18.38		A	N
ANISOU	1464	N	THR	A	208	2147	2379	2325	-38	-69	-12	A	N
SIGUIJ	1464	N	THR	A	208	1	0	0	221	59	289	A	N
ATOM	1465	CA	THR	A	208	6.940	-4.764	25.704	1.00	17.05		A	C
ANISOU	1465	CA	THR	A	208	2120	1671	2223	-212	-84	-107	A	C
SIGUIJ	1465	CA	THR	A	208	1	0	0	220	74	290	A	C
ATOM	1466	CB	THR	A	208	7.852	-5.662	24.730	1.00	17.59		A	C
ANISOU	1466	CB	THR	A	208	2326	1668	2241	-148	21	-19	A	C
SIGUIJ	1466	CB	THR	A	208	1	0	0	220	74	290	A	C
ATOM	1467	OG1	THR	A	208	8.404	-4.889	23.624	1.00	18.78		A	O
ANISOU	1467	OG1	THR	A	208	2979	2205	2256	-732	-64	49	A	O
SIGUIJ	1467	OG1	THR	A	208	1	0	0	221	52	289	A	O
ATOM	1468	CG2	THR	A	208	7.041	-6.852	24.228	1.00	18.33		A	C
ANISOU	1468	CG2	THR	A	208	3837	2352	2244	-1168	-3	2	A	C
SIGUIJ	1468	CG2	THR	A	208	1	0	0	220	74	290	A	C
ATOM	1469	C	THR	A	208	7.712	-3.509	26.076	1.00	15.64		A	C
ANISOU	1469	C	THR	A	208	1738	1537	1589	-31	37	-6	A	C
SIGUIJ	1469	C	THR	A	208	1	0	0	220	74	290	A	C
ATOM	1470	O	THR	A	208	7.567	-2.413	25.438	1.00	15.24		A	O
ANISOU	1470	O	THR	A	208	1892	1544	1644	-30	-22	2	A	O
SIGUIJ	1470	O	THR	A	208	1	0	0	221	52	289	A	O
ATOM	1471	N	LEU	A	209	8.579	-3.704	27.046	1.00	14.47		A	N
ANISOU	1471	N	LEU	A	209	1766	1283	1616	-84	-5	2	A	N
SIGUIJ	1471	N	LEU	A	209	1	0	0	221	59	289	A	N
ATOM	1472	CA	LEU	A	209	9.498	-2.670	27.440	1.00	13.39		A	C
ANISOU	1472	CA	LEU	A	209	1771	1353	1409	-147	84	-29	A	C
SIGUIJ	1472	CA	LEU	A	209	1	0	0	220	74	290	A	C
ATOM	1473	CB	LEU	A	209	10.155	-3.066	28.776	1.00	13.02		A	C
ANISOU	1473	CB	LEU	A	209	1714	1258	1427	-240	60	-34	A	C
SIGUIJ	1473	CB	LEU	A	209	1	0	0	220	74	290	A	C
ATOM	1474	CG	LEU	A	209	11.113	-1.980	29.356	1.00	12.58		A	C
ANISOU	1474	CG	LEU	A	209	1662	1214	1564	-188	7	-7	A	C
SIGUIJ	1474	CG	LEU	A	209	1	0	0	220	74	290	A	C
ATOM	1475	CD1	LEU	A	209	10.365	-0.768	29.797	1.00	13.15		A	C

- 129 -

ANISOU	1475	CD1	LEU	A	209	1871	1300	1615	-55	-1	0	A	C
SIGUIJ	1475	CD1	LEU	A	209	1	0	0	220	74	290	A	C
ATOM	1476	CD2	LEU	A	209	11.874	-2.570	30.495	1.00	13.63		A	C
ANISOU	1476	CD2	LEU	A	209	1888	1584	1588	67	-12	-3	A	C
SIGUIJ	1476	CD2	LEU	A	209	1	0	0	220	74	290	A	C
ATOM	1477	C	LEU	A	209	10.546	-2.453	26.352	1.00	13.39		A	C
ANISOU	1477	C	LEU	A	209	1684	1215	1320	-96	-3	1	A	C
SIGUIJ	1477	C	LEU	A	209	1	0	0	220	74	290	A	C
ATOM	1478	O	LEU	A	209	11.313	-3.377	26.034	1.00	14.33		A	O
ANISOU	1478	O	LEU	A	209	2821	1643	2129	572	764	342	A	O
SIGUIJ	1478	O	LEU	A	209	1	0	0	221	52	289	A	O
ATOM	1479	N	GLN	A	210	10.630	-1.241	25.805	1.00	11.99		A	N
ANISOU	1479	N	GLN	A	210	1456	1205	1300	-81	-2	1	A	N
SIGUIJ	1479	N	GLN	A	210	1	0	0	221	58	289	A	N
ATOM	1480	CA	GLN	A	210	11.629	-0.966	24.792	1.00	11.62		A	C
ANISOU	1480	CA	GLN	A	210	1468	1260	1294	-94	4	-2	A	C
SIGUIJ	1480	CA	GLN	A	210	1	0	0	220	74	290	A	C
ATOM	1481	CB	GLN	A	210	10.930	-0.471	23.528	1.00	11.73		A	C
ANISOU	1481	CB	GLN	A	210	1575	1458	1287	36	2	0	A	C
SIGUIJ	1481	CB	GLN	A	210	1	0	0	220	74	290	A	C
ATOM	1482	CG	GLN	A	210	10.167	-1.576	22.767	1.00	11.87		A	C
ANISOU	1482	CG	GLN	A	210	1685	1521	1267	-58	34	-8	A	C
SIGUIJ	1482	CG	GLN	A	210	1	0	0	220	74	290	A	C
ATOM	1483	CD	GLN	A	210	11.077	-2.553	22.089	1.00	12.65		A	C
ANISOU	1483	CD	GLN	A	210	1734	1594	1166	31	-32	-4	A	C
SIGUIJ	1483	CD	GLN	A	210	1	0	0	220	74	290	A	C
ATOM	1484	OE1	GLN	A	210	12.101	-2.185	21.526	1.00	12.72		A	O
ANISOU	1484	OE1	GLN	A	210	1845	1744	1420	-28	121	-21	A	O
SIGUIJ	1484	OE1	GLN	A	210	1	0	0	221	52	289	A	O
ATOM	1485	NE2	GLN	A	210	10.699	-3.842	22.095	1.00	13.51		A	N
ANISOU	1485	NE2	GLN	A	210	2158	1625	1824	-102	6	-1	A	N
SIGUIJ	1485	NE2	GLN	A	210	1	0	0	221	58	289	A	N
ATOM	1486	C	GLN	A	210	12.663	0.084	25.228	1.00	11.48		A	C
ANISOU	1486	C	GLN	A	210	1409	1202	1310	-29	-4	1	A	C
SIGUIJ	1486	C	GLN	A	210	1	0	0	220	74	290	A	C
ATOM	1487	O	GLN	A	210	13.757	0.110	24.704	1.00	11.76		A	O
ANISOU	1487	O	GLN	A	210	1424	1533	1356	-12	16	-1	A	O
SIGUIJ	1487	O	GLN	A	210	1	0	0	221	52	289	A	O
ATOM	1488	N	GLY	A	211	12.322	0.947	26.191	1.00	11.15		A	N
ANISOU	1488	N	GLY	A	211	1398	1218	1310	-28	-8	2	A	N
SIGUIJ	1488	N	GLY	A	211	1	0	0	221	58	289	A	N
ATOM	1489	CA	GLY	A	211	13.247	1.980	26.650	1.00	11.16		A	C
ANISOU	1489	CA	GLY	A	211	1547	1392	1244	-207	55	-38	A	C
SIGUIJ	1489	CA	GLY	A	211	1	0	0	220	74	290	A	C
ATOM	1490	C	GLY	A	211	13.133	2.227	28.125	1.00	10.56		A	C
ANISOU	1490	C	GLY	A	211	1286	1259	1228	0	1	0	A	C
SIGUIJ	1490	C	GLY	A	211	1	0	0	220	74	290	A	C
ATOM	1491	O	GLY	A	211	12.113	1.957	28.779	1.00	10.95		A	O
ANISOU	1491	O	GLY	A	211	1278	1367	1229	-25	0	0	A	O
SIGUIJ	1491	O	GLY	A	211	1	0	0	221	52	289	A	O
ATOM	1492	N	LEU	A	212	14.212	2.793	28.658	1.00	10.43		A	N

- 130 -

ANISOU	1492	N	LEU	A	212	1263	1140	1161	56	13	6	A	N
SIGUIJ	1492	N	LEU	A	212	1	0	0	221	58	289	A	N
ATOM	1493	CA	LEU	A	212	14.224	3.418	29.993	1.00	10.26		A	C
ANISOU	1493	CA	LEU	A	212	1398	1146	1150	-28	42	-5	A	C
SIGUIJ	1493	CA	LEU	A	212	1	0	0	220	74	290	A	C
ATOM	1494	CB	LEU	A	212	15.269	2.772	30.919	1.00	11.19		A	C
ANISOU	1494	CB	LEU	A	212	1550	1227	1285	36	-83	-10	A	C
SIGUIJ	1494	CB	LEU	A	212	1	0	0	220	74	290	A	C
ATOM	1495	CG	LEU	A	212	15.202	1.269	31.124	1.00	11.64		A	C
ANISOU	1495	CG	LEU	A	212	2081	1226	1427	10	-103	-1	A	C
SIGUIJ	1495	CG	LEU	A	212	1	0	0	220	74	290	A	C
ATOM	1496	CD1	LEU	A	212	16.503	0.801	31.812	1.00	13.23		A	C
ANISOU	1496	CD1	LEU	A	212	2352	1816	1871	325	-396	-185	A	C
SIGUIJ	1496	CD1	LEU	A	212	1	0	0	220	74	290	A	C
ATOM	1497	CD2	LEU	A	212	13.926	0.936	31.889	1.00	12.55		A	C
ANISOU	1497	CD2	LEU	A	212	2166	1628	1566	-103	-15	3	A	C
SIGUIJ	1497	CD2	LEU	A	212	1	0	0	220	73	290	A	C
ATOM	1498	C	LEU	A	212	14.578	4.861	29.800	1.00	9.76		A	C
ANISOU	1498	C	LEU	A	212	1189	1144	1004	3	-1	0	A	C
SIGUIJ	1498	C	LEU	A	212	1	0	0	220	73	290	A	C
ATOM	1499	O	LEU	A	212	15.520	5.197	29.089	1.00	9.43		A	O
ANISOU	1499	O	LEU	A	212	1301	1173	1133	-33	127	-24	A	O
SIGUIJ	1499	O	LEU	A	212	1	0	0	221	52	289	A	O
ATOM	1500	N	VAL	A	213	13.833	5.751	30.460	1.00	9.17		A	N
ANISOU	1500	N	VAL	A	213	1209	1140	1034	-9	27	-2	A	N
SIGUIJ	1500	N	VAL	A	213	1	0	0	221	58	289	A	N
ATOM	1501	CA	VAL	A	213	14.154	7.181	30.368	1.00	9.13		A	C
ANISOU	1501	CA	VAL	A	213	1190	1139	1156	-3	-1	0	A	C
SIGUIJ	1501	CA	VAL	A	213	1	0	0	220	73	290	A	C
ATOM	1502	CB	VAL	A	213	13.218	8.032	31.250	1.00	9.23		A	C
ANISOU	1502	CB	VAL	A	213	1182	1141	1177	5	0	0	A	C
SIGUIJ	1502	CB	VAL	A	213	1	0	0	220	73	290	A	C
ATOM	1503	CG1	VAL	A	213	13.660	9.504	31.253	1.00	9.48		A	C
ANISOU	1503	CG1	VAL	A	213	1439	1156	1104	-66	-12	3	A	C
SIGUIJ	1503	CG1	VAL	A	213	1	0	0	220	73	290	A	C
ATOM	1504	CG2	VAL	A	213	11.775	7.899	30.744	1.00	9.96		A	C
ANISOU	1504	CG2	VAL	A	213	1180	1430	1270	-20	-11	-2	A	C
SIGUIJ	1504	CG2	VAL	A	213	1	0	0	220	73	290	A	C
ATOM	1505	C	VAL	A	213	15.598	7.407	30.809	1.00	9.37		A	C
ANISOU	1505	C	VAL	A	213	1197	1166	1110	0	-1	0	A	C
SIGUIJ	1505	C	VAL	A	213	1	0	0	220	73	290	A	C
ATOM	1506	O	VAL	A	213	16.034	6.908	31.853	1.00	9.26		A	O
ANISOU	1506	O	VAL	A	213	1222	1164	1104	2	5	0	A	O
SIGUIJ	1506	O	VAL	A	213	1	0	0	221	52	289	A	O
ATOM	1507	N	SER	A	214	16.365	8.179	30.025	1.00	9.91		A	N
ANISOU	1507	N	SER	A	214	1230	1174	1149	-6	6	-1	A	N
SIGUIJ	1507	N	SER	A	214	1	0	0	221	58	289	A	N
ATOM	1508	CA	SER	A	214	17.741	8.499	30.404	1.00	10.45		A	C
ANISOU	1508	CA	SER	A	214	1243	1218	1162	-3	-2	0	A	C
SIGUIJ	1508	CA	SER	A	214	1	0	0	220	73	290	A	C
ATOM	1509	CB	SER	A	214	18.721	7.915	29.375	1.00	10.69		A	C

- 131 -

ANISOU	1509	CB	SER	A	214	1287	1334	1186	12	17	-1	A	C
SIGUIJ	1509	CB	SER	A	214	1	0	0	220	73	290	A	C
ATOM	1510	OG	SER	A	214	20.052	8.252	29.751	1.00	11.37		A	O
ANISOU	1510	OG	SER	A	214	1317	1670	1351	-54	-5	-5	A	O
SIGUIJ	1510	OG	SER	A	214	1	0	0	221	52	289	A	O
ATOM	1511	C	SER	A	214	17.939	9.995	30.598	1.00	10.93		A	C
ANISOU	1511	C	SER	A	214	1507	1221	1162	-60	-4	1	A	C
SIGUIJ	1511	C	SER	A	214	1	0	0	220	73	290	A	C
ATOM	1512	O	SER	A	214	18.233	10.427	31.739	1.00	10.97		A	O
ANISOU	1512	O	SER	A	214	1600	1266	1166	-112	-10	3	A	O
SIGUIJ	1512	O	SER	A	214	1	0	0	221	52	289	A	O
ATOM	1513	N	TRP	A	215	17.818	10.827	29.547	1.00	11.11		A	N
ANISOU	1513	N	TRP	A	215	1267	1174	1161	-131	5	-5	A	N
SIGUIJ	1513	N	TRP	A	215	1	0	0	221	58	289	A	N
ATOM	1514	CA	TRP	A	215	18.158	12.208	29.728	1.00	11.48		A	C
ANISOU	1514	CA	TRP	A	215	1487	1186	1222	-193	9	-5	A	C
SIGUIJ	1514	CA	TRP	A	215	1	0	0	220	73	290	A	C
ATOM	1515	CB	TRP	A	215	19.691	12.378	29.789	1.00	12.92		A	C
ANISOU	1515	CB	TRP	A	215	1493	1681	1625	-256	6	7	A	C
SIGUIJ	1515	CB	TRP	A	215	1	0	0	220	73	290	A	C
ATOM	1516	CG	TRP	A	215	20.366	12.319	28.523	1.00	14.50		A	C
ANISOU	1516	CG	TRP	A	215	1455	2674	1619	-221	-19	-18	A	C
SIGUIJ	1516	CG	TRP	A	215	1	0	0	220	73	290	A	C
ATOM	1517	CD2	TRP	A	215	20.791	13.452	27.727	1.00	15.30		A	C
ANISOU	1517	CD2	TRP	A	215	2034	2839	1760	-470	-63	87	A	C
SIGUIJ	1517	CD2	TRP	A	215	1	0	0	220	73	290	A	C
ATOM	1518	CE2	TRP	A	215	21.384	12.931	26.581	1.00	15.68		A	C
ANISOU	1518	CE2	TRP	A	215	2230	3125	1842	-414	6	-3	A	C
SIGUIJ	1518	CE2	TRP	A	215	1	0	0	220	73	290	A	C
ATOM	1519	CE3	TRP	A	215	20.722	14.850	27.882	1.00	15.92		A	C
ANISOU	1519	CE3	TRP	A	215	2167	2842	2272	-470	14	20	A	C
SIGUIJ	1519	CE3	TRP	A	215	1	0	0	220	73	290	A	C
ATOM	1520	CD1	TRP	A	215	20.713	11.211	27.860	1.00	14.56		A	C
ANISOU	1520	CD1	TRP	A	215	1232	2691	1612	-237	-109	-47	A	C
SIGUIJ	1520	CD1	TRP	A	215	1	0	0	220	73	290	A	C
ATOM	1521	NE1	TRP	A	215	21.347	11.562	26.668	1.00	15.70		A	N
ANISOU	1521	NE1	TRP	A	215	1537	3129	1696	-395	8	9	A	N
SIGUIJ	1521	NE1	TRP	A	215	1	0	0	221	58	289	A	N
ATOM	1522	CZ2	TRP	A	215	21.912	13.757	25.564	1.00	15.96		A	C
ANISOU	1522	CZ2	TRP	A	215	1958	3076	1872	-263	-12	33	A	C
SIGUIJ	1522	CZ2	TRP	A	215	1	0	0	220	73	290	A	C
ATOM	1523	CZ3	TRP	A	215	21.252	15.664	26.885	1.00	16.39		A	C
ANISOU	1523	CZ3	TRP	A	215	2166	2821	2253	-473	2	3	A	C
SIGUIJ	1523	CZ3	TRP	A	215	1	0	0	220	73	290	A	C
ATOM	1524	CH2	TRP	A	215	21.836	15.105	25.746	1.00	16.48		A	C
ANISOU	1524	CH2	TRP	A	215	2473	3088	2274	-237	28	-19	A	C
SIGUIJ	1524	CH2	TRP	A	215	1	0	0	220	73	290	A	C
ATOM	1525	C	TRP	A	215	17.590	13.041	28.594	1.00	11.26		A	C
ANISOU	1525	C	TRP	A	215	1592	1231	1237	-148	-17	6	A	C
SIGUIJ	1525	C	TRP	A	215	1	0	0	220	73	290	A	C
ATOM	1526	O	TRP	A	215	17.105	12.544	27.569	1.00	11.36		A	O

- 132 -

ANISOU	1526	O	TRP	A	215	1550	1239	1220	-123	16	-6	A	O
SIGUIJ	1526	O	TRP	A	215	1	0	0	221	52	289	A	O
ATOM	1527	N	GLY	A	216	17.666	14.362	28.758	1.00	11.41		A	N
ANISOU	1527	N	GLY	A	216	1612	1223	1346	-140	-1	0	A	N
SIGUIJ	1527	N	GLY	A	216	1	0	0	221	58	289	A	N
ATOM	1528	CA	GLY	A	216	17.274	15.281	27.698	1.00	11.86		A	C
ANISOU	1528	CA	GLY	A	216	1773	1255	1381	-102	-43	10	A	C
SIGUIJ	1528	CA	GLY	A	216	1	0	0	220	73	290	A	C
ATOM	1529	C	GLY	A	216	17.583	16.715	28.136	1.00	12.19		A	C
ANISOU	1529	C	GLY	A	216	1700	1263	1421	-100	-22	6	A	C
SIGUIJ	1529	C	GLY	A	216	1	0	0	220	73	290	A	C
ATOM	1530	O	GLY	A	216	18.208	16.969	29.174	1.00	13.00		A	O
ANISOU	1530	O	GLY	A	216	1985	1447	1491	-264	-143	64	A	O
SIGUIJ	1530	O	GLY	A	216	1	0	0	221	52	289	A	O
ATOM	1531	N	THR	A	217	17.142	17.660	27.323	1.00	12.59		A	N
ANISOU	1531	N	THR	A	217	1784	1270	1510	-152	-123	45	A	N
SIGUIJ	1531	N	THR	A	217	1	0	0	221	58	289	A	N
ATOM	1532	CA	THR	A	217	17.446	19.081	27.539	1.00	12.76		A	C
ANISOU	1532	CA	THR	A	217	1798	1290	1620	-179	34	-22	A	C
SIGUIJ	1532	CA	THR	A	217	1	0	0	220	73	290	A	C
ATOM	1533	CB	THR	A	217	17.006	19.861	26.284	1.00	13.20		A	C
ANISOU	1533	CB	THR	A	217	2318	1438	1753	-248	-199	72	A	C
SIGUIJ	1533	CB	THR	A	217	1	0	0	220	72	290	A	C
ATOM	1534	OG1	THR	A	217	17.663	19.279	25.147	1.00	14.39		A	O
ANISOU	1534	OG1	THR	A	217	2455	1596	1805	-206	-136	36	A	O
SIGUIJ	1534	OG1	THR	A	217	1	0	0	221	52	289	A	O
ATOM	1535	CG2	THR	A	217	17.284	21.349	26.393	1.00	14.24		A	C
ANISOU	1535	CG2	THR	A	217	3800	1489	2134	-517	-236	59	A	C
SIGUIJ	1535	CG2	THR	A	217	1	0	0	220	72	290	A	C
ATOM	1536	C	THR	A	217	16.691	19.625	28.751	1.00	12.38		A	C
ANISOU	1536	C	THR	A	217	1688	1191	1556	-168	-40	30	A	C
SIGUIJ	1536	C	THR	A	217	1	0	0	220	72	290	A	C
ATOM	1537	O	THR	A	217	15.564	19.249	29.003	1.00	12.39		A	O
ANISOU	1537	O	THR	A	217	1713	1362	1514	-232	-45	35	A	O
SIGUIJ	1537	O	THR	A	217	1	0	0	221	52	289	A	O
ATOM	1538	N	PHE	A	218	17.334	20.559	29.465	1.00	12.21		A	N
ANISOU	1538	N	PHE	A	218	1757	1254	1572	-226	-28	20	A	N
SIGUIJ	1538	N	PHE	A	218	1	0	0	221	58	289	A	N
ATOM	1539	CA	PHE	A	218	16.672	21.332	30.489	1.00	11.90		A	C
ANISOU	1539	CA	PHE	A	218	1675	1246	1486	-208	-97	59	A	C
SIGUIJ	1539	CA	PHE	A	218	1	0	0	220	72	290	A	C
ATOM	1540	CB	PHE	A	218	17.356	21.058	31.829	1.00	12.66		A	C
ANISOU	1540	CB	PHE	A	218	1933	1386	1551	-188	-226	79	A	C
SIGUIJ	1540	CB	PHE	A	218	1	0	0	220	72	290	A	C
ATOM	1541	CG	PHE	A	218	16.658	21.724	32.955	1.00	12.87		A	C
ANISOU	1541	CG	PHE	A	218	1730	1451	1439	-114	-385	103	A	C
SIGUIJ	1541	CG	PHE	A	218	1	0	0	220	72	290	A	C
ATOM	1542	CD1	PHE	A	218	15.709	21.011	33.658	1.00	13.77		A	C
ANISOU	1542	CD1	PHE	A	218	2172	1757	1813	-381	-61	48	A	C
SIGUIJ	1542	CD1	PHE	A	218	1	0	0	220	72	290	A	C
ATOM	1543	CD2	PHE	A	218	16.878	23.066	33.311	1.00	13.74		A	C

- 133 -

ANISOU	1543	CD2	PHE	A	218	1583	1452	1407	-86	-347	98	A	C
SIGUIJ	1543	CD2	PHE	A	218	1	0	0	220	72	290	A	C
ATOM	1544	CE1	PHE	A	218	14.992	21.601	34.673	1.00	15.00		A	C
ANISOU	1544	CE1	PHE	A	218	3044	2207	2268	-214	456	-105	A	C
SIGUIJ	1544	CE1	PHE	A	218	1	0	0	220	72	290	A	C
ATOM	1545	CE2	PHE	A	218	16.144	23.611	34.327	1.00	13.52		A	C
ANISOU	1545	CE2	PHE	A	218	2007	1966	1633	86	-129	-59	A	C
SIGUIJ	1545	CE2	PHE	A	218	1	0	0	220	72	290	A	C
ATOM	1546	CZ	PHE	A	218	15.221	22.887	34.986	1.00	14.44		A	C
ANISOU	1546	CZ	PHE	A	218	2309	2150	2092	-19	167	-12	A	C
SIGUIJ	1546	CZ	PHE	A	218	1	0	0	220	72	290	A	C
ATOM	1547	C	PHE	A	218	16.799	22.832	30.114	1.00	11.95		A	C
ANISOU	1547	C	PHE	A	218	1447	1237	1419	-177	-9	16	A	C
SIGUIJ	1547	C	PHE	A	218	1	0	0	220	72	290	A	C
ATOM	1548	O	PHE	A	218	17.888	23.293	29.760	1.00	11.79		A	O
ANISOU	1548	O	PHE	A	218	1487	1509	1548	-289	-9	38	A	O
SIGUIJ	1548	O	PHE	A	218	1	0	0	221	52	289	A	O
ATOM	1549	N	PRO	A	219	15.716	23.602	30.209	1.00	12.08		A	N
ANISOU	1549	N	PRO	A	219	1402	1167	1545	-231	-20	-31	A	N
SIGUIJ	1549	N	PRO	A	219	1	0	0	221	58	289	A	N
ATOM	1550	CD	PRO	A	219	15.818	25.074	30.059	1.00	12.42		A	C
ANISOU	1550	CD	PRO	A	219	1998	1163	2680	-237	160	47	A	C
SIGUIJ	1550	CD	PRO	A	219	1	0	0	220	72	290	A	C
ATOM	1551	CA	PRO	A	219	14.375	23.202	30.668	1.00	12.31		A	C
ANISOU	1551	CA	PRO	A	219	1418	1312	1570	-249	-1	-3	A	C
SIGUIJ	1551	CA	PRO	A	219	1	0	0	220	72	290	A	C
ATOM	1552	CB	PRO	A	219	13.572	24.525	30.678	1.00	12.41		A	C
ANISOU	1552	CB	PRO	A	219	1779	1449	1907	-23	8	1	A	C
SIGUIJ	1552	CB	PRO	A	219	1	0	0	220	72	290	A	C
ATOM	1553	CG	PRO	A	219	14.642	25.560	30.920	1.00	12.69		A	C
ANISOU	1553	CG	PRO	A	219	1875	1532	2386	-98	-87	1	A	C
SIGUIJ	1553	CG	PRO	A	219	1	0	0	220	72	290	A	C
ATOM	1554	C	PRO	A	219	13.726	22.195	29.731	1.00	12.75		A	C
ANISOU	1554	C	PRO	A	219	1553	1349	1561	-312	8	-21	A	C
SIGUIJ	1554	C	PRO	A	219	1	0	0	220	72	290	A	C
ATOM	1555	O	PRO	A	219	13.965	22.155	28.518	1.00	12.79		A	O
ANISOU	1555	O	PRO	A	219	1686	1343	1555	-350	26	-33	A	O
SIGUIJ	1555	O	PRO	A	219	1	0	0	221	52	289	A	O
ATOM	1556	N	CYS	A	220	12.856	21.372	30.336	1.00	12.93		A	N
ANISOU	1556	N	CYS	A	220	1508	1329	1644	-267	9	28	A	N
SIGUIJ	1556	N	CYS	A	220	1	0	0	221	58	289	A	N
ATOM	1557	CA	CYS	A	220	12.062	20.357	29.618	1.00	13.60		A	C
ANISOU	1557	CA	CYS	A	220	1546	1322	1772	-246	-24	-18	A	C
SIGUIJ	1557	CA	CYS	A	220	1	0	0	220	72	290	A	C
ATOM	1558	C	CYS	A	220	10.995	20.981	28.760	1.00	14.24		A	C
ANISOU	1558	C	CYS	A	220	1693	1699	1739	0	-1	0	A	C
SIGUIJ	1558	C	CYS	A	220	1	0	0	220	72	290	A	C
ATOM	1559	O	CYS	A	220	10.615	22.141	28.942	1.00	14.47		A	O
ANISOU	1559	O	CYS	A	220	1720	1704	1837	0	-8	0	A	O
SIGUIJ	1559	O	CYS	A	220	1	0	0	221	52	289	A	O
ATOM	1560	CB	CYS	A	220	11.388	19.442	30.614	1.00	13.73		A	C

ANISOU	1560	CB	CYS	A	220	1754	1357	1802	-333	3	-13	A	C
SIGUIJ	1560	CB	CYS	A	220	1	0	0	220	72	290	A	C
ATOM	1561	SG	CYS	A	220	12.591	18.602	31.683	1.00	13.62		A	S
ANISOU	1561	SG	CYS	A	220	1825	1404	1757	-224	32	-41	A	S
SIGUIJ	1561	SG	CYS	A	220	1	0	0	221	48	289	A	S
ATOM	1562	N	GLY	A	220A	10.397	20.125	27.903	1.00	15.11		A	N
ANISOU	1562	N	GLY	A	220A	1838	1721	1732	-69	-4	2	A	N
SIGUIJ	1562	N	GLY	A	220A	1	0	0	221	58	289	A	N
ATOM	1563	CA	GLY	A	220A	9.164	20.493	27.261	1.00	16.18		A	C
ANISOU	1563	CA	GLY	A	220A	1866	2013	1719	38	10	0	A	C
SIGUIJ	1563	CA	GLY	A	220A	1	0	0	220	72	290	A	C
ATOM	1564	C	GLY	A	220A	9.319	21.388	26.030	1.00	17.12		A	C
ANISOU	1564	C	GLY	A	220A	2445	2220	1770	-339	-171	103	A	C
SIGUIJ	1564	C	GLY	A	220A	1	0	0	220	72	290	A	C
ATOM	1565	O	GLY	A	220A	8.307	21.865	25.599	1.00	17.88		A	O
ANISOU	1565	O	GLY	A	220A	2713	2864	2256	17	-431	-23	A	O
SIGUIJ	1565	O	GLY	A	220A	1	0	0	221	52	289	A	O
ATOM	1566	N	GLN	A	221	10.490	21.594	25.449	1.00	18.02		A	N
ANISOU	1566	N	GLN	A	221	2497	1863	1947	-323	-72	36	A	N
SIGUIJ	1566	N	GLN	A	221	1	0	0	221	58	289	A	N
ATOM	1567	CA	GLN	A	221	10.577	22.382	24.191	1.00	18.94		A	C
ANISOU	1567	CA	GLN	A	221	2667	1946	1980	-453	-142	78	A	C
SIGUIJ	1567	CA	GLN	A	221	1	0	0	220	72	290	A	C
ATOM	1568	CB	GLN	A	221	12.033	22.912	23.978	1.00	20.32		A	C
ANISOU	1568	CB	GLN	A	221	2735	2120	2808	-542	71	-128	A	C
SIGUIJ	1568	CB	GLN	A	221	1	0	0	220	72	290	A	C
ATOM	1569	CG	GLN	A	221	12.698	23.650	25.232	1.00	22.63		A	C
ANISOU	1569	CG	GLN	A	221	6266	4961	2776	-3750	103	-97	A	C
SIGUIJ	1569	CG	GLN	A	221	1	0	0	220	71	290	A	C
ATOM	1570	CD	GLN	A	221	14.309	23.668	25.301	1.00	23.50		A	C
ANISOU	1570	CD	GLN	A	221	6269	5576	2798	-3749	109	-152	A	C
SIGUIJ	1570	CD	GLN	A	221	1	0	0	220	71	290	A	C
ATOM	1571	OE1	GLN	A	221	15.004	23.324	24.311	1.00	24.98		A	O
ANISOU	1571	OE1	GLN	A	221	6706	9542	2425	-1564	-346	0	A	O
SIGUIJ	1571	OE1	GLN	A	221	1	0	0	221	52	289	A	O
ATOM	1572	NE2	GLN	A	221	14.893	24.082	26.507	1.00	24.32		A	N
ANISOU	1572	NE2	GLN	A	221	4948	2602	2776	-1814	90	-60	A	N
SIGUIJ	1572	NE2	GLN	A	221	1	0	0	221	58	289	A	N
ATOM	1573	C	GLN	A	221	10.148	21.489	23.008	1.00	18.74		A	C
ANISOU	1573	C	GLN	A	221	2349	1846	1994	-295	-163	94	A	C
SIGUIJ	1573	C	GLN	A	221	1	0	0	220	71	290	A	C
ATOM	1574	O	GLN	A	221	10.442	20.318	22.989	1.00	18.63		A	O
ANISOU	1574	O	GLN	A	221	2832	1866	1658	-168	-431	60	A	O
SIGUIJ	1574	O	GLN	A	221	1	0	0	221	52	289	A	O
ATOM	1575	N	PRO	A	222	9.442	22.036	21.994	1.00	18.66		A	N
ANISOU	1575	N	PRO	A	222	2444	2066	1903	-26	-84	5	A	N
SIGUIJ	1575	N	PRO	A	222	1	0	0	221	58	289	A	N
ATOM	1576	CD	PRO	A	222	8.907	23.396	21.813	1.00	19.06		A	C
ANISOU	1576	CD	PRO	A	222	3241	2148	2479	226	-555	-114	A	C
SIGUIJ	1576	CD	PRO	A	222	1	0	0	220	71	290	A	C
ATOM	1577	CA	PRO	A	222	9.126	21.153	20.865	1.00	18.29		A	C

ANISOU	1577	CA	PRO	A	222	2662	2088	1906	-76	-97	11	A	C
SIGUIJ	1577	CA	PRO	A	222	1	0	0	220	71	290	A	C
ATOM	1578	CB	PRO	A	222	8.153	21.984	20.008	1.00	18.73		A	C
ANISOU	1578	CB	PRO	A	222	3720	2824	2104	768	-489	-244	A	C
SIGUIJ	1578	CB	PRO	A	222	1	0	0	220	71	290	A	C
ATOM	1579	CG	PRO	A	222	8.573	23.377	20.316	1.00	19.22		A	C
ANISOU	1579	CG	PRO	A	222	4653	2883	2550	569	-865	-230	A	C
SIGUIJ	1579	CG	PRO	A	222	1	0	0	221	71	290	A	C
ATOM	1580	C	PRO	A	222	10.348	20.770	20.082	1.00	18.03		A	C
ANISOU	1580	C	PRO	A	222	2412	1780	1354	-146	-451	81	A	C
SIGUIJ	1580	C	PRO	A	222	1	0	0	221	71	290	A	C
ATOM	1581	O	PRO	A	222	11.340	21.500	20.052	1.00	17.67		A	O
ANISOU	1581	O	PRO	A	222	2510	1950	1890	-286	-507	188	A	O
SIGUIJ	1581	O	PRO	A	222	1	0	0	221	52	289	A	O
ATOM	1582	N	ASN	A	223	10.273	19.628	19.426	1.00	17.53		A	N
ANISOU	1582	N	ASN	A	223	2729	1793	1356	-225	-360	79	A	N
SIGUIJ	1582	N	ASN	A	223	1	0	0	221	58	289	A	N
ATOM	1583	CA	ASN	A	223	11.350	19.147	18.569	1.00	17.54		A	C
ANISOU	1583	CA	ASN	A	223	2780	1992	1428	-172	-321	52	A	C
SIGUIJ	1583	CA	ASN	A	223	1	0	0	221	71	290	A	C
ATOM	1584	CB	ASN	A	223	11.479	20.057	17.321	1.00	18.02		A	C
ANISOU	1584	CB	ASN	A	223	3249	1976	1422	-171	-278	33	A	C
SIGUIJ	1584	CB	ASN	A	223	1	0	0	221	71	290	A	C
ATOM	1585	CG	ASN	A	223	10.215	20.035	16.501	1.00	18.59		A	C
ANISOU	1585	CG	ASN	A	223	3261	2387	1455	-161	-297	34	A	C
SIGUIJ	1585	CG	ASN	A	223	1	0	0	221	71	290	A	C
ATOM	1586	OD1	ASN	A	223	9.650	18.968	16.251	1.00	18.98		A	O
ANISOU	1586	OD1	ASN	A	223	3166	2340	1973	-58	-523	33	A	O
SIGUIJ	1586	OD1	ASN	A	223	1	0	0	221	52	289	A	O
ATOM	1587	ND2	ASN	A	223	9.739	21.206	16.088	1.00	19.13		A	N
ANISOU	1587	ND2	ASN	A	223	3123	2392	2721	-372	-737	299	A	N
SIGUIJ	1587	ND2	ASN	A	223	1	0	0	221	58	289	A	N
ATOM	1588	C	ASN	A	223	12.671	19.041	19.339	1.00	17.09		A	C
ANISOU	1588	C	ASN	A	223	2793	1697	1502	-204	-358	59	A	C
SIGUIJ	1588	C	ASN	A	223	1	0	0	221	71	290	A	C
ATOM	1589	O	ASN	A	223	13.738	19.351	18.853	1.00	17.57		A	O
ANISOU	1589	O	ASN	A	223	2923	2765	1808	-476	-247	154	A	O
SIGUIJ	1589	O	ASN	A	223	1	0	0	221	52	289	A	O
ATOM	1590	N	ASP	A	224	12.575	18.521	20.560	1.00	16.25		A	N
ANISOU	1590	N	ASP	A	224	2538	1710	1506	-198	-365	72	A	N
SIGUIJ	1590	N	ASP	A	224	1	0	0	221	58	289	A	N
ATOM	1591	CA	ASP	A	224	13.720	18.394	21.449	1.00	15.80		A	C
ANISOU	1591	CA	ASP	A	224	2495	1541	1476	-242	-327	75	A	C
SIGUIJ	1591	CA	ASP	A	224	1	0	0	221	71	290	A	C
ATOM	1592	CB	ASP	A	224	13.635	19.530	22.484	1.00	16.19		A	C
ANISOU	1592	CB	ASP	A	224	2559	1555	1532	-384	-154	54	A	C
SIGUIJ	1592	CB	ASP	A	224	1	0	0	221	71	290	A	C
ATOM	1593	CG	ASP	A	224	14.929	19.735	23.242	1.00	16.69		A	C
ANISOU	1593	CG	ASP	A	224	2561	1777	1561	-421	-159	67	A	C
SIGUIJ	1593	CG	ASP	A	224	1	0	0	221	71	290	A	C
ATOM	1594	OD1	ASP	A	224	15.907	19.005	22.994	1.00	17.24		A	O

ANISOU	1594	OD1	ASP	A	224	2637	1866	2261	-364	-12	7	A	O
SIGUIJ	1594	OD1	ASP	A	224	1	0	0	221	52	289	A	O
ATOM	1595	OD2	ASP	A	224	14.954	20.642	24.120	1.00	17.05		A	O
ANISOU	1595	OD2	ASP	A	224	2851	1892	1681	-652	75	-39	A	O
SIGUIJ	1595	OD2	ASP	A	224	1	0	0	221	52	289	A	O
ATOM	1596	C	ASP	A	224	13.581	17.040	22.170	1.00	14.99		A	C
ANISOU	1596	C	ASP	A	224	1845	1478	1361	-19	-26	1	A	C
SIGUIJ	1596	C	ASP	A	224	1	0	0	221	71	290	A	C
ATOM	1597	O	ASP	A	224	13.353	16.980	23.405	1.00	15.33		A	O
ANISOU	1597	O	ASP	A	224	1951	1733	1369	-154	1	0	A	O
SIGUIJ	1597	O	ASP	A	224	1	0	0	221	52	289	A	O
ATOM	1598	N	PRO	A	225	13.698	15.928	21.441	1.00	14.29		A	N
ANISOU	1598	N	PRO	A	225	1966	1484	1360	-67	54	-7	A	N
SIGUIJ	1598	N	PRO	A	225	1	0	0	221	58	289	A	N
ATOM	1599	CD	PRO	A	225	14.105	15.840	20.019	1.00	14.25		A	C
ANISOU	1599	CD	PRO	A	225	2603	1703	1416	-202	249	-47	A	C
SIGUIJ	1599	CD	PRO	A	225	1	0	0	221	71	290	A	C
ATOM	1600	CA	PRO	A	225	13.222	14.644	21.984	1.00	13.59		A	C
ANISOU	1600	CA	PRO	A	225	1693	1481	1339	-15	-61	4	A	C
SIGUIJ	1600	CA	PRO	A	225	1	0	0	221	71	290	A	C
ATOM	1601	CB	PRO	A	225	13.220	13.719	20.775	1.00	14.03		A	C
ANISOU	1601	CB	PRO	A	225	2427	1525	1340	-59	-27	2	A	C
SIGUIJ	1601	CB	PRO	A	225	1	0	0	221	71	290	A	C
ATOM	1602	CG	PRO	A	225	14.279	14.323	19.833	1.00	14.43		A	C
ANISOU	1602	CG	PRO	A	225	2888	1702	1777	-198	407	-66	A	C
SIGUIJ	1602	CG	PRO	A	225	1	0	0	221	71	290	A	C
ATOM	1603	C	PRO	A	225	14.122	14.114	23.096	1.00	12.87		A	C
ANISOU	1603	C	PRO	A	225	1594	1510	1279	15	10	1	A	C
SIGUIJ	1603	C	PRO	A	225	1	0	0	221	71	290	A	C
ATOM	1604	O	PRO	A	225	15.334	14.336	23.134	1.00	13.21		A	O
ANISOU	1604	O	PRO	A	225	1601	1740	1530	-41	2	0	A	O
SIGUIJ	1604	O	PRO	A	225	1	0	0	221	52	289	A	O
ATOM	1605	N	GLY	A	226	13.489	13.433	24.047	1.00	12.02		A	N
ANISOU	1605	N	GLY	A	226	1575	1508	1262	-2	-16	0	A	N
SIGUIJ	1605	N	GLY	A	226	1	0	0	221	58	289	A	N
ATOM	1606	CA	GLY	A	226	14.217	12.778	25.138	1.00	11.76		A	C
ANISOU	1606	CA	GLY	A	226	1492	1481	1217	0	44	0	A	C
SIGUIJ	1606	CA	GLY	A	226	1	0	0	221	71	290	A	C
ATOM	1607	C	GLY	A	226	14.917	11.523	24.671	1.00	11.47		A	C
ANISOU	1607	C	GLY	A	226	1455	1465	1150	0	11	0	A	C
SIGUIJ	1607	C	GLY	A	226	1	0	0	221	71	290	A	C
ATOM	1608	O	GLY	A	226	14.568	10.914	23.642	1.00	11.78		A	O
ANISOU	1608	O	GLY	A	226	1654	1487	1159	-69	11	-3	A	O
SIGUIJ	1608	O	GLY	A	226	1	0	0	221	52	289	A	O
ATOM	1609	N	VAL	A	227	15.941	11.152	25.417	1.00	11.46		A	N
ANISOU	1609	N	VAL	A	227	1406	1234	1142	-76	26	-9	A	N
SIGUIJ	1609	N	VAL	A	227	1	0	0	221	58	289	A	N
ATOM	1610	CA	VAL	A	227	16.805	10.024	25.124	1.00	11.12		A	C
ANISOU	1610	CA	VAL	A	227	1437	1245	1153	-46	20	-4	A	C
SIGUIJ	1610	CA	VAL	A	227	1	0	0	221	71	290	A	C
ATOM	1611	CB	VAL	A	227	18.303	10.442	25.180	1.00	11.78		A	C

- 137 -

ANISOU	1611	CB	VAL	A	227	1441	1335	1483	-72	0	0	A	C
SIGUIJ	1611	CB	VAL	A	227	1	0	0	221	71	290	A	C
ATOM	1612	CG1	VAL	A	227	19.175	9.313	24.627	1.00	12.98		A	C
ANISOU	1612	CG1	VAL	A	227	1874	1380	2701	-54	678	-69	A	C
SIGUIJ	1612	CG1	VAL	A	227	1	0	0	221	71	290	A	C
ATOM	1613	CG2	VAL	A	227	18.524	11.701	24.319	1.00	12.63		A	C
ANISOU	1613	CG2	VAL	A	227	2070	1541	1692	-417	-314	203	A	C
SIGUIJ	1613	CG2	VAL	A	227	1	0	0	221	70	290	A	C
ATOM	1614	C	VAL	A	227	16.555	8.910	26.127	1.00	10.85		A	C
ANISOU	1614	C	VAL	A	227	1581	1223	1175	-4	111	-1	A	C
SIGUIJ	1614	C	VAL	A	227	1	0	0	221	70	290	A	C
ATOM	1615	O	VAL	A	227	16.348	9.145	27.341	1.00	10.23		A	O
ANISOU	1615	O	VAL	A	227	1443	1221	1168	-2	94	-1	A	O
SIGUIJ	1615	O	VAL	A	227	1	0	0	221	52	289	A	O
ATOM	1616	N	TYR	A	228	16.566	7.703	25.586	1.00	10.02		A	N
ANISOU	1616	N	TYR	A	228	1415	1203	1169	4	91	2	A	N
SIGUIJ	1616	N	TYR	A	228	1	0	0	221	58	289	A	N
ATOM	1617	CA	TYR	A	228	16.222	6.463	26.308	1.00	10.20		A	C
ANISOU	1617	CA	TYR	A	228	1328	1217	1148	-22	6	-1	A	C
SIGUIJ	1617	CA	TYR	A	228	1	0	0	221	70	290	A	C
ATOM	1618	CB	TYR	A	228	14.913	5.863	25.811	1.00	9.96		A	C
ANISOU	1618	CB	TYR	A	228	1316	1188	1210	10	-3	0	A	C
SIGUIJ	1618	CB	TYR	A	228	1	0	0	221	70	290	A	C
ATOM	1619	CG	TYR	A	228	13.729	6.773	26.001	1.00	9.39		A	C
ANISOU	1619	CG	TYR	A	228	1307	1182	1150	2	-3	0	A	C
SIGUIJ	1619	CG	TYR	A	228	1	0	0	221	70	290	A	C
ATOM	1620	CD1	TYR	A	228	13.533	7.897	25.185	1.00	9.77		A	C
ANISOU	1620	CD1	TYR	A	228	1420	1198	1189	-35	-68	10	A	C
SIGUIJ	1620	CD1	TYR	A	228	1	0	0	221	70	290	A	C
ATOM	1621	CE1	TYR	A	228	12.492	8.749	25.388	1.00	10.19		A	C
ANISOU	1621	CE1	TYR	A	228	1413	1206	1165	-44	-56	10	A	C
SIGUIJ	1621	CE1	TYR	A	228	1	0	0	221	70	290	A	C
ATOM	1622	CD2	TYR	A	228	12.802	6.538	27.006	1.00	9.93		A	C
ANISOU	1622	CD2	TYR	A	228	1315	1225	1146	-26	-7	1	A	C
SIGUIJ	1622	CD2	TYR	A	228	1	0	0	221	70	290	A	C
ATOM	1623	CE2	TYR	A	228	11.746	7.360	27.192	1.00	10.22		A	C
ANISOU	1623	CE2	TYR	A	228	1341	1289	1105	4	-37	-2	A	C
SIGUIJ	1623	CE2	TYR	A	228	1	0	0	221	70	290	A	C
ATOM	1624	CZ	TYR	A	228	11.586	8.471	26.404	1.00	10.10		A	C
ANISOU	1624	CZ	TYR	A	228	1391	1309	1156	-46	-73	23	A	C
SIGUIJ	1624	CZ	TYR	A	228	1	0	0	221	70	290	A	C
ATOM	1625	OH	TYR	A	228	10.478	9.265	26.651	1.00	11.60		A	O
ANISOU	1625	OH	TYR	A	228	1481	1416	1670	19	56	7	A	O
SIGUIJ	1625	OH	TYR	A	228	1	0	0	221	52	289	A	O
ATOM	1626	C	TYR	A	228	17.290	5.436	26.099	1.00	10.30		A	C
ANISOU	1626	C	TYR	A	228	1327	1224	1215	-20	8	-2	A	C
SIGUIJ	1626	C	TYR	A	228	1	0	0	221	70	290	A	C
ATOM	1627	O	TYR	A	228	17.930	5.376	25.013	1.00	10.72		A	O
ANISOU	1627	O	TYR	A	228	1534	1590	1280	10	137	-24	A	O
SIGUIJ	1627	O	TYR	A	228	1	0	0	221	52	289	A	O
ATOM	1628	N	THR	A	229	17.535	4.608	27.117	1.00	10.63		A	N

- 138 -

ANISOU	1628	N	THR	A	229	1353	1217	1224	-11	7	-1	A	N
SIGUIJ	1628	N	THR	A	229	1	0	0	221	58	289	A	N
ATOM	1629	CA	THR	A	229	18.329	3.402	26.944	1.00	10.92		A	C
ANISOU	1629	CA	THR	A	229	1316	1211	1479	-30	37	-6	A	C
SIGUIJ	1629	CA	THR	A	229	1	0	0	221	70	290	A	C
ATOM	1630	CB	THR	A	229	18.753	2.865	28.305	1.00	11.62		A	C
ANISOU	1630	CB	THR	A	229	1564	1441	1509	151	9	11	A	C
SIGUIJ	1630	CB	THR	A	229	1	0	0	221	70	290	A	C
ATOM	1631	OG1	THR	A	229	19.487	3.872	28.948	1.00	12.39		A	O
ANISOU	1631	OG1	THR	A	229	1810	1616	1576	-46	9	-2	A	O
SIGUIJ	1631	OG1	THR	A	229	1	0	0	221	52	289	A	O
ATOM	1632	CG2	THR	A	229	19.679	1.680	28.226	1.00	12.39		A	C
ANISOU	1632	CG2	THR	A	229	1812	1563	1817	322	-11	-29	A	C
SIGUIJ	1632	CG2	THR	A	229	1	0	0	221	70	290	A	C
ATOM	1633	C	THR	A	229	17.480	2.357	26.222	1.00	11.11		A	C
ANISOU	1633	C	THR	A	229	1311	1182	1430	1	24	0	A	C
SIGUIJ	1633	C	THR	A	229	1	0	0	221	70	290	A	C
ATOM	1634	O	THR	A	229	16.345	2.041	26.627	1.00	11.43		A	O
ANISOU	1634	O	THR	A	229	1374	1278	1621	-28	140	-30	A	O
SIGUIJ	1634	O	THR	A	229	1	0	0	221	52	289	A	O
ATOM	1635	N	GLN	A	230	18.056	1.751	25.172	1.00	11.04		A	N
ANISOU	1635	N	GLN	A	230	1353	1214	1409	70	0	0	A	N
SIGUIJ	1635	N	GLN	A	230	1	0	0	221	58	289	A	N
ATOM	1636	CA	GLN	A	230	17.336	0.791	24.322	1.00	11.88		A	C
ANISOU	1636	CA	GLN	A	230	1491	1291	1412	-17	-8	1	A	C
SIGUIJ	1636	CA	GLN	A	230	1	0	0	221	70	290	A	C
ATOM	1637	CB	GLN	A	230	17.919	0.838	22.899	1.00	12.79		A	C
ANISOU	1637	CB	GLN	A	230	1649	1657	1435	0	57	1	A	C
SIGUIJ	1637	CB	GLN	A	230	1	0	0	221	70	290	A	C
ATOM	1638	CG	GLN	A	230	17.081	-0.002	21.922	1.00	13.79		A	C
ANISOU	1638	CG	GLN	A	230	1788	1661	1507	-12	-51	3	A	C
SIGUIJ	1638	CG	GLN	A	230	1	0	0	221	70	290	A	C
ATOM	1639	CD	GLN	A	230	17.584	0.009	20.482	1.00	14.47		A	C
ANISOU	1639	CD	GLN	A	230	2306	2089	1555	59	122	20	A	C
SIGUIJ	1639	CD	GLN	A	230	1	0	0	221	70	290	A	C
ATOM	1640	OE1	GLN	A	230	16.787	-0.260	19.527	1.00	16.05		A	O
ANISOU	1640	OE1	GLN	A	230	2732	2441	1836	-9	-214	-4	A	O
SIGUIJ	1640	OE1	GLN	A	230	1	0	0	221	52	289	A	O
ATOM	1641	NE2	GLN	A	230	18.860	0.287	20.314	1.00	14.61		A	N
ANISOU	1641	NE2	GLN	A	230	2271	1652	1107	167	76	13	A	N
SIGUIJ	1641	NE2	GLN	A	230	1	0	0	221	58	289	A	N
ATOM	1642	C	GLN	A	230	17.450	-0.613	24.913	1.00	11.68		A	C
ANISOU	1642	C	GLN	A	230	1483	1291	1411	-9	-6	0	A	C
SIGUIJ	1642	C	GLN	A	230	1	0	0	221	70	290	A	C
ATOM	1643	O	GLN	A	230	18.462	-1.287	24.762	1.00	11.87		A	O
ANISOU	1643	O	GLN	A	230	1507	1344	1608	30	15	-2	A	O
SIGUIJ	1643	O	GLN	A	230	1	0	0	221	52	289	A	O
ATOM	1644	N	VAL	A	231	16.404	-1.043	25.609	1.00	11.59		A	N
ANISOU	1644	N	VAL	A	231	1481	1250	1408	3	-2	0	A	N
SIGUIJ	1644	N	VAL	A	231	1	0	0	221	58	289	A	N
ATOM	1645	CA	VAL	A	231	16.447	-2.219	26.466	1.00	12.21		A	C

ANISOU	1645	CA	VAL	A	231	1612	1250	1440	34	29	4	A	C
SIGUIJ	1645	CA	VAL	A	231	1	0	0	221	70	290	A	C
ATOM	1646	CB	VAL	A	231	15.087	-2.347	27.266	1.00	11.61		A	C
ANISOU	1646	CB	VAL	A	231	1600	1317	1383	4	4	0	A	C
SIGUIJ	1646	CB	VAL	A	231	1	0	0	221	70	290	A	C
ATOM	1647	CG1	VAL	A	231	15.023	-3.633	28.014	1.00	12.29		A	C
ANISOU	1647	CG1	VAL	A	231	2296	1338	1493	129	294	41	A	C
SIGUIJ	1647	CG1	VAL	A	231	1	0	0	221	70	290	A	C
ATOM	1648	CG2	VAL	A	231	14.982	-1.162	28.257	1.00	12.18		A	C
ANISOU	1648	CG2	VAL	A	231	1858	1317	1395	-39	79	-6	A	C
SIGUIJ	1648	CG2	VAL	A	231	1	0	0	221	70	290	A	C
ATOM	1649	C	VAL	A	231	16.754	-3.513	25.701	1.00	12.35		A	C
ANISOU	1649	C	VAL	A	231	1608	1247	1495	42	25	5	A	C
SIGUIJ	1649	C	VAL	A	231	1	0	0	221	70	290	A	C
ATOM	1650	O	VAL	A	231	17.418	-4.398	26.242	1.00	12.73		A	O
ANISOU	1650	O	VAL	A	231	1825	1361	1477	194	17	8	A	O
SIGUIJ	1650	O	VAL	A	231	1	0	0	221	52	289	A	O
ATOM	1651	N	CYS	A	232	16.270	-3.612	24.464	1.00	13.22		A	N
ANISOU	1651	N	CYS	A	232	1737	1327	1550	76	-34	-9	A	N
SIGUIJ	1651	N	CYS	A	232	1	0	0	221	58	289	A	N
ATOM	1652	CA	CYS	A	232	16.490	-4.834	23.661	1.00	14.33		A	C
ANISOU	1652	CA	CYS	A	232	1699	1321	1642	57	-5	-3	A	C
SIGUIJ	1652	CA	CYS	A	232	1	0	0	221	70	290	A	C
ATOM	1653	C	CYS	A	232	17.967	-5.140	23.408	1.00	14.77		A	C
ANISOU	1653	C	CYS	A	232	1706	1485	1870	99	2	0	A	C
SIGUIJ	1653	C	CYS	A	232	1	0	0	221	69	290	A	C
ATOM	1654	O	CYS	A	232	18.307	-6.249	22.935	1.00	15.41		A	O
ANISOU	1654	O	CYS	A	232	2325	1606	2081	356	-158	-129	A	O
SIGUIJ	1654	O	CYS	A	232	1	0	0	221	52	289	A	O
ATOM	1655	CB	CYS	A	232	15.736	-4.752	22.312	1.00	14.90		A	C
ANISOU	1655	CB	CYS	A	232	1979	1752	1751	299	-178	-142	A	C
SIGUIJ	1655	CB	CYS	A	232	1	0	0	221	69	290	A	C
ATOM	1656	SG	CYS	A	232	16.414	-3.481	21.172	1.00	15.55		A	S
ANISOU	1656	SG	CYS	A	232	2155	1860	1847	211	-149	-82	A	S
SIGUIJ	1656	SG	CYS	A	232	1	0	0	221	48	289	A	S
ATOM	1657	N	LYS	A	233	18.841	-4.183	23.661	1.00	14.58		A	N
ANISOU	1657	N	LYS	A	233	1794	1605	1614	-18	55	-5	A	N
SIGUIJ	1657	N	LYS	A	233	1	0	0	221	58	289	A	N
ATOM	1658	CA	LYS	A	233	20.281	-4.345	23.441	1.00	14.96		A	C
ANISOU	1658	CA	LYS	A	233	1793	1916	1589	20	34	-1	A	C
SIGUIJ	1658	CA	LYS	A	233	1	0	0	221	69	290	A	C
ATOM	1659	CB	LYS	A	233	20.929	-3.013	23.048	1.00	15.39		A	C
ANISOU	1659	CB	LYS	A	233	1886	1930	1683	0	80	0	A	C
SIGUIJ	1659	CB	LYS	A	233	1	0	0	221	69	290	A	C
ATOM	1660	CG	LYS	A	233	20.379	-2.387	21.745	1.00	15.68		A	C
ANISOU	1660	CG	LYS	A	233	2041	1958	1709	1	15	0	A	C
SIGUIJ	1660	CG	LYS	A	233	1	0	0	221	69	290	A	C
ATOM	1661	CD	LYS	A	233	20.467	-3.337	20.517	1.00	16.47		A	C
ANISOU	1661	CD	LYS	A	233	2745	1994	1706	95	0	0	A	C
SIGUIJ	1661	CD	LYS	A	233	1	0	0	221	69	290	A	C
ATOM	1662	CE	LYS	A	233	19.967	-2.641	19.232	1.00	17.46		A	C

- 140 -

ANISOU	1662	CE	LYS	A	233	2704	2172	1689	228	90	27	A	C
SIGUIJ	1662	CE	LYS	A	233	1	0	0	221	69	290	A	C
ATOM	1663	NZ	LYS	A	233	20.709	-1.429	18.892	1.00	18.10		A	N
ANISOU	1663	NZ	LYS	A	233	2910	2235	2165	148	274	53	A	N
SIGUIJ	1663	NZ	LYS	A	233	1	0	0	221	58	289	A	N
ATOM	1664	C	LYS	A	233	20.980	-4.904	24.701	1.00	15.08		A	C
ANISOU	1664	C	LYS	A	233	1856	1893	1624	9	-11	1	A	C
SIGUIJ	1664	C	LYS	A	233	1	0	0	221	69	290	A	C
ATOM	1665	O	LYS	A	233	22.189	-5.176	24.640	1.00	15.49		A	O
ANISOU	1665	O	LYS	A	233	1892	2582	1999	169	14	-11	A	O
SIGUIJ	1665	O	LYS	A	233	1	0	0	221	52	289	A	O
ATOM	1665	N	PHE	A	234	20.240	-5.094	25.800	1.00	15.18		A	N
ANISOU	1666	N	PHE	A	234	1817	1374	1619	144	-20	-10	A	N
SIGUIJ	1666	N	PHE	A	234	1	0	0	221	58	289	A	N
ATOM	1667	CA	PHE	A	234	20.859	-5.419	27.104	1.00	15.35		A	C
ANISOU	1667	CA	PHE	A	234	2261	1537	1671	459	-178	-108	A	C
SIGUIJ	1667	CA	PHE	A	234	1	0	0	221	69	290	A	C
ATOM	1668	CB	PHE	A	234	20.684	-4.191	28.069	1.00	14.40		A	C
ANISOU	1668	CB	PHE	A	234	1588	1418	1521	216	19	26	A	C
SIGUIJ	1668	CB	PHE	A	234	1	0	0	221	69	290	A	C
ATOM	1669	CG	PHE	A	234	21.476	-3.012	27.649	1.00	13.96		A	C
ANISOU	1669	CG	PHE	A	234	1811	1528	1422	48	24	3	A	C
SIGUIJ	1669	CG	PHE	A	234	1	0	0	221	69	290	A	C
ATOM	1670	CD1	PHE	A	234	20.887	-1.978	26.983	1.00	13.80		A	C
ANISOU	1670	CD1	PHE	A	234	1831	1597	1406	126	113	40	A	C
SIGUIJ	1670	CD1	PHE	A	234	1	0	0	221	69	290	A	C
ATOM	1671	CD2	PHE	A	234	22.840	-2.958	27.924	1.00	13.70		A	C
ANISOU	1671	CD2	PHE	A	234	1813	1989	1645	32	-18	0	A	C
SIGUIJ	1671	CD2	PHE	A	234	1	0	0	221	69	290	A	C
ATOM	1672	CE1	PHE	A	234	21.600	-0.882	26.570	1.00	13.55		A	C
ANISOU	1672	CE1	PHE	A	234	1929	1642	1311	38	87	8	A	C
SIGUIJ	1672	CE1	PHE	A	234	1	0	0	221	69	290	A	C
ATOM	1673	CE2	PHE	A	234	23.558	-1.868	27.521	1.00	13.95		A	C
ANISOU	1673	CE2	PHE	A	234	1898	2016	1674	-10	6	0	A	C
SIGUIJ	1673	CE2	PHE	A	234	1	0	0	221	69	290	A	C
ATOM	1674	CZ	PHE	A	234	22.926	-0.817	26.832	1.00	13.72		A	C
ANISOU	1674	CZ	PHE	A	234	1939	2021	1667	5	6	0	A	C
SIGUIJ	1674	CZ	PHE	A	234	1	0	0	221	69	290	A	C
ATOM	1675	C	PHE	A	234	20.267	-6.695	27.739	1.00	16.19		A	C
ANISOU	1675	C	PHE	A	234	2047	1458	1584	530	-224	-168	A	C
SIGUIJ	1675	C	PHE	A	234	1	0	0	221	69	290	A	C
ATOM	1676	O	PHE	A	234	20.407	-6.952	28.914	1.00	15.82		A	O
ANISOU	1676	O	PHE	A	234	2292	1605	1585	596	-200	-134	A	O
SIGUIJ	1676	O	PHE	A	234	1	0	0	221	52	289	A	O
ATOM	1677	N	THR	A	235	19.631	-7.513	26.902	1.00	17.36		A	N
ANISOU	1677	N	THR	A	235	3328	1614	2113	297	-943	-160	A	N
SIGUIJ	1677	N	THR	A	235	1	0	0	221	58	289	A	N
ATOM	1678	CA	THR	A	235	18.984	-8.754	27.350	1.00	18.36		A	C
ANISOU	1678	CA	THR	A	235	3657	1659	2822	242	-637	-74	A	C
SIGUIJ	1678	CA	THR	A	235	1	0	0	221	69	290	A	C
ATOM	1679	CB	THR	A	235	18.554	-9.620	26.125	1.00	19.04		A	C

- 141 -

ANISOU 1679	CB	THR A 235	3239	1769	2587	-218	-159	27	A	C
SIGUIJ 1679	CB	THR A 235	1	0	0	221	69	290	A	C
ATOM 1680	OG1	THR A 235	17.678	-8.864	25.331	1.00	20.24		A	O
ANISOU 1680	OG1	THR A 235	3786	2237	2696	253	-320	-59	A	O
SIGUIJ 1680	OG1	THR A 235	1	0	0	221	52	289	A	O
ATOM 1681	CG2	THR A 235	17.874	-10.902	26.570	1.00	19.96		A	C
ANISOU 1681	CG2	THR A 235	4745	2126	2800	-925	101	-39	A	C
SIGUIJ 1681	CG2	THR A 235	1	0	0	221	69	290	A	C
ATOM 1682	C	THR A 235	19.912	-9.625	28.174	1.00	18.18		A	C
ANISOU 1682	C	THR A 235	3252	1629	2358	211	-204	-35	A	C
SIGUIJ 1682	C	THR A 235	1	0	0	221	69	290	A	C
ATOM 1683	O	THR A 235	19.536	-10.106	29.239	1.00	18.19		A	O
ANISOU 1683	O	THR A 235	3132	1497	2331	257	-231	-64	A	O
SIGUIJ 1683	O	THR A 235	1	0	0	221	52	289	A	O
ATOM 1684	N	LYS A 236	21.101	-9.821	27.631	1.00	18.29		A	N
ANISOU 1684	N	LYS A 236	3127	1760	1798	232	-481	-77	A	N
SIGUIJ 1684	N	LYS A 236	1	0	0	221	58	289	A	N
ATOM 1685	CA	LYS A 236	22.054	-10.728	28.249	1.00	18.63		A	C
ANISOU 1685	CA	LYS A 236	3363	2022	1616	529	-414	-132	A	C
SIGUIJ 1685	CA	LYS A 236	1	0	0	221	69	290	A	C
ATOM 1686	CB	LYS A 236	23.253	-10.968	27.340	1.00	19.90		A	C
ANISOU 1686	CB	LYS A 236	3742	2411	2145	727	32	14	A	C
SIGUIJ 1686	CB	LYS A 236	1	0	0	221	69	290	A	C
ATOM 1687	CG	LYS A 236	24.209	-11.974	27.902	1.00	21.31		A	C
ANISOU 1687	CG	LYS A 236	4377	2728	2374	1155	-279	-150	A	C
SIGUIJ 1687	CG	LYS A 236	1	0	0	221	69	290	A	C
ATOM 1688	CD	LYS A 236	25.310	-12.238	26.897	1.00	22.84		A	C
ANISOU 1688	CD	LYS A 236	6892	5054	4324	3275	1915	1570	A	C
SIGUIJ 1688	CD	LYS A 236	1	0	0	221	69	290	A	C
ATOM 1689	CE	LYS A 236	26.216	-13.345	27.370	1.00	23.64		A	C
ANISOU 1689	CE	LYS A 236	6392	3056	4572	1820	-527	-327	A	C
SIGUIJ 1689	CE	LYS A 236	1	0	0	221	69	290	A	C
ATOM 1690	NZ	LYS A 236	27.456	-13.340	26.562	1.00	25.02		A	N
ANISOU 1690	NZ	LYS A 236	6797	13244	5535	2051	95	92	A	N
SIGUIJ 1690	NZ	LYS A 236	1	0	0	221	58	289	A	N
ATOM 1691	C	LYS A 236	22.526	-10.128	29.558	1.00	17.98		A	C
ANISOU 1691	C	LYS A 236	2715	1993	1706	1022	-413	-322	A	C
SIGUIJ 1691	C	LYS A 236	1	0	0	221	69	290	A	C
ATOM 1692	O	LYS A 236	22.612	-10.840	30.537	1.00	17.65		A	O
ANISOU 1692	O	LYS A 236	3107	2053	1746	1159	-367	-267	A	O
SIGUIJ 1692	O	LYS A 236	1	0	0	221	52	289	A	O
ATOM 1693	N	TRP A 237	22.889	-8.853	29.567	1.00	17.03		A	N
ANISOU 1693	N	TRP A 237	2618	1993	1781	1025	-409	-346	A	N
SIGUIJ 1693	N	TRP A 237	1	0	0	221	58	289	A	N
ATOM 1694	CA	TRP A 237	23.384	-8.251	30.810	1.00	16.42		A	C
ANISOU 1694	CA	TRP A 237	2455	1988	1665	736	-256	-201	A	C
SIGUIJ 1694	CA	TRP A 237	1	0	0	221	69	290	A	C
ATOM 1695	CB	TRP A 237	23.834	-6.811	30.542	1.00	16.54		A	C
ANISOU 1695	CB	TRP A 237	2900	2057	1693	573	-339	-161	A	C
SIGUIJ 1695	CB	TRP A 237	1	0	0	221	68	290	A	C
ATOM 1696	CG	TRP A 237	24.301	-6.106	31.830	1.00	16.18		A	C

- 142 -

ANISOU	1696	CG	TRP	A	237	2308	2005	1448	199	72	23	A	C
SIGUIJ	1696	CG	TRP	A	237	1	0	0	221	68	290	A	C
ATOM	1697	CD2	TRP	A	237	23.479	-5.308	32.710	1.00	16.10		A	C
ANISOU	1697	CD2	TRP	A	237	2256	1884	1541	68	168	21	A	C
SIGUIJ	1697	CD2	TRP	A	237	1	0	0	221	68	290	A	C
ATOM	1698	CE2	TRP	A	237	24.264	-4.995	33.844	1.00	16.17		A	C
ANISOU	1698	CE2	TRP	A	237	2715	1863	1796	162	-178	-32	A	C
SIGUIJ	1698	CE2	TRP	A	237	1	0	0	221	68	290	A	C
ATOM	1699	CE3	TRP	A	237	22.168	-4.852	32.648	1.00	15.70		A	C
ANISOU	1699	CE3	TRP	A	237	2222	1659	1712	-13	160	-4	A	C
SIGUIJ	1699	CE3	TRP	A	237	1	0	0	221	68	290	A	C
ATOM	1700	CD1	TRP	A	237	25.489	-6.214	32.420	1.00	16.78		A	C
ANISOU	1700	CD1	TRP	A	237	2436	2182	1896	260	-158	-85	A	C
SIGUIJ	1700	CD1	TRP	A	237	1	0	0	221	68	290	A	C
ATOM	1701	NE1	TRP	A	237	25.485	-5.557	33.634	1.00	16.57		A	N
ANISOU	1701	NE1	TRP	A	237	2778	2169	1886	304	-182	-68	A	N
SIGUIJ	1701	NE1	TRP	A	237	1	0	0	221	58	289	A	N
ATOM	1702	CZ2	TRP	A	237	23.766	-4.247	34.944	1.00	15.98		A	C
ANISOU	1702	CZ2	TRP	A	237	2724	1596	1905	-228	88	-20	A	C
SIGUIJ	1702	CZ2	TRP	A	237	1	0	0	221	68	290	A	C
ATOM	1703	CZ3	TRP	A	237	21.680	-4.106	33.762	1.00	16.00		A	C
ANISOU	1703	CZ3	TRP	A	237	2333	1699	1868	-218	354	-114	A	C
SIGUIJ	1703	CZ3	TRP	A	237	1	0	0	221	68	290	A	C
ATOM	1704	CH2	TRP	A	237	22.476	-3.832	34.861	1.00	16.05		A	C
ANISOU	1704	CH2	TRP	A	237	2714	1499	2033	-260	87	-25	A	C
SIGUIJ	1704	CH2	TRP	A	237	1	0	0	221	68	290	A	C
ATOM	1705	C	TRP	A	237	22.294	-8.322	31.896	1.00	16.26		A	C
ANISOU	1705	C	TRP	A	237	2341	1815	1571	676	-369	-261	A	C
SIGUIJ	1705	C	TRP	A	237	1	0	0	221	68	290	A	C
ATOM	1706	O	TRP	A	237	22.574	-8.590	33.053	1.00	15.65		A	O
ANISOU	1706	O	TRP	A	237	2261	1882	1557	952	-312	-302	A	O
SIGUIJ	1706	O	TRP	A	237	1	0	0	221	52	289	A	O
ATOM	1707	N	ILE	A	238	21.056	-8.025	31.542	1.00	16.04		A	N
ANISOU	1707	N	ILE	A	238	2313	1408	1693	542	-360	-201	A	N
SIGUIJ	1707	N	ILE	A	238	1	0	0	221	58	289	A	N
ATOM	1708	CA	ILE	A	238	20.021	-8.050	32.574	1.00	16.27		A	C
ANISOU	1708	CA	ILE	A	238	2361	1425	1756	531	-302	-181	A	C
SIGUIJ	1708	CA	ILE	A	238	1	0	0	221	68	290	A	C
ATOM	1709	CB	ILE	A	238	18.660	-7.606	31.953	1.00	15.62		A	C
ANISOU	1709	CB	ILE	A	238	2330	1440	1715	506	-265	-149	A	C
SIGUIJ	1709	CB	ILE	A	238	1	0	0	221	68	290	A	C
ATOM	1710	CG2	ILE	A	238	17.504	-7.904	32.910	1.00	15.95		A	C
ANISOU	1710	CG2	ILE	A	238	2542	1960	2066	479	-14	-10	A	C
SIGUIJ	1710	CG2	ILE	A	238	1	0	0	221	68	290	A	C
ATOM	1711	CG1	ILE	A	238	18.744	-6.118	31.573	1.00	15.59		A	C
ANISOU	1711	CG1	ILE	A	238	2375	1462	2087	558	-65	-65	A	C
SIGUIJ	1711	CG1	ILE	A	238	1	0	0	221	68	290	A	C
ATOM	1712	CD1	ILE	A	238	17.582	-5.630	30.631	1.00	16.30		A	C
ANISOU	1712	CD1	ILE	A	238	2398	1805	2074	675	-40	-45	A	C
SIGUIJ	1712	CD1	ILE	A	238	1	0	0	221	68	290	A	C
ATOM	1713	C	ILE	A	238	19.877	-9.455	33.193	1.00	16.58		A	C

- 143 -

ANISOU	1713	C	ILE A 238	2917	1455	1938	494	-247	-97	A	C
SIGUIJ	1713	C	ILE A 238	1	0	0	221	68	290	A	C
ATOM	1714	O	ILE A 238	19.856	-9.658	34.435	1.00	16.17		A	O
ANISOU	1714	O	ILE A 238	2618	1314	1932	523	-241	-124	A	O
SIGUIJ	1714	O	ILE A 238	1	0	0	221	52	289	A	O
ATOM	1715	N	ASN A 239	19.772	-10.462	32.322	1.00	17.40		A	N
ANISOU	1715	N	ASN A 239	2720	1490	2022	587	-317	-168	A	N
SIGUIJ	1715	N	ASN A 239	1	0	0	221	58	289	A	N
ATOM	1716	CA	ASN A 239	19.560	-11.823	32.838	1.00	18.45		A	C
ANISOU	1716	CA	ASN A 239	3345	1520	2166	463	-392	-119	A	C
SIGUIJ	1716	CA	ASN A 239	1	0	0	221	68	290	A	C
ATOM	1717	CB	ASN A 239	19.189	-12.774	31.691	1.00	20.04		A	C
ANISOU	1717	CB	ASN A 239	5980	1900	1951	-956	-63	15	A	C
SIGUIJ	1717	CB	ASN A 239	1	0	0	221	68	290	A	C
ATOM	1718	CG	ASN A 239	17.805	-12.468	31.122	1.00	21.83		A	C
ANISOU	1718	CG	ASN A 239	6761	7810	5084	260	-1304	222	A	C
SIGUIJ	1718	CG	ASN A 239	1	0	0	221	68	290	A	C
ATOM	1719	OD1	ASN A 239	16.900	-11.963	31.829	1.00	23.50		A	O
ANISOU	1719	OD1	ASN A 239	7722	7660	7052	-1	110	-1	A	O
SIGUIJ	1719	OD1	ASN A 239	1	0	0	221	52	289	A	O
ATOM	1720	ND2	ASN A 239	17.616	-12.779	29.837	1.00	23.10		A	N
ANISOU	1720	ND2	ASN A 239	7909	9116	5160	-83	-1388	-43	A	N
SIGUIJ	1720	ND2	ASN A 239	1	0	0	221	58	289	A	N
ATOM	1721	C	ASN A 239	20.751	-12.322	33.624	1.00	18.28		A	C
ANISOU	1721	C	ASN A 239	3333	1689	2087	528	-329	-114	A	C
SIGUIJ	1721	C	ASN A 239	1	0	0	221	68	290	A	C
ATOM	1722	O	ASN A 239	20.609	-12.859	34.727	1.00	18.24		A	O
ANISOU	1722	O	ASN A 239	3229	1606	2117	838	-192	-107	A	O
SIGUIJ	1722	O	ASN A 239	1	0	0	221	52	289	A	O
ATOM	1723	N	ASP A 240	21.916	-12.037	33.129	1.00	17.82		A	N
ANISOU	1723	N	ASP A 240	3295	1342	1956	607	-371	-137	A	N
SIGUIJ	1723	N	ASP A 240	1	0	0	221	58	289	A	N
ATOM	1724	CA	ASP A 240	23.106	-12.575	33.751	1.00	18.10		A	C
ANISOU	1724	CA	ASP A 240	3799	2334	2436	1243	-775	-496	A	C
SIGUIJ	1724	CA	ASP A 240	1	0	0	221	68	290	A	C
ATOM	1725	CB	ASP A 240	24.292	-12.406	32.852	1.00	19.02		A	C
ANISOU	1725	CB	ASP A 240	4137	1964	3126	1487	-286	-241	A	C
SIGUIJ	1725	CB	ASP A 240	1	0	0	221	68	290	A	C
ATOM	1726	CG	ASP A 240	24.312	-13.411	31.719	1.00	19.82		A	C
ANISOU	1726	CG	ASP A 240	4105	1550	2819	841	274	121	A	C
SIGUIJ	1726	CG	ASP A 240	1	0	0	221	68	290	A	C
ATOM	1727	OD1	ASP A 240	23.383	-14.232	31.563	1.00	20.77		A	O
ANISOU	1727	OD1	ASP A 240	4301	1803	2990	618	284	87	A	O
SIGUIJ	1727	OD1	ASP A 240	1	0	0	221	52	289	A	O
ATOM	1728	OD2	ASP A 240	25.296	-13.321	31.007	1.00	21.46		A	O
ANISOU	1728	OD2	ASP A 240	4280	4063	3184	794	513	375	A	O
SIGUIJ	1728	OD2	ASP A 240	1	0	0	221	52	289	A	O
ATOM	1729	C	ASP A 240	23.423	-11.897	35.057	1.00	17.51		A	C
ANISOU	1729	C	ASP A 240	2026	1656	1996	578	7	15	A	C
SIGUIJ	1729	C	ASP A 240	1	0	0	221	68	290	A	C
ATOM	1730	O	ASP A 240	23.894	-12.545	35.996	1.00	17.50		A	O

- 144 -

ANISOU	1730	O	ASP	A	240	3155	1656	2025	974	-314	-198	A	O
SIGUIJ	1730	O	ASP	A	240	1	0	0	221	52	289	A	O
ATOM	1731	N	THR	A	241	23.229	-10.574	35.130	1.00	16.51		A	N
ANISOU	1731	N	THR	A	241	1554	1642	2153	499	-25	18	A	N
SIGUIJ	1731	N	THR	A	241	1	0	0	221	58	289	A	N
ATOM	1732	CA	THR	A	241	23.519	-9.853	36.374	1.00	15.98		A	C
ANISOU	1732	CA	THR	A	241	1904	1784	2151	226	6	-4	A	C
SIGUIJ	1732	CA	THR	A	241	1	0	0	221	68	290	A	C
ATOM	1733	CB	THR	A	241	23.335	-8.344	36.168	1.00	15.61		A	C
ANISOU	1733	CB	THR	A	241	2272	1779	1728	242	-129	-53	A	C
SIGUIJ	1733	CB	THR	A	241	1	0	0	221	68	290	A	C
ATOM	1734	OG1	THR	A	241	24.246	-7.924	35.136	1.00	16.03		A	O
ANISOU	1734	OG1	THR	A	241	2392	1887	1843	240	-16	-7	A	O
SIGUIJ	1734	OG1	THR	A	241	1	0	0	221	52	289	A	O
ATOM	1735	CG2	THR	A	241	23.548	-7.565	37.496	1.00	15.96		A	C
ANISOU	1735	CG2	THR	A	241	3006	1804	1768	311	-300	-72	A	C
SIGUIJ	1735	CG2	THR	A	241	1	0	0	221	68	290	A	C
ATOM	1736	C	THR	A	241	22.581	-10.366	37.466	1.00	15.67		A	C
ANISOU	1736	C	THR	A	241	1835	1394	2154	389	21	-17	A	C
SIGUIJ	1736	C	THR	A	241	1	0	0	221	68	290	A	C
ATOM	1737	O	THR	A	241	22.981	-10.530	38.632	1.00	15.41		A	O
ANISOU	1737	O	THR	A	241	1953	1460	2163	397	-2	5	A	O
SIGUIJ	1737	O	THR	A	241	1	0	0	221	52	289	A	O
ATOM	1738	N	MET	A	242	21.309	-10.614	37.153	1.00	15.65		A	N
ANISOU	1738	N	MET	A	242	1830	1169	2209	418	21	-13	A	N
SIGUIJ	1738	N	MET	A	242	1	0	0	221	58	289	A	N
ATOM	1739	CA	MET	A	242	20.454	-11.169	38.182	1.00	16.26		A	C
ANISOU	1739	CA	MET	A	242	1834	1352	2191	308	-31	11	A	C
SIGUIJ	1739	CA	MET	A	242	1	0	0	221	68	290	A	C
ATOM	1740	CB	MET	A	242	19.019	-11.306	37.688	1.00	16.02		A	C
ANISOU	1740	CB	MET	A	242	1872	1507	2567	294	-153	23	A	C
SIGUIJ	1740	CB	MET	A	242	1	0	0	221	67	290	A	C
ATOM	1741	CG	MET	A	242	18.363	-9.924	37.474	1.00	15.38		A	C
ANISOU	1741	CG	MET	A	242	1839	1498	1717	289	-44	-48	A	C
SIGUIJ	1741	CG	MET	A	242	1	0	0	221	67	290	A	C
ATOM	1742	SD	MET	A	242	16.600	-9.974	37.099	1.00	15.58		A	S
ANISOU	1742	SD	MET	A	242	1876	1638	2298	288	-182	-86	A	S
SIGUIJ	1742	SD	MET	A	242	1	0	0	221	48	289	A	S
ATOM	1743	CE	MET	A	242	16.608	-10.898	35.580	1.00	16.03		A	C
ANISOU	1743	CE	MET	A	242	2222	1519	2252	29	-1	0	A	C
SIGUIJ	1743	CE	MET	A	242	1	0	0	221	67	290	A	C
ATOM	1744	C	MET	A	242	20.951	-12.552	38.622	1.00	17.07		A	C
ANISOU	1744	C	MET	A	242	2176	1393	2258	422	1	13	A	C
SIGUIJ	1744	C	MET	A	242	1	0	0	221	67	290	A	C
ATOM	1745	O	MET	A	242	20.917	-12.839	39.831	1.00	17.17		A	O
ANISOU	1745	O	MET	A	242	2211	1777	2277	403	5	81	A	O
SIGUIJ	1745	O	MET	A	242	1	0	0	221	52	289	A	O
ATOM	1746	N	LYS	A	243	21.351	-13.402	37.665	1.00	18.03		A	N
ANISOU	1746	N	LYS	A	243	2213	1425	2296	434	0	-21	A	N
SIGUIJ	1746	N	LYS	A	243	1	0	0	221	58	289	A	N
ATOM	1747	CA	LYS	A	243	21.732	-14.770	38.034	1.00	19.06		A	C

- 145 -

ANISOU	1747	CA	LYS A 243	2225	1424	2431	426	-3	6	A	C
SIGUIJ	1747	CA	LYS A 243	1	0	0	221	67	290	A	C
ATOM	1748	CB	LYS A 243	21.848	-15.655	36.790	1.00	19.69		A	C
ANISOU	1748	CB	LYS A 243	4005	1401	2430	522	65	17	A	C
SIGUIJ	1748	CB	LYS A 243	1	0	0	221	67	290	A	C
ATOM	1749	CG	LYS A 243	20.535	-15.890	36.035	1.00	21.32		A	C
ANISOU	1749	CG	LYS A 243	4461	3080	3739	308	-657	-170	A	C
SIGUIJ	1749	CG	LYS A 243	1	0	0	221	67	290	A	C
ATOM	1750	CD	LYS A 243	20.933	-16.543	34.700	1.00	22.30		A	C
ANISOU	1750	CD	LYS A 243	10922	2563	4249	114	1364	21	A	C
SIGUIJ	1750	CD	LYS A 243	1	0	0	221	67	290	A	C
ATOM	1751	CE	LYS A 243	19.867	-17.447	34.113	1.00	22.84		A	C
ANISOU	1751	CE	LYS A 243	11189	2802	4638	-73	1171	-11	A	C
SIGUIJ	1751	CE	LYS A 243	1	0	0	221	67	290	A	C
ATOM	1752	NZ	LYS A 243	19.720	-18.657	34.959	1.00	23.58		A	N
ANISOU	1752	NZ	LYS A 243	3958	2803	4447	8	32	0	A	N
SIGUIJ	1752	NZ	LYS A 243	1	0	0	221	58	289	A	N
ATOM	1753	C	LYS A 243	23.036	-14.780	38.811	1.00	19.41		A	C
ANISOU	1753	C	LYS A 243	2221	1771	2421	444	2	-6	A	C
SIGUIJ	1753	C	LYS A 243	1	0	0	221	67	290	A	C
ATOM	1754	O	LYS A 243	23.251	-15.704	39.631	1.00	19.49		A	O
ANISOU	1754	O	LYS A 243	2813	1899	2495	659	77	85	A	O
SIGUIJ	1754	O	LYS A 243	1	0	0	221	52	289	A	O
ATOM	1755	N	LYS A 244	23.897	-13.795	38.577	1.00	19.53		A	N
ANISOU	1755	N	LYS A 244	2133	1688	2068	511	-36	-68	A	N
SIGUIJ	1755	N	LYS A 244	1	0	0	221	58	289	A	N
ATOM	1756	CA	LYS A 244	25.157	-13.728	39.293	1.00	20.25		A	C
ANISOU	1756	CA	LYS A 244	2154	1775	2169	541	-75	-148	A	C
SIGUIJ	1756	CA	LYS A 244	1	0	0	221	67	290	A	C
ATOM	1757	CB	LYS A 244	26.178	-12.970	38.454	1.00	20.71		A	C
ANISOU	1757	CB	LYS A 244	2628	2639	2411	-3	4	1	A	C
SIGUIJ	1757	CB	LYS A 244	1	0	0	221	67	290	A	C
ATOM	1758	CG	LYS A 244	26.607	-13.844	37.266	1.00	21.33		A	C
ANISOU	1758	CG	LYS A 244	2939	2704	2415	146	5	2	A	C
SIGUIJ	1758	CG	LYS A 244	1	0	0	221	67	290	A	C
ATOM	1759	CD	LYS A 244	27.426	-13.149	36.237	1.00	22.40		A	C
ANISOU	1759	CD	LYS A 244	3516	3005	2578	-172	256	-61	A	C
SIGUIJ	1759	CD	LYS A 244	1	0	0	221	67	290	A	C
ATOM	1760	CE	LYS A 244	27.046	-13.689	34.891	1.00	23.00		A	C
ANISOU	1760	CE	LYS A 244	5164	2662	2883	853	-627	-206	A	C
SIGUIJ	1760	CE	LYS A 244	1	0	0	221	67	290	A	C
ATOM	1761	NZ	LYS A 244	28.051	-13.198	33.885	1.00	23.58		A	N
ANISOU	1761	NZ	LYS A 244	6818	5829	3878	-592	322	-106	A	N
SIGUIJ	1761	NZ	LYS A 244	1	0	0	221	58	289	A	N
ATOM	1762	C	LYS A 244	25.059	-13.148	40.701	1.00	20.44		A	C
ANISOU	1762	C	LYS A 244	2240	1405	2114	427	-7	-9	A	C
SIGUIJ	1762	C	LYS A 244	1	0	0	221	67	290	A	C
ATOM	1763	O	LYS A 244	26.033	-13.177	41.458	1.00	20.15		A	O
ANISOU	1763	O	LYS A 244	2261	2172	2151	487	-32	-52	A	O
SIGUIJ	1763	O	LYS A 244	1	0	0	221	51	289	A	O
ATOM	1764	N	HIS A 245	23.893	-12.629	41.059	1.00	21.08		A	N

- 146 -

ANISOU	1764	N	HIS	A	245	2292	1885	1853	610	-111	-105	A	N
SIGUIJ	1764	N	HIS	A	245	1	0	0	221	57	289	A	N
ATOM	1765	CA	HIS	A	245	23.699	-12.026	42.375	1.00	22.18		A	C
ANISOU	1765	CA	HIS	A	245	2118	1610	1826	331	-11	-8	A	C
SIGUIJ	1765	CA	HIS	A	245	1	0	0	221	67	290	A	C
ATOM	1766	CB	HIS	A	245	23.528	-10.498	42.280	1.00	21.47		A	C
ANISOU	1766	CB	HIS	A	245	2113	1618	2489	343	-60	21	A	C
SIGUIJ	1766	CB	HIS	A	245	1	0	0	221	67	290	A	C
ATOM	1767	CG	HIS	A	245	24.756	-9.806	41.809	1.00	21.54		A	C
ANISOU	1767	CG	HIS	A	245	2208	1683	2698	274	39	-9	A	C
SIGUIJ	1767	CG	HIS	A	245	1	0	0	221	67	290	A	C
ATOM	1768	CD2	HIS	A	245	25.094	-9.348	40.592	1.00	21.75		A	C
ANISOU	1768	CD2	HIS	A	245	2595	1985	2703	-38	20	11	A	C
SIGUIJ	1768	CD2	HIS	A	245	1	0	0	221	67	290	A	C
ATOM	1769	ND1	HIS	A	245	25.856	-9.605	42.618	1.00	22.01		A	N
ANISOU	1769	ND1	HIS	A	245	2583	3631	3237	-101	-356	-39	A	N
SIGUIJ	1769	ND1	HIS	A	245	1	0	0	221	57	289	A	N
ATOM	1770	CE1	HIS	A	245	26.818	-9.047	41.910	1.00	21.93		A	C
ANISOU	1770	CE1	HIS	A	245	2767	3493	3671	0	-48	0	A	C
SIGUIJ	1770	CE1	HIS	A	245	1	0	0	221	67	290	A	C
ATOM	1771	NE2	HIS	A	245	26.379	-8.876	40.682	1.00	21.98		A	N
ANISOU	1771	NE2	HIS	A	245	2697	2672	3671	-298	-44	5	A	N
SIGUIJ	1771	NE2	HIS	A	245	1	0	0	221	57	289	A	N
ATOM	1772	C	HIS	A	245	22.478	-12.610	43.050	1.00	23.41		A	C
ANISOU	1772	C	HIS	A	245	2277	2229	1876	16	4	1	A	C
SIGUIJ	1772	C	HIS	A	245	1	0	0	221	67	290	A	C
ATOM	1773	O	HIS	A	245	21.673	-11.862	43.634	1.00	23.57		A	O
ANISOU	1773	O	HIS	A	245	3593	2566	2676	683	1018	474	A	O
SIGUIJ	1773	O	HIS	A	245	1	0	0	221	51	289	A	O
ATOM	1774	N	ARG	A	246	22.331	-13.935	43.000	1.00	24.99		A	N
ANISOU	1774	N	ARG	A	246	2645	2244	3081	-2	-411	11	A	N
SIGUIJ	1774	N	ARG	A	246	1	0	0	221	57	289	A	N
ATOM	1775	CA	ARG	A	246	21.272	-14.563	43.756	1.00	26.54		A	C
ANISOU	1775	CA	ARG	A	246	3755	2997	5101	-286	913	201	A	C
SIGUIJ	1775	CA	ARG	A	246	1	0	0	221	67	290	A	C
ATOM	1776	CB	ARG	A	246	21.219	-16.057	43.462	1.00	27.41		A	C
ANISOU	1776	CB	ARG	A	246	3507	3031	6293	-54	-129	9	A	C
SIGUIJ	1776	CB	ARG	A	246	1	0	0	221	67	290	A	C
ATOM	1777	CG	ARG	A	246	21.319	-16.302	42.001	1.00	28.73		A	C
ANISOU	1777	CG	ARG	A	246	8214	3342	6310	616	83	8	A	C
SIGUIJ	1777	CG	ARG	A	246	1	0	0	221	67	290	A	C
ATOM	1778	CD	ARG	A	246	20.574	-17.528	41.598	1.00	29.81		A	C
ANISOU	1778	CD	ARG	A	246	15256	5457	7745	-3138	-1525	513	A	C
SIGUIJ	1778	CD	ARG	A	246	1	0	0	221	67	290	A	C
ATOM	1779	NE	ARG	A	246	19.632	-17.212	40.533	1.00	30.72		A	N
ANISOU	1779	NE	ARG	A	246	13748	8730	5920	-1374	343	-74	A	N
SIGUIJ	1779	NE	ARG	A	246	1	0	0	221	57	289	A	N
ATOM	1780	CZ	ARG	A	246	18.420	-17.731	40.467	1.00	31.19		A	C
ANISOU	1780	CZ	ARG	A	246	13449	7175	6111	-710	314	-33	A	C
SIGUIJ	1780	CZ	ARG	A	246	1	0	0	221	67	290	A	C
ATOM	1781	NH1	ARG	A	246	18.022	-18.576	41.414	1.00	31.95		A	N

- 147 -

ANISOU	1781	NH1	ARG	A	246	8876	6548	5694	477	-548	-94	A	N
SIGUIJ	1781	NH1	ARG	A	246	1	0	0	221	57	289	A	N
ATOM	1782	NH2	ARG	A	246	17.641	-17.451	39.445	1.00	31.97		A	N
ANISOU	1782	NH2	ARG	A	246	13844	10033	6150	253	282	14	A	N
SIGUIJ	1782	NH2	ARG	A	246	1	0	0	221	57	289	A	N
ATOM	1783	C	ARG	A	246	21.456	-14.309	45.240	1.00	26.93		A	C
ANISOU	1783	C	ARG	A	246	11079	4350	5249	-654	62	-6	A	C
SIGUIJ	1783	C	ARG	A	246	1	0	0	221	67	290	A	C
ATOM	1784	O	ARG	A	246	20.426	-13.976	45.883	1.00	27.58		A	O
ANISOU	1784	O	ARG	A	246	11357	3254	6365	-1074	717	-122	A	O
SIGUIJ	1784	O	ARG	A	246	1	0	0	221	51	289	A	O
ATOM	1785	OXT	ARG	A	246	22.610	-14.430	45.737	1.00	27.58		A	O
ANISOU	1785	OXT	ARG	A	246	10736	6341	3324	-426	899	-68	A	O
SIGUIJ	1785	OXT	ARG	A	246	1	0	0	221	51	289	A	O
TER	1		ARG	A	246							A	
HETATM	1786	OH2	WAT	S	1	24.781	-18.805	43.324	1.00	6.43		S	O
ANISOU	1786	OH2	WAT	S	1	1173	478	1393	453	-95	153	S	O
SIGUIJ	1786	OH2	WAT	S	1	1	0	0	221	51	289	S	O
HETATM	1787	OH2	WAT	S	2	4.474	5.063	48.501	1.00	9.59		S	O
ANISOU	1787	OH2	WAT	S	2	1494	1440	1186	-3	68	-4	S	O
SIGUIJ	1787	OH2	WAT	S	2	1	0	0	221	51	289	S	O
HETATM	1788	OH2	WAT	S	3	15.552	4.965	51.375	1.00	9.82		S	O
ANISOU	1788	OH2	WAT	S	3	1326	1720	965	-369	-36	47	S	O
SIGUIJ	1788	OH2	WAT	S	3	1	0	0	221	51	289	S	O
HETATM	1789	OH2	WAT	S	4	8.858	8.363	37.689	1.00	10.14		S	O
ANISOU	1789	OH2	WAT	S	4	1162	1190	1480	-1	-18	0	S	O
SIGUIJ	1789	OH2	WAT	S	4	1	0	0	221	51	289	S	O
HETATM	1790	OH2	WAT	S	5	4.835	12.969	35.509	1.00	9.64		S	O
ANISOU	1790	OH2	WAT	S	5	1150	1216	1326	6	10	-1	S	O
SIGUIJ	1790	OH2	WAT	S	5	1	0	0	221	51	289	S	O
HETATM	1791	OH2	WAT	S	6	9.341	7.161	35.215	1.00	10.61		S	O
ANISOU	1791	OH2	WAT	S	6	1360	1161	1548	172	-2	1	S	O
SIGUIJ	1791	OH2	WAT	S	6	1	0	0	221	51	289	S	O
HETATM	1792	OH2	WAT	S	7	21.178	9.235	41.811	1.00	10.42		S	O
ANISOU	1792	OH2	WAT	S	7	1321	1163	1465	-114	0	0	S	O
SIGUIJ	1792	OH2	WAT	S	7	1	0	0	221	51	289	S	O
HETATM	1793	OH2	WAT	S	8	27.008	-0.037	40.833	1.00	10.86		S	O
ANISOU	1793	OH2	WAT	S	8	1231	1546	1387	-17	-262	-13	S	O
SIGUIJ	1793	OH2	WAT	S	8	1	0	0	221	51	289	S	O
HETATM	1794	OH2	WAT	S	9	5.785	12.849	42.062	1.00	12.65		S	O
ANISOU	1794	OH2	WAT	S	9	1871	1478	1529	256	11	6	S	O
SIGUIJ	1794	OH2	WAT	S	9	1	0	0	221	51	289	S	O
HETATM	1795	OH2	WAT	S	10	25.809	10.089	36.957	1.00	15.33		S	O
ANISOU	1795	OH2	WAT	S	10	1699	2881	1728	75	-357	-1336	S	O
SIGUIJ	1795	OH2	WAT	S	10	1	0	0	221	51	289	S	O
HETATM	1796	OH2	WAT	S	11	2.666	19.022	31.476	1.00	12.71		S	O
ANISOU	1796	OH2	WAT	S	11	2071	1417	1720	363	-179	-112	S	O
SIGUIJ	1796	OH2	WAT	S	11	1	0	0	221	51	289	S	O
HETATM	1797	OH2	WAT	S	12	4.947	3.340	30.044	1.00	15.53		S	O
ANISOU	1797	OH2	WAT	S	12	2033	1941	1721	-379	55	-55	S	O
SIGUIJ	1797	OH2	WAT	S	12	1	0	0	221	51	289	S	O

HETATM 1798	OH2 WAT S	13	13.902	-0.433	19.971	1.00	15.89	S	O
ANISOU 1798	OH2 WAT S	13	2696	1999	1557	-396	-358	132	S O
SIGUIJ 1798	OH2 WAT S	13	1	0	0	221	51	289	S O
HETATM 1799	OH2 WAT S	14	21.900	4.419	27.895	1.00	14.56	S	O
ANISOU 1799	OH2 WAT S	14	1917	1895	1557	-4	318	-35	S O
SIGUIJ 1799	OH2 WAT S	14	1	0	0	221	51	289	S O
HETATM 1800	OH2 WAT S	15	4.033	-1.934	40.854	1.00	13.63	S	O
ANISOU 1800	OH2 WAT S	15	2107	1352	1711	-295	383	-146	S O
SIGUIJ 1800	OH2 WAT S	15	1	0	0	221	51	289	S O
HETATM 1801	OH2 WAT S	16	22.787	8.096	47.811	1.00	13.85	S	O
ANISOU 1801	OH2 WAT S	16	2167	1748	1779	-701	88	-98	S O
SIGUIJ 1801	OH2 WAT S	16	1	0	0	221	51	289	S O
HETATM 1802	OH2 WAT S	17	19.119	8.947	33.793	1.00	11.52	S	O
ANISOU 1802	OH2 WAT S	17	1384	1642	1345	116	0	-1	S O
SIGUIJ 1802	OH2 WAT S	17	1	0	0	221	51	289	S O
HETATM 1803	OH2 WAT S	18	19.344	12.504	33.386	1.00	16.02	S	O
ANISOU 1803	OH2 WAT S	18	1916	2583	1861	-430	-3	-19	S O
SIGUIJ 1803	OH2 WAT S	18	1	0	0	221	51	289	S O
HETATM 1804	OH2 WAT S	19	-0.352	11.477	24.455	1.00	18.54	S	O
ANISOU 1804	OH2 WAT S	19	1767	2696	2887	698	-42	24	S O
SIGUIJ 1804	OH2 WAT S	19	1	0	0	221	51	289	S O
HETATM 1805	OH2 WAT S	20	2.073	15.464	31.901	1.00	14.28	S	O
ANISOU 1805	OH2 WAT S	20	1612	1934	1675	73	0	0	S O
SIGUIJ 1805	OH2 WAT S	20	1	0	0	221	51	289	S O
HETATM 1806	OH2 WAT S	21	1.417	20.832	35.391	1.00	14.41	S	O
ANISOU 1806	OH2 WAT S	21	1725	1350	1965	347	49	-56	S O
SIGUIJ 1806	OH2 WAT S	21	1	0	0	221	51	289	S O
HETATM 1807	OH2 WAT S	22	0.109	-4.786	46.294	1.00	24.10	S	O
ANISOU 1807	OH2 WAT S	22	3431	2852	2764	1027	639	544	S O
SIGUIJ 1807	OH2 WAT S	22	1	0	0	221	51	289	S O
HETATM 1808	OH2 WAT S	23	5.790	-5.960	50.260	1.00	19.83	S	O
ANISOU 1808	OH2 WAT S	23	2406	2846	1833	-107	-54	-1	S O
SIGUIJ 1808	OH2 WAT S	23	1	0	0	221	51	289	S O
HETATM 1809	OH2 WAT S	24	25.312	-2.553	46.116	1.00	18.04	S	O
ANISOU 1809	OH2 WAT S	24	1597	3326	2535	-196	-79	-12	S O
SIGUIJ 1809	OH2 WAT S	24	1	0	0	221	51	289	S O
HETATM 1810	OH2 WAT S	25	22.872	0.557	46.323	1.00	14.62	S	O
ANISOU 1810	OH2 WAT S	25	2126	1823	1778	50	-471	-49	S O
SIGUIJ 1810	OH2 WAT S	25	1	0	0	221	51	289	S O
HETATM 1811	OH2 WAT S	26	14.410	-1.902	23.124	1.00	14.14	S	O
ANISOU 1811	OH2 WAT S	26	1804	1976	1647	34	12	0	S O
SIGUIJ 1811	OH2 WAT S	26	1	0	0	221	51	289	S O
HETATM 1812	OH2 WAT S	27	13.755	18.203	27.222	1.00	15.46	S	O
ANISOU 1812	OH2 WAT S	27	2007	1739	1669	-309	-51	39	S O
SIGUIJ 1812	OH2 WAT S	27	1	0	0	221	51	289	S O
HETATM 1813	OH2 WAT S	28	10.386	11.514	25.133	1.00	13.16	S	O
ANISOU 1813	OH2 WAT S	28	1921	1495	1499	105	-40	-9	S O
SIGUIJ 1813	OH2 WAT S	28	1	0	0	221	51	289	S O
HETATM 1814	OH2 WAT S	29	6.031	24.167	32.208	1.00	17.37	S	O
ANISOU 1814	OH2 WAT S	29	2381	1712	2309	131	7	7	S O
SIGUIJ 1814	OH2 WAT S	29	1	0	0	221	51	289	S O

HETATM 1815	OH2 WAT S	30	15.062	16.500	25.595	1.00	15.15	S	O
ANISOU 1815	OH2 WAT S	30	2188	1659	1772	-298	-402	181	S O
SIGUIJ 1815	OH2 WAT S	30	1	0	0	221	51	289	S O
HETATM 1816	OH2 WAT S	31	10.624	25.090	41.301	1.00	21.60	S	O
ANISOU 1816	OH2 WAT S	31	2700	2652	3111	2	-47	-1	S O
SIGUIJ 1816	OH2 WAT S	31	1	0	0	221	51	289	S O
HETATM 1817	OH2 WAT S	32	2.808	3.760	50.728	1.00	21.37	S	O
ANISOU 1817	OH2 WAT S	32	2182	4019	2257	191	2	-2	S O
SIGUIJ 1817	OH2 WAT S	32	1	0	0	221	51	289	S O
HETATM 1818	OH2 WAT S	33	16.530	15.962	17.042	1.00	18.16	S	O
ANISOU 1818	OH2 WAT S	33	2819	2566	2015	-16	365	1	S O
SIGUIJ 1818	OH2 WAT S	33	1	0	0	221	51	289	S O
HETATM 1819	OH2 WAT S	34	5.585	-3.559	51.423	1.00	18.93	S	O
ANISOU 1819	OH2 WAT S	34	2586	3629	1722	-468	25	-3	S O
SIGUIJ 1819	OH2 WAT S	34	1	0	0	221	51	289	S O
HETATM 1820	OH2 WAT S	35	21.770	19.513	27.539	1.00	29.03	S	O
ANISOU 1820	OH2 WAT S	35	3155	4624	3657	-761	-2	-1	S O
SIGUIJ 1820	OH2 WAT S	35	1	0	0	221	51	289	S O
HETATM 1821	OH2 WAT S	36	13.143	20.680	26.241	1.00	16.62	S	O
ANISOU 1821	OH2 WAT S	36	1927	2059	1723	-15	-4	0	S O
SIGUIJ 1821	OH2 WAT S	36	1	0	0	221	51	289	S O
HETATM 1822	OH2 WAT S	37	-1.106	0.388	37.477	1.00	17.68	S	O
ANISOU 1822	OH2 WAT S	37	1816	1896	2547	-6	132	5	S O
SIGUIJ 1822	OH2 WAT S	37	1	0	0	221	51	289	S O
HETATM 1823	OH2 WAT S	38	11.350	17.436	28.280	1.00	16.01	S	O
ANISOU 1823	OH2 WAT S	38	2491	1513	1556	-353	-439	141	S O
SIGUIJ 1823	OH2 WAT S	38	1	0	0	221	51	289	S O
HETATM 1824	OH2 WAT S	39	23.589	-7.362	27.067	1.00	19.07	S	O
ANISOU 1824	OH2 WAT S	39	2961	2213	2026	1059	-110	-97	S O
SIGUIJ 1824	OH2 WAT S	39	1	0	0	221	51	289	S O
HETATM 1825	OH2 WAT S	40	19.429	-5.617	48.324	1.00	17.18	S	O
ANISOU 1825	OH2 WAT S	40	1922	2364	1913	272	-3	9	S O
SIGUIJ 1825	OH2 WAT S	40	1	0	0	221	51	289	S O
HETATM 1826	OH2 WAT S	41	9.243	16.808	19.409	1.00	17.74	S	O
ANISOU 1826	OH2 WAT S	41	2768	1982	2206	-321	-314	128	S O
SIGUIJ 1826	OH2 WAT S	41	1	0	0	221	51	289	S O
HETATM 1827	OH2 WAT S	42	8.159	-7.341	50.894	1.00	19.75	S	O
ANISOU 1827	OH2 WAT S	42	2982	2433	2025	-328	-349	137	S O
SIGUIJ 1827	OH2 WAT S	42	1	0	0	221	51	289	S O
HETATM 1828	OH2 WAT S	43	24.526	-15.892	42.152	1.00	19.49	S	O
ANISOU 1828	OH2 WAT S	43	3887	1662	2311	514	-288	-76	S O
SIGUIJ 1828	OH2 WAT S	43	1	0	0	221	51	289	S O
HETATM 1829	OH2 WAT S	44	15.071	0.754	16.873	1.00	23.52	S	O
ANISOU 1829	OH2 WAT S	44	2962	3462	2125	-799	-23	14	S O
SIGUIJ 1829	OH2 WAT S	44	1	0	0	221	51	289	S O
HETATM 1830	OH2 WAT S	45	1.623	1.863	38.928	1.00	19.00	S	O
ANISOU 1830	OH2 WAT S	45	2163	2827	2281	252	-5	5	S O
SIGUIJ 1830	OH2 WAT S	45	1	0	0	221	51	289	S O
HETATM 1831	OH2 WAT S	46	1.083	11.640	21.244	1.00	20.42	S	O
ANISOU 1831	OH2 WAT S	46	2274	2112	2993	9	-227	-8	S O
SIGUIJ 1831	OH2 WAT S	46	1	0	0	221	51	289	S O

- 150 -

HETATM 1832	OH2 WAT S	47	-0.976	-2.337	46.128	1.00	20.63	S	O
ANISOU 1832	OH2 WAT S	47	3091	1922	2501	-91	62	-7	S O
SIGUIJ 1832	OH2 WAT S	47	1	0	0	221	51	289	S O
HETATM 1833	OH2 WAT S	48	-1.532	3.190	35.408	1.00	18.27	S	O
ANISOU 1833	OH2 WAT S	48	2523	2040	2240	155	13	5	S O
SIGUIJ 1833	OH2 WAT S	48	1	0	0	221	51	289	S O
HETATM 1834	OH2 WAT S	49	10.268	17.052	21.922	1.00	15.72	S	O
ANISOU 1834	OH2 WAT S	49	2308	2056	1739	-85	-374	70	S O
SIGUIJ 1834	OH2 WAT S	49	1	0	0	221	51	289	S O
HETATM 1835	OH2 WAT S	50	13.003	-12.816	35.683	1.00	20.60	S	O
ANISOU 1835	OH2 WAT S	50	3574	2019	2471	410	-281	-85	S O
SIGUIJ 1835	OH2 WAT S	50	1	0	0	221	51	289	S O
HETATM 1836	OH2 WAT S	51	23.454	2.971	26.072	1.00	20.51	S	O
ANISOU 1836	OH2 WAT S	51	2369	2806	2279	322	-1	-9	S O
SIGUIJ 1836	OH2 WAT S	51	1	0	0	221	51	289	S O
HETATM 1837	OH2 WAT S	52	20.163	20.835	28.950	1.00	19.73	S	O
ANISOU 1837	OH2 WAT S	52	1831	2320	4535	-156	-248	-51	S O
SIGUIJ 1837	OH2 WAT S	52	1	0	0	221	51	289	S O
HETATM 1838	OH2 WAT S	53	18.260	4.832	31.017	1.00	16.47	S	O
ANISOU 1838	OH2 WAT S	53	1722	1988	1893	-20	-25	-2	S O
SIGUIJ 1838	OH2 WAT S	53	1	0	0	221	51	289	S O
HETATM 1839	OH2 WAT S	54	3.473	1.488	41.250	1.00	15.36	S	O
ANISOU 1839	OH2 WAT S	54	2028	1518	1768	207	409	148	S O
SIGUIJ 1839	OH2 WAT S	54	1	0	0	221	51	289	S O
HETATM 1840	OH2 WAT S	55	15.273	-6.972	16.641	1.00	26.28	S	O
ANISOU 1840	OH2 WAT S	55	4371	3181	2970	325	235	56	S O
SIGUIJ 1840	OH2 WAT S	55	1	0	0	221	51	289	S O
HETATM 1841	OH2 WAT S	56	4.097	22.217	31.651	1.00	18.32	S	O
ANISOU 1841	OH2 WAT S	56	2455	2059	2064	542	92	87	S O
SIGUIJ 1841	OH2 WAT S	56	1	0	0	221	51	289	S O
HETATM 1842	OH2 WAT S	57	17.859	16.386	19.498	1.00	16.54	S	O
ANISOU 1842	OH2 WAT S	57	2116	2397	1880	153	666	686	S O
SIGUIJ 1842	OH2 WAT S	57	1	0	0	221	51	289	S O
HETATM 1843	OH2 WAT S	58	3.109	-4.539	29.443	1.00	23.06	S	O
ANISOU 1843	OH2 WAT S	58	4608	2423	2713	35	808	13	S O
SIGUIJ 1843	OH2 WAT S	58	1	0	0	221	51	289	S O
HETATM 1844	OH2 WAT S	59	-2.538	7.349	37.099	1.00	19.86	S	O
ANISOU 1844	OH2 WAT S	59	2079	2504	2374	-596	170	179	S O
SIGUIJ 1844	OH2 WAT S	59	1	0	0	221	51	289	S O
HETATM 1845	OH2 WAT S	60	19.442	18.113	31.002	1.00	32.60	S	O
ANISOU 1845	OH2 WAT S	60	5406	6964	4243	11	-68	0	S O
SIGUIJ 1845	OH2 WAT S	60	1	0	0	221	51	289	S O
HETATM 1846	OH2 WAT S	62	4.758	-5.404	30.600	1.00	24.62	S	O
ANISOU 1846	OH2 WAT S	62	2411	3146	3148	-140	29	5	S O
SIGUIJ 1846	OH2 WAT S	62	1	0	0	221	51	289	S O
HETATM 1847	OH2 WAT S	63	11.832	20.865	35.382	1.00	22.71	S	O
ANISOU 1847	OH2 WAT S	63	3516	3544	2255	-2153	-517	619	S O
SIGUIJ 1847	OH2 WAT S	63	1	0	0	221	51	289	S O
HETATM 1848	OH2 WAT S	64	9.886	18.217	24.619	1.00	16.50	S	O
ANISOU 1848	OH2 WAT S	64	1996	1565	2669	-88	-22	1	S O
SIGUIJ 1848	OH2 WAT S	64	1	0	0	221	51	289	S O

HETATM 1849	OH2 WAT S	65	17.902	6.647	49.778	1.00	24.11	S	0	
ANISOU 1849	OH2 WAT S	65	5482	2700	2275	1291	-322	-128	S	0
SIGUIJ 1849	OH2 WAT S	65	1	0	0	221	51	289	S	0
HETATM 1850	OH2 WAT S	66	3.910	-12.994	45.112	1.00	25.58	S	0	
ANISOU 1850	OH2 WAT S	66	3118	1706	5270	346	177	10	S	0
SIGUIJ 1850	OH2 WAT S	66	1	0	0	221	51	289	S	0
HETATM 1851	OH2 WAT S	67	22.241	18.528	23.106	1.00	36.69	S	0	
ANISOU 1851	OH2 WAT S	67	3190	4405	5377	-5	117	0	S	0
SIGUIJ 1851	OH2 WAT S	67	1	0	0	221	50	289	S	0
HETATM 1852	OH2 WAT S	68	-3.052	4.627	30.518	1.00	29.98	S	0	
ANISOU 1852	OH2 WAT S	68	5803	8921	4571	-4535	-20	-291	S	0
SIGUIJ 1852	OH2 WAT S	68	1	0	0	221	50	289	S	0
HETATM 1853	OH2 WAT S	69	11.974	4.666	53.712	1.00	19.70	S	0	
ANISOU 1853	OH2 WAT S	69	3516	2783	2099	-55	627	-48	S	0
SIGUIJ 1853	OH2 WAT S	69	1	0	0	221	50	289	S	0
HETATM 1854	OH2 WAT S	70	27.570	-6.698	38.544	1.00	27.70	S	0	
ANISOU 1854	OH2 WAT S	70	3182	4401	3470	557	-13	13	S	0
SIGUIJ 1854	OH2 WAT S	70	1	0	0	221	50	289	S	0
HETATM 1855	OH2 WAT S	71	-4.331	5.240	42.885	1.00	28.52	S	0	
ANISOU 1855	OH2 WAT S	71	2834	3803	4481	311	1196	-245	S	0
SIGUIJ 1855	OH2 WAT S	71	1	0	0	221	50	289	S	0
HETATM 1856	OH2 WAT S	72	-1.710	13.915	40.211	1.00	20.83	S	0	
ANISOU 1856	OH2 WAT S	72	2239	2670	3203	92	-179	26	S	0
SIGUIJ 1856	OH2 WAT S	72	1	0	0	221	50	289	S	0
HETATM 1857	OH2 WAT S	73	10.041	9.287	14.686	1.00	23.91	S	0	
ANISOU 1857	OH2 WAT S	73	3206	4013	2440	-343	-149	13	S	0
SIGUIJ 1857	OH2 WAT S	73	1	0	0	221	50	289	S	0
HETATM 1858	OH2 WAT S	74	27.415	-2.814	43.051	1.00	27.21	S	0	
ANISOU 1858	OH2 WAT S	74	2485	2794	6783	45	-1456	25	S	0
SIGUIJ 1858	OH2 WAT S	74	1	0	0	221	50	289	S	0
HETATM 1859	OH2 WAT S	75	24.225	-9.992	45.971	1.00	26.90	S	0	
ANISOU 1859	OH2 WAT S	75	3281	2840	3048	63	5	1	S	0
SIGUIJ 1859	OH2 WAT S	75	1	0	0	221	50	289	S	0
HETATM 1860	OH2 WAT S	76	7.451	15.587	21.470	1.00	18.46	S	0	
ANISOU 1860	OH2 WAT S	76	3159	2145	1620	190	97	15	S	0
SIGUIJ 1860	OH2 WAT S	76	1	0	0	221	50	289	S	0
HETATM 1861	OH2 WAT S	77	23.079	9.316	51.019	1.00	31.41	S	0	
ANISOU 1861	OH2 WAT S	77	7206	2582	3785	-1401	1671	-513	S	0
SIGUIJ 1861	OH2 WAT S	77	1	0	0	221	50	289	S	0
HETATM 1862	OH2 WAT S	78	-3.582	2.710	41.526	1.00	23.55	S	0	
ANISOU 1862	OH2 WAT S	78	1798	3072	3934	-311	96	18	S	0
SIGUIJ 1862	OH2 WAT S	78	1	0	0	221	50	289	S	0
HETATM 1863	OH2 WAT S	79	9.534	-7.797	21.704	1.00	22.74	S	0	
ANISOU 1863	OH2 WAT S	79	2763	4898	1870	557	-89	-22	S	0
SIGUIJ 1863	OH2 WAT S	79	1	0	0	221	50	289	S	0
HETATM 1864	OH2 WAT S	80	2.971	16.345	14.945	1.00	30.00	S	0	
ANISOU 1864	OH2 WAT S	80	3558	4133	4282	33	-20	1	S	0
SIGUIJ 1864	OH2 WAT S	80	1	0	0	221	50	289	S	0
HETATM 1865	OH2 WAT S	81	20.740	-0.313	53.174	1.00	22.50	S	0	
ANISOU 1865	OH2 WAT S	81	3241	2437	2297	-463	-658	268	S	0
SIGUIJ 1865	OH2 WAT S	81	1	0	0	221	50	289	S	0

- 152 -

HETATM 1866	OH2 WAT S	82	22.883	-0.067	51.495	1.00	27.35	S	O
ANISOU 1866	OH2 WAT S	82	2443	3395	2903	-569	-66	-50	S O
SIGUIJ 1866	OH2 WAT S	82	1	0	0	221	50	289	S O
HETATM 1867	OH2 WAT S	84	-1.171	7.724	20.366	1.00	26.92	S	O
ANISOU 1867	OH2 WAT S	84	2753	5720	3097	344	-29	15	S O
SIGUIJ 1867	OH2 WAT S	84	1	0	0	221	50	289	S O
HETATM 1868	OH2 WAT S	85	3.600	5.966	14.955	1.00	25.46	S	O
ANISOU 1868	OH2 WAT S	85	3254	4647	1830	1465	-70	-46	S O
SIGUIJ 1868	OH2 WAT S	85	1	0	0	221	50	289	S O
HETATM 1869	OH2 WAT S	86	32.035	8.228	33.633	1.00	27.13	S	O
ANISOU 1869	OH2 WAT S	86	3557	4229	3973	10	-13	0	S O
SIGUIJ 1869	OH2 WAT S	86	1	0	0	221	50	289	S O
HETATM 1870	OH2 WAT S	87	10.744	24.913	28.060	1.00	29.54	S	O
ANISOU 1870	OH2 WAT S	87	5299	3251	4261	-984	-31	20	S O
SIGUIJ 1870	OH2 WAT S	87	1	0	0	221	50	289	S O
HETATM 1871	OH2 WAT S	88	20.299	-8.109	23.247	1.00	24.84	S	O
ANISOU 1871	OH2 WAT S	88	4326	2753	2982	924	61	34	S O
SIGUIJ 1871	OH2 WAT S	88	1	0	0	221	50	289	S O
HETATM 1872	OH2 WAT S	89	13.944	8.215	13.170	1.00	22.01	S	O
ANISOU 1872	OH2 WAT S	89	2965	4174	1733	-774	-109	8	S O
SIGUIJ 1872	OH2 WAT S	89	1	0	0	221	50	289	S O
HETATM 1873	OH2 WAT S	90	18.818	15.142	31.512	1.00	19.19	S	O
ANISOU 1873	OH2 WAT S	90	2253	3049	1644	-56	53	-1	S O
SIGUIJ 1873	OH2 WAT S	90	1	0	0	221	50	289	S O
HETATM 1874	OH2 WAT S	91	10.160	14.327	23.218	1.00	17.24	S	O
ANISOU 1874	OH2 WAT S	91	2285	2044	2240	-28	0	0	S O
SIGUIJ 1874	OH2 WAT S	91	1	0	0	221	50	289	S O
HETATM 1875	OH2 WAT S	92	19.051	2.536	18.790	1.00	22.31	S	O
ANISOU 1875	OH2 WAT S	92	3789	2407	1997	-450	605	-159	S O
SIGUIJ 1875	OH2 WAT S	92	1	0	0	221	50	289	S O
HETATM 1876	OH2 WAT S	93	18.311	15.147	36.811	1.00	23.61	S	O
ANISOU 1876	OH2 WAT S	93	2272	2201	4255	-624	-97	10	S O
SIGUIJ 1876	OH2 WAT S	93	1	0	0	221	50	289	S O
HETATM 1877	OH2 WAT S	94	22.759	11.550	16.574	1.00	24.71	S	O
ANISOU 1877	OH2 WAT S	94	3729	2674	3069	-99	46	-6	S O
SIGUIJ 1877	OH2 WAT S	94	1	0	0	221	50	289	S O
HETATM 1878	OH2 WAT S	95	4.625	-0.920	52.854	1.00	25.59	S	O
ANISOU 1878	OH2 WAT S	95	2602	6051	2740	1218	-27	59	S O
SIGUIJ 1878	OH2 WAT S	95	1	0	0	221	50	289	S O
HETATM 1879	OH2 WAT S	96	28.207	-6.456	34.713	1.00	24.66	S	O
ANISOU 1879	OH2 WAT S	96	2941	4153	8749	51	-1299	59	S O
SIGUIJ 1879	OH2 WAT S	96	1	0	0	221	50	289	S O
HETATM 1880	OH2 WAT S	97	22.260	-8.621	24.974	1.00	25.76	S	O
ANISOU 1880	OH2 WAT S	97	4216	2047	2584	300	-177	-28	S O
SIGUIJ 1880	OH2 WAT S	97	1	0	0	221	50	289	S O
HETATM 1881	OH2 WAT S	98	29.377	1.424	35.670	1.00	28.05	S	O
ANISOU 1881	OH2 WAT S	98	2756	3143	5489	-29	-1115	-15	S O
SIGUIJ 1881	OH2 WAT S	98	1	0	0	221	50	289	S O
HETATM 1882	OH2 WAT S	99	7.978	26.620	35.039	1.00	27.96	S	O
ANISOU 1882	OH2 WAT S	99	4287	3004	3516	776	23	16	S O
SIGUIJ 1882	OH2 WAT S	99	1	0	0	221	50	289	S O

HETATM 1883	OH2 WAT S 100	22.630	9.441	32.458	1.00	20.69	S	O
ANISOU 1883	OH2 WAT S 100	2311	2591	2466	-17	0	0	S O
SIGUIJ 1883	OH2 WAT S 100	1	0	0	221	50	289	S O
HETATM 1884	OH2 WAT S 101	0.044	-0.604	40.115	1.00	23.48	S	O
ANISOU 1884	OH2 WAT S 101	4663	1966	3220	908	112	51	S O
SIGUIJ 1884	OH2 WAT S 101	1	0	0	221	50	289	S O
HETATM 1885	OH2 WAT S 102	10.586	-14.310	36.023	1.00	32.88	S	O
ANISOU 1885	OH2 WAT S 102	3736	3334	5679	13	374	0	S O
SIGUIJ 1885	OH2 WAT S 102	1	0	0	221	50	289	S O
HETATM 1886	OH2 WAT S 103	-0.807	17.916	30.201	1.00	25.73	S	O
ANISOU 1886	OH2 WAT S 103	2592	3349	4155	480	117	-46	S O
SIGUIJ 1886	OH2 WAT S 103	1	0	0	221	50	289	S O
HETATM 1887	OH2 WAT S 104	26.760	-8.913	35.163	1.00	27.66	S	O
ANISOU 1887	OH2 WAT S 104	2555	3497	5031	791	-387	171	S O
SIGUIJ 1887	OH2 WAT S 104	1	0	0	221	50	289	S O
HETATM 1888	OH2 WAT S 105	3.515	9.065	11.759	1.00	30.62	S	O
ANISOU 1888	OH2 WAT S 105	3112	4092	5105	142	389	-40	S O
SIGUIJ 1888	OH2 WAT S 105	1	0	0	221	50	289	S O
HETATM 1889	OH2 WAT S 106	6.014	6.816	50.133	1.00	22.77	S	O
ANISOU 1889	OH2 WAT S 106	2984	3487	2553	-65	64	-1	S O
SIGUIJ 1889	OH2 WAT S 106	1	0	0	221	50	289	S O
HETATM 1890	OH2 WAT S 107	2.535	0.919	21.717	1.00	30.69	S	O
ANISOU 1890	OH2 WAT S 107	2951	3619	3870	88	-46	5	S O
SIGUIJ 1890	OH2 WAT S 107	1	0	0	221	50	289	S O
HETATM 1891	OH2 WAT S 108	8.473	5.739	51.277	1.00	27.33	S	O
ANISOU 1891	OH2 WAT S 108	3033	2855	4859	3	610	12	S O
SIGUIJ 1891	OH2 WAT S 108	1	0	0	221	50	289	S O
HETATM 1892	OH2 WAT S 109	27.074	-11.879	44.074	1.00	31.97	S	O
ANISOU 1892	OH2 WAT S 109	6557	3884	8374	-192	1	0	S O
SIGUIJ 1892	OH2 WAT S 109	1	0	0	221	50	289	S O
HETATM 1893	OH2 WAT S 110	26.737	-0.258	45.534	1.00	24.30	S	O
ANISOU 1893	OH2 WAT S 110	2819	3015	3951	8	-466	17	S O
SIGUIJ 1893	OH2 WAT S 110	1	0	0	221	50	289	S O
HETATM 1894	OH2 WAT S 111	23.962	16.801	23.275	1.00	30.34	S	O
ANISOU 1894	OH2 WAT S 111	4010	6257	3100	-2485	-7	57	S O
SIGUIJ 1894	OH2 WAT S 111	1	0	0	221	50	289	S O
HETATM 1895	OH2 WAT S 112	16.366	-14.016	33.250	1.00	31.21	S	O
ANISOU 1895	OH2 WAT S 112	6815	4084	4423	-1632	-105	59	S O
SIGUIJ 1895	OH2 WAT S 112	1	0	0	221	50	289	S O
HETATM 1896	OH2 WAT S 113	31.549	3.790	28.438	1.00	29.85	S	O
ANISOU 1896	OH2 WAT S 113	2361	5373	3457	-594	487	160	S O
SIGUIJ 1896	OH2 WAT S 113	1	0	0	221	50	289	S O
HETATM 1897	OH2 WAT S 114	29.814	0.473	25.485	1.00	33.55	S	O
ANISOU 1897	OH2 WAT S 114	3467	6416	4692	1851	324	-280	S O
SIGUIJ 1897	OH2 WAT S 114	1	0	0	221	50	289	S O
HETATM 1898	OH2 WAT S 115	15.127	12.287	45.057	1.00	20.18	S	O
ANISOU 1898	OH2 WAT S 115	2358	2101	2652	-13	-4	0	S O
SIGUIJ 1898	OH2 WAT S 115	1	0	0	221	50	289	S O
HETATM 1899	OH2 WAT S 116	25.755	-5.365	27.616	1.00	27.02	S	O
ANISOU 1899	OH2 WAT S 116	3859	4146	2556	39	281	-27	S O
SIGUIJ 1899	OH2 WAT S 116	1	0	0	221	50	289	S O

HETATM 1900	OH2 WAT S 117	2.661	19.940	22.804	1.00	28.19	S	O
ANISOU 1900	OH2 WAT S 117	2612	4405	4384	427	-139	32	S O
SIGUIJ 1900	OH2 WAT S 117	1	0	0	221	50	289	S O
HETATM 1901	OH2 WAT S 118	13.816	10.501	27.860	1.00	18.47	S	O
ANISOU 1901	OH2 WAT S 118	2713	2171	1862	-163	9	-2	S O
SIGUIJ 1901	OH2 WAT S 118	1	0	0	221	50	289	S O
HETATM 1902	OH2 WAT S 119	26.259	-0.965	25.298	1.00	33.83	S	O
ANISOU 1902	OH2 WAT S 119	3054	7527	4940	-751	504	127	S O
SIGUIJ 1902	OH2 WAT S 119	1	0	0	221	50	289	S O
HETATM 1903	OH2 WAT S 120	11.223	23.743	16.870	1.00	33.09	S	O
ANISOU 1903	OH2 WAT S 120	6540	2820	4675	-1098	-79	33	S O
SIGUIJ 1903	OH2 WAT S 120	1	0	0	221	50	289	S O
HETATM 1904	OH2 WAT S 121	-0.480	7.799	26.995	1.00	26.19	S	O
ANISOU 1904	OH2 WAT S 121	3214	4175	2071	163	-451	-7	S O
SIGUIJ 1904	OH2 WAT S 121	1	0	0	221	50	289	S O
HETATM 1905	OH2 WAT S 122	2.362	15.205	44.578	1.00	27.82	S	O
ANISOU 1905	OH2 WAT S 122	5512	2305	4024	-230	173	-21	S O
SIGUIJ 1905	OH2 WAT S 122	1	0	0	221	50	289	S O
HETATM 1906	OH2 WAT S 123	19.715	7.754	50.940	1.00	25.17	S	O
ANISOU 1906	OH2 WAT S 123	3519	3788	2747	-14	107	1	S O
SIGUIJ 1906	OH2 WAT S 123	1	0	0	221	50	289	S O
HETATM 1907	OH2 WAT S 124	2.758	18.725	16.752	1.00	34.08	S	O
ANISOU 1907	OH2 WAT S 124	5908	6912	4121	12	-107	1	S O
SIGUIJ 1907	OH2 WAT S 124	1	0	0	221	50	289	S O
HETATM 1908	OH2 WAT S 125	-4.642	-10.188	42.639	1.00	29.52	S	O
ANISOU 1908	OH2 WAT S 125	2512	4249	9593	-641	1917	396	S O
SIGUIJ 1908	OH2 WAT S 125	1	0	0	221	50	289	S O
HETATM 1909	OH2 WAT S 126	1.240	18.510	38.272	1.00	27.99	S	O
ANISOU 1909	OH2 WAT S 126	4172	2933	2552	-57	889	-32	S O
SIGUIJ 1909	OH2 WAT S 126	1	0	0	221	50	289	S O
HETATM 1910	OH2 WAT S 127	3.642	-7.543	31.958	1.00	27.77	S	O
ANISOU 1910	OH2 WAT S 127	3242	3568	3779	-1225	-131	-168	S O
SIGUIJ 1910	OH2 WAT S 127	1	0	0	221	50	289	S O
HETATM 1911	OH2 WAT S 128	-2.003	-7.145	36.395	1.00	36.40	S	O
ANISOU 1911	OH2 WAT S 128	4151	5058	5863	-12	49	0	S O
SIGUIJ 1911	OH2 WAT S 128	1	0	0	221	50	289	S O
HETATM 1912	OH2 WAT S 129	15.145	-8.406	27.073	1.00	37.08	S	O
ANISOU 1912	OH2 WAT S 129	6125	6305	3951	3848	-145	-185	S O
SIGUIJ 1912	OH2 WAT S 129	1	0	0	221	50	289	S O
HETATM 1913	OH2 WAT S 130	27.252	15.441	28.847	1.00	38.58	S	O
ANISOU 1913	OH2 WAT S 130	7244	4494	10213	95	48	0	S O
SIGUIJ 1913	OH2 WAT S 130	1	0	0	221	50	289	S O
HETATM 1914	OH2 WAT S 131	24.590	-4.578	24.926	1.00	35.10	S	O
ANISOU 1914	OH2 WAT S 131	3086	6214	4364	997	45	-23	S O
SIGUIJ 1914	OH2 WAT S 131	1	0	0	221	50	289	S O
HETATM 1915	OH2 WAT S 132	26.779	10.309	19.245	1.00	31.56	S	O
ANISOU 1915	OH2 WAT S 132	3055	7679	5170	1664	139	-74	S O
SIGUIJ 1915	OH2 WAT S 132	1	0	0	221	50	289	S O
HETATM 1916	OH2 WAT S 133	0.533	-7.125	45.253	1.00	27.88	S	O
ANISOU 1916	OH2 WAT S 133	2994	2259	3593	-212	48	3	S O
SIGUIJ 1916	OH2 WAT S 133	1	0	0	221	50	289	S O

HETATM 1917	OH2 WAT S 134	16.753	-10.311	29.928	1.00	34.28		S	0
ANISOU 1917	OH2 WAT S 134	4945	7839	2779	-415	-1740	-230	S	0
SIGUIJ 1917	OH2 WAT S 134	1	0	0	221	50	289	S	0
HETATM 1918	OH2 WAT S 135	10.504	-11.853	51.167	1.00	25.02		S	0
ANISOU 1918	OH2 WAT S 135	5148	2692	3373	-1536	-817	494	S	0
SIGUIJ 1918	OH2 WAT S 135	1	0	0	221	50	289	S	0
HETATM 1919	OH2 WAT S 136	15.253	19.090	16.547	1.00	35.54		S	0
ANISOU 1919	OH2 WAT S 136	6539	6105	2770	13	478	5	S	0
SIGUIJ 1919	OH2 WAT S 136	1	0	0	221	50	289	S	0
HETATM 1920	OH2 WAT S 137	24.070	15.576	28.300	1.00	39.96		S	0
ANISOU 1920	OH2 WAT S 137	6082	3159	8207	150	-17	0	S	0
SIGUIJ 1920	OH2 WAT S 137	1	0	0	221	50	289	S	0
HETATM 1921	OH2 WAT S 138	19.951	-7.890	49.428	1.00	37.63		S	0
ANISOU 1921	OH2 WAT S 138	6820	3803	3909	1919	69	39	S	0
SIGUIJ 1921	OH2 WAT S 138	1	0	0	221	50	289	S	0
HETATM 1922	OH2 WAT S 139	9.825	-10.874	30.024	1.00	24.32		S	0
ANISOU 1922	OH2 WAT S 139	4437	1727	3182	-42	382	-3	S	0
SIGUIJ 1922	OH2 WAT S 139	1	0	0	221	50	289	S	0
HETATM 1923	OH2 WAT S 140	14.562	14.178	16.243	1.00	30.34		S	0
ANISOU 1923	OH2 WAT S 140	5368	3719	3000	-1110	560	-266	S	0
SIGUIJ 1923	OH2 WAT S 140	1	0	0	221	50	289	S	0
HETATM 1924	OH2 WAT S 141	9.307	13.549	16.592	1.00	30.74		S	0
ANISOU 1924	OH2 WAT S 141	4656	5144	4124	48	-3	0	S	0
SIGUIJ 1924	OH2 WAT S 141	1	0	0	221	49	289	S	0
HETATM 1925	OH2 WAT S 142	0.546	21.352	27.878	1.00	40.45		S	0
ANISOU 1925	OH2 WAT S 142	9491	3460	8370	1133	-6	-3	S	0
SIGUIJ 1925	OH2 WAT S 142	1	0	0	221	49	289	S	0
HETATM 1926	OH2 WAT S 143	-1.885	14.390	46.062	1.00	29.21		S	0
ANISOU 1926	OH2 WAT S 143	3516	3899	2996	38	39	-1	S	0
SIGUIJ 1926	OH2 WAT S 143	1	0	0	221	49	289	S	0
HETATM 1927	OH2 WAT S 144	29.346	-6.151	41.426	1.00	41.53		S	0
ANISOU 1927	OH2 WAT S 144	3285	8590	8848	929	1170	-193	S	0
SIGUIJ 1927	OH2 WAT S 144	1	0	0	221	49	289	S	0
HETATM 1928	OH2 WAT S 145	29.449	-1.201	37.125	1.00	33.69		S	0
ANISOU 1928	OH2 WAT S 145	2299	13945	5181	1681	-132	46	S	0
SIGUIJ 1928	OH2 WAT S 145	1	0	0	221	49	289	S	0
HETATM 1929	OH2 WAT S 146	25.252	0.908	49.035	1.00	29.41		S	0
ANISOU 1929	OH2 WAT S 146	2514	6062	4510	1324	-138	67	S	0
SIGUIJ 1929	OH2 WAT S 146	1	0	0	221	49	289	S	0
HETATM 1930	OH2 WAT S 147	2.465	1.781	52.221	1.00	25.79		S	0
ANISOU 1930	OH2 WAT S 147	4627	3968	2707	6	-449	-2	S	0
SIGUIJ 1930	OH2 WAT S 147	1	0	0	221	49	289	S	0
HETATM 1931	OH2 WAT S 148	-4.135	10.402	43.978	1.00	33.44		S	0
ANISOU 1931	OH2 WAT S 148	3655	7568	7772	2975	-323	200	S	0
SIGUIJ 1931	OH2 WAT S 148	1	0	0	221	49	289	S	0
HETATM 1932	OH2 WAT S 149	17.550	-1.360	16.721	1.00	26.03		S	0
ANISOU 1932	OH2 WAT S 149	5814	3014	2319	293	1493	103	S	0
SIGUIJ 1932	OH2 WAT S 149	1	0	0	221	49	289	S	0
HETATM 1933	OH2 WAT S 150	10.868	14.790	18.228	1.00	26.66		S	0
ANISOU 1933	OH2 WAT S 150	3764	3047	2718	112	-180	-23	S	0
SIGUIJ 1933	OH2 WAT S 150	1	0	0	221	49	289	S	0

HETATM 1934	OH2 WAT S 151	1.010	-10.401	38.943	1.00	40.44	S	O
ANISOU 1934	OH2 WAT S 151	2459	2034	3405	-95	-126	4	S O
SIGUIJ 1934	OH2 WAT S 151	1	0	0	221	49	289	S O
HETATM 1935	OH2 WAT S 152	30.616	-13.418	38.615	1.00	34.81		S O
ANISOU 1935	OH2 WAT S 152	8399	3393	10988	-717	-27	-2	S O
SIGUIJ 1935	OH2 WAT S 152	1	0	0	221	49	289	S O
HETATM 1936	OH2 WAT S 153	24.409	3.497	23.403	1.00	40.31		S O
ANISOU 1936	OH2 WAT S 153	5220	10991	3367	4730	-16	-70	S O
SIGUIJ 1936	OH2 WAT S 153	1	0	0	221	49	289	S O
HETATM 1937	OH2 WAT S 154	21.557	7.062	27.654	1.00	28.84		S O
ANISOU 1937	OH2 WAT S 154	3016	2992	2883	1	5	0	S O
SIGUIJ 1937	OH2 WAT S 154	1	0	0	221	49	289	S O
HETATM 1938	OH2 WAT S 155	20.517	18.633	25.054	1.00	30.26		S O
ANISOU 1938	OH2 WAT S 155	2750	4489	4630	-321	-103	-18	S O
SIGUIJ 1938	OH2 WAT S 155	1	0	0	221	49	289	S O
HETATM 1939	OH2 WAT S 156	32.648	4.297	32.274	1.00	37.94		S O
ANISOU 1939	OH2 WAT S 156	3269	8129	5917	181	-262	14	S O
SIGUIJ 1939	OH2 WAT S 156	1	0	0	221	49	289	S O
HETATM 1940	OH2 WAT S 157	21.979	13.016	14.583	1.00	35.88		S O
ANISOU 1940	OH2 WAT S 157	9146	5044	3682	317	1657	104	S O
SIGUIJ 1940	OH2 WAT S 157	1	0	0	221	49	289	S O
HETATM 1941	OH2 WAT S 158	6.095	-7.842	18.423	1.00	34.85		S O
ANISOU 1941	OH2 WAT S 158	12566	3609	4280	163	-318	-6	S O
SIGUIJ 1941	OH2 WAT S 158	1	0	0	221	49	289	S O
HETATM 1942	OH2 WAT S 159	26.591	-4.927	36.071	1.00	29.60		S O
ANISOU 1942	OH2 WAT S 159	4378	4005	3346	-44	-89	7	S O
SIGUIJ 1942	OH2 WAT S 159	1	0	0	221	49	289	S O
HETATM 1943	OH2 WAT S 160	5.561	0.764	54.769	1.00	30.77		S O
ANISOU 1943	OH2 WAT S 160	2598	3822	2614	932	-4	10	S O
SIGUIJ 1943	OH2 WAT S 160	1	0	0	221	49	289	S O
HETATM 1944	OH2 WAT S 161	10.527	25.609	25.108	1.00	34.60		S O
ANISOU 1944	OH2 WAT S 161	3770	3075	7386	10	-1730	-25	S O
SIGUIJ 1944	OH2 WAT S 161	1	0	0	221	49	289	S O
HETATM 1945	OH2 WAT S 162	3.585	27.472	24.727	1.00	37.60		S O
ANISOU 1945	OH2 WAT S 162	5160	6221	7339	-23	-124	-2	S O
SIGUIJ 1945	OH2 WAT S 162	1	0	0	221	49	289	S O
HETATM 1946	OH2 WAT S 163	-3.314	-0.083	44.414	1.00	33.32		S O
ANISOU 1946	OH2 WAT S 163	2250	7193	5469	904	-129	29	S O
SIGUIJ 1946	OH2 WAT S 163	1	0	0	221	49	289	S O
HETATM 1947	OH2 WAT S 165	20.321	8.942	48.820	1.00	9.64		S O
ANISOU 1947	OH2 WAT S 165	3678	3212	2252	-60	140	-12	S O
SIGUIJ 1947	OH2 WAT S 165	1	0	0	221	49	289	S O
HETATM 1948	OH2 WAT S 166	16.533	7.447	53.478	1.00	9.64		S O
ANISOU 1948	OH2 WAT S 166	3421	5345	3498	-1663	12	27	S O
SIGUIJ 1948	OH2 WAT S 166	1	0	0	221	49	289	S O
HETATM 1949	OH2 WAT S 167	6.384	13.286	44.630	1.00	9.64		S O
ANISOU 1949	OH2 WAT S 167	4095	2912	2148	1211	-629	-376	S O
SIGUIJ 1949	OH2 WAT S 167	1	0	0	221	49	289	S O
HETATM 1950	OH2 WAT S 168	15.586	14.651	46.353	1.00	9.64		S O
ANISOU 1950	OH2 WAT S 168	5956	2789	3140	-1976	788	-443	S O
SIGUIJ 1950	OH2 WAT S 168	1	0	0	221	49	289	S O

- 157 -

HETATM 1951	OH2 WAT S 169	17.717	14.045	44.656	1.00	9.64	S	O
ANISOU 1951	OH2 WAT S 169	2696	3803	3222	-469	-12	-7	S O
SIGUIJ 1951	OH2 WAT S 169	1	0	0	221	49	289	S O
HETATM 1952	OH2 WAT S 170	11.975	11.416	52.995	1.00	9.64	S	O
ANISOU 1952	OH2 WAT S 170	4141	3516	3042	-26	-61	2	S O
SIGUIJ 1952	OH2 WAT S 170	1	0	0	221	49	289	S O
HETATM 1953	OH2 WAT S 171	-8.832	4.580	35.128	1.00	9.64	S	O
ANISOU 1953	OH2 WAT S 171	3442	5617	4705	1720	401	-335	S O
SIGUIJ 1953	OH2 WAT S 171	1	0	0	221	49	289	S O
HETATM 1954	OH2 WAT S 172	-4.277	-4.060	36.933	1.00	9.64	S	O
ANISOU 1954	OH2 WAT S 172	3880	2781	5563	-10	-45	0	S O
SIGUIJ 1954	OH2 WAT S 172	1	0	0	221	49	289	S O
HETATM 1955	OH2 WAT S 173	-0.557	-0.253	30.091	1.00	9.64	S	O
ANISOU 1955	OH2 WAT S 173	4876	8675	2710	779	-714	-21	S O
SIGUIJ 1955	OH2 WAT S 173	1	0	0	221	49	289	S O
HETATM 1956	OH2 WAT S 174	-1.005	2.812	28.885	1.00	9.64	S	O
ANISOU 1956	OH2 WAT S 174	2929	6755	3085	-252	3	2	S O
SIGUIJ 1956	OH2 WAT S 174	1	0	0	221	49	289	S O
HETATM 1957	OH2 WAT S 175	2.618	2.639	29.286	1.00	9.64	S	O
ANISOU 1957	OH2 WAT S 175	2571	3346	2427	-193	-6	4	S O
SIGUIJ 1957	OH2 WAT S 175	1	0	0	221	49	289	S O
HETATM 1958	OH2 WAT S 176	-6.600	7.509	35.036	1.00	9.64	S	O
ANISOU 1958	OH2 WAT S 176	2597	3342	6658	-80	845	24	S O
SIGUIJ 1958	OH2 WAT S 176	1	0	0	221	49	289	S O
HETATM 1959	OH2 WAT S 177	-0.477	17.088	36.911	1.00	9.64	S	O
ANISOU 1959	OH2 WAT S 177	2189	3076	4218	-3	153	0	S O
SIGUIJ 1959	OH2 WAT S 177	1	0	0	221	49	289	S O
HETATM 1960	OH2 WAT S 178	-1.260	11.427	27.528	1.00	9.64	S	O
ANISOU 1960	OH2 WAT S 178	2773	4969	3125	419	14	-9	S O
SIGUIJ 1960	OH2 WAT S 178	1	0	0	221	49	289	S O
HETATM 1961	OH2 WAT S 179	-0.390	18.740	34.942	1.00	9.64	S	O
ANISOU 1961	OH2 WAT S 179	2232	2541	2884	-14	9	0	S O
SIGUIJ 1961	OH2 WAT S 179	1	0	0	221	49	289	S O
HETATM 1962	OH2 WAT S 180	-3.823	8.680	29.774	1.00	9.64	S	O
ANISOU 1962	OH2 WAT S 180	5318	4474	2845	-21	-757	15	S O
SIGUIJ 1962	OH2 WAT S 180	1	0	0	221	49	289	S O
HETATM 1963	OH2 WAT S 181	-0.781	16.019	42.114	1.00	9.64	S	O
ANISOU 1963	OH2 WAT S 181	1433	1370	1665	12	407	-109	S O
SIGUIJ 1963	OH2 WAT S 181	1	0	0	221	49	289	S O
HETATM 1964	OH2 WAT S 182	-1.833	14.757	37.559	1.00	9.64	S	O
ANISOU 1964	OH2 WAT S 182	2296	2695	3332	99	-89	14	S O
SIGUIJ 1964	OH2 WAT S 182	1	0	0	221	49	289	S O
HETATM 1965	OH2 WAT S 183	0.603	17.701	32.591	1.00	9.64	S	O
ANISOU 1965	OH2 WAT S 183	2203	1894	3016	325	-284	-36	S O
SIGUIJ 1965	OH2 WAT S 183	1	0	0	221	49	289	S O
HETATM 1966	OH2 WAT S 184	25.865	12.353	35.363	1.00	16.02	S	O
ANISOU 1966	OH2 WAT S 184	3641	5196	6549	185	434	-39	S O
SIGUIJ 1966	OH2 WAT S 184	1	0	0	221	49	289	S O
HETATM 1967	OH2 WAT S 185	21.844	14.030	33.136	1.00	16.02	S	O
ANISOU 1967	OH2 WAT S 185	4516	4386	4212	-31	3	-1	S O
SIGUIJ 1967	OH2 WAT S 185	1	0	0	221	49	289	S O

HETATM 1968	OH2 WAT S 186	-2.383	11.857	46.800	1.00	21.37	S	O
ANISOU 1968	OH2 WAT S 186	4014	3408	2846	-9	1102	-20	S O
SIGUIJ 1968	OH2 WAT S 186	1	0	0	221	49	289	S O
HETATM 1969	OH2 WAT S 187	-0.771	10.542	48.286	1.00	21.37	S	O
ANISOU 1969	OH2 WAT S 187	3450	4573	5571	570	2454	-643	S O
SIGUIJ 1969	OH2 WAT S 187	1	0	0	221	49	289	S O
HETATM 1970	OH2 WAT S 188	2.336	12.093	46.980	1.00	21.37	S	O
ANISOU 1970	OH2 WAT S 188	7535	3031	4855	2228	335	199	S O
SIGUIJ 1970	OH2 WAT S 188	1	0	0	221	49	289	S O
HETATM 1971	OH2 WAT S 189	5.725	8.697	49.067	1.00	21.37	S	O
ANISOU 1971	OH2 WAT S 189	4279	5874	5746	223	-22	3	S O
SIGUIJ 1971	OH2 WAT S 189	1	0	0	221	49	289	S O
HETATM 1972	OH2 WAT S 190	0.753	1.655	54.193	1.00	21.37	S	O
ANISOU 1972	OH2 WAT S 190	3706	5034	3101	120	-22	-1	S O
SIGUIJ 1972	OH2 WAT S 190	1	0	0	221	49	289	S O
HETATM 1973	OH2 WAT S 191	19.317	3.227	56.607	1.00	17.18	S	O
ANISOU 1973	OH2 WAT S 191	7181	7861	2353	7	481	-2	S O
SIGUIJ 1973	OH2 WAT S 191	1	0	0	221	49	289	S O
HETATM 1974	OH2 WAT S 192	26.731	-5.241	46.724	1.00	17.18	S	O
ANISOU 1974	OH2 WAT S 192	2724	6561	5059	995	-414	135	S O
SIGUIJ 1974	OH2 WAT S 192	1	0	0	221	49	289	S O
HETATM 1975	OH2 WAT S 193	18.256	-2.444	55.645	1.00	17.18	S	O
ANISOU 1975	OH2 WAT S 193	1320	2103	1091	-559	-7	29	S O
SIGUIJ 1975	OH2 WAT S 193	1	0	0	221	49	289	S O
HETATM 1976	OH2 WAT S 194	20.237	-5.102	53.796	1.00	17.18	S	O
ANISOU 1976	OH2 WAT S 194	3347	3939	3483	-19	1	0	S O
SIGUIJ 1976	OH2 WAT S 194	1	0	0	221	49	289	S O
HETATM 1977	OH2 WAT S 195	21.094	-6.781	51.353	1.00	17.18	S	O
ANISOU 1977	OH2 WAT S 195	7088	4678	4621	334	-2	0	S O
SIGUIJ 1977	OH2 WAT S 195	1	0	0	221	49	289	S O
HETATM 1978	OH2 WAT S 196	21.448	-10.306	48.745	1.00	17.18	S	O
ANISOU 1978	OH2 WAT S 196	4343	3129	4025	247	1	1	S O
SIGUIJ 1978	OH2 WAT S 196	1	0	0	221	49	289	S O
HETATM 1979	OH2 WAT S 197	2.024	-13.128	46.308	1.00	25.58	S	O
ANISOU 1979	OH2 WAT S 197	9217	4744	3533	-710	445	-62	S O
SIGUIJ 1979	OH2 WAT S 197	1	0	0	221	49	289	S O
HETATM 1980	OH2 WAT S 198	-1.668	-8.796	47.162	1.00	25.58	S	O
ANISOU 1980	OH2 WAT S 198	6335	5284	3131	-6	-1760	8	S O
SIGUIJ 1980	OH2 WAT S 198	1	0	0	221	49	289	S O
HETATM 1981	OH2 WAT S 199	6.598	-13.515	48.535	1.00	25.58	S	O
ANISOU 1981	OH2 WAT S 199	5435	4232	7877	-124	154	-4	S O
SIGUIJ 1981	OH2 WAT S 199	1	0	0	221	49	289	S O
HETATM 1982	OH2 WAT S 200	6.414	-10.714	49.635	1.00	25.58	S	O
ANISOU 1982	OH2 WAT S 200	2698	3540	4106	-272	387	92	S O
SIGUIJ 1982	OH2 WAT S 200	1	0	0	221	49	289	S O
HETATM 1983	OH2 WAT S 201	12.536	-12.349	30.216	1.00	24.32	S	O
ANISOU 1983	OH2 WAT S 201	4851	4539	6835	1	197	0	S O
SIGUIJ 1983	OH2 WAT S 201	1	0	0	221	49	289	S O
HETATM 1984	OH2 WAT S 202	8.989	-10.878	25.331	1.00	24.32	S	O
ANISOU 1984	OH2 WAT S 202	4047	4487	7218	-34	-219	-10	S O
SIGUIJ 1984	OH2 WAT S 202	1	0	0	221	49	289	S O

HETATM 1985	OH2 WAT S 203	12.685	-11.368	33.176	1.00	24.32		S	O
ANISOU 1985	OH2 WAT S 203	4501	2699	4335	953	19	31	S	O
SIGUIJ 1985	OH2 WAT S 203	1	0	0	221	49	289	S	O
HETATM 1986	OH2 WAT S 204	10.361	-9.570	33.573	1.00	24.32		S	O
ANISOU 1986	OH2 WAT S 204	2303	2590	1842	103	-2	0	S	O
SIGUIJ 1986	OH2 WAT S 204	1	0	0	221	49	289	S	O
HETATM 1987	OH2 WAT S 205	16.739	2.916	16.744	1.00	30.34		S	C
ANISOU 1987	OH2 WAT S 205	3417	2295	5206	-90	-1644	120	S	O
SIGUIJ 1987	OH2 WAT S 205	1	0	0	221	49	289	S	O
HETATM 1988	OH2 WAT S 206	12.807	15.979	16.650	1.00	30.34		S	O
ANISOU 1988	OH2 WAT S 206	4899	5487	2438	-2	-236	0	S	O
SIGUIJ 1988	OH2 WAT S 206	1	0	0	221	49	289	S	O
HETATM 1989	OH2 WAT S 207	13.046	13.246	13.991	1.00	30.34		S	O
ANISOU 1989	OH2 WAT S 207	5929	2552	3354	-110	278	-11	S	O
SIGUIJ 1989	OH2 WAT S 207	1	0	0	221	49	289	S	O
HETATM 1990	OH2 WAT S 208	12.133	10.659	13.167	1.00	30.34		S	O
ANISOU 1990	OH2 WAT S 208	4112	4404	2364	-13	-814	-37	S	O
SIGUIJ 1990	OH2 WAT S 208	1	0	0	221	49	289	S	O
HETATM 1991	OH2 WAT S 209	-0.469	4.967	16.910	1.00	30.69		S	O
ANISOU 1991	OH2 WAT S 209	3322	6694	5003	811	-115	40	S	O
SIGUIJ 1991	OH2 WAT S 209	1	0	0	221	49	289	S	O
HETATM 1992	OH2 WAT S 210	1.757	3.180	22.914	1.00	30.69		S	O
ANISOU 1992	OH2 WAT S 210	2424	4344	2706	-728	-30	-35	S	O
SIGUIJ 1992	OH2 WAT S 210	1	0	0	221	49	289	S	O
HETATM 1993	OH2 WAT S 211	2.523	1.306	24.182	1.00	30.69		S	O
ANISOU 1993	OH2 WAT S 211	4403	4672	7372	-11	258	5	S	O
SIGUIJ 1993	OH2 WAT S 211	1	0	0	221	49	289	S	O
HETATM 1994	OH2 WAT S 212	7.074	-5.418	21.373	1.00	30.69		S	O
ANISOU 1994	OH2 WAT S 212	4232	5911	2097	-598	-394	-10	S	O
SIGUIJ 1994	OH2 WAT S 212	1	0	0	221	49	289	S	O
HETATM 1995	N1 INH I 1	16.972	12.024	36.885	1.00	10.95		I	N
ANISOU 1995	N1 INH I 1	1228	1259	1389	-2	2	0	I	N
SIGUIJ 1995	N1 INH I 1	1	0	0	221	57	289	I	N
HETATM 1996	C2 INH I 1	16.470	11.815	38.255	1.00	10.80		I	C
ANISOU 1996	C2 INH I 1	1194	1175	1389	-1	-15	0	I	C
SIGUIJ 1996	C2 INH I 1	1	0	0	221	67	290	I	C
HETATM 1997	C4 INH I 1	17.773	11.451	38.995	1.00	10.95		I	C
ANISOU 1997	C4 INH I 1	1273	1509	1573	70	-120	29	I	C
SIGUIJ 1997	C4 INH I 1	1	0	0	221	67	290	I	C
HETATM 1998	C7 INH I 1	18.620	10.789	37.920	1.00	11.54		I	C
ANISOU 1998	C7 INH I 1	1340	1489	1655	20	-33	3	I	C
SIGUIJ 1998	C7 INH I 1	1	0	0	221	67	290	I	C
HETATM 1999	C10 INH I 1	18.421	11.778	36.767	1.00	11.19		I	C
ANISOU 1999	C10 INH I 1	1236	1496	1637	47	17	-2	I	C
SIGUIJ 1999	C10 INH I 1	1	0	0	221	66	290	I	C
HETATM 2000	C13 INH I 1	15.856	13.099	38.859	1.00	11.37		I	C
ANISOU 2000	C13 INH I 1	1202	1164	1456	-2	-7	0	I	C
SIGUIJ 2000	C13 INH I 1	1	0	0	221	66	290	I	C
HETATM 2001	O14 INH I 1	16.080	14.251	38.328	1.00	11.37		I	O
ANISOU 2001	O14 INH I 1	1368	1167	1474	-42	12	1	I	O
SIGUIJ 2001	O14 INH I 1	1	0	0	221	49	289	I	O

- 160 -

HETATM	2002	N15	INH	I	1	15.122	12.935	39.926	1.00	11.94		I	N	
ANISOU	2002	N15	INH	I	1	1164	1192	1434		4	-35	3	I	N
SIGUIJ	2002	N15	INH	I	1	1	0	0	221	57	289		I	N
HETATM	2003	C17	INH	I	1	14.496	14.072	40.624	1.00	13.70		I	C	
ANISOU	2003	C17	INH	I	1	1554	1302	1643		137	95	-44	I	C
SIGUIJ	2003	C17	INH	I	1	1	0	0	221	66	290		I	C
HETATM	2004	C20	INH	I	1	15.528	14.722	41.570	1.00	15.91		I	C	
ANISOU	2004	C20	INH	I	1	1958	1461	2142		106	-328	-92	I	C
SIGUIJ	2004	C20	INH	I	1	1	0	0	221	66	290		I	C
HETATM	2005	C23	INH	I	1	14.867	15.933	42.215	1.00	17.69		I	C	
ANISOU	2005	C23	INH	I	1	2620	1616	2462		346	-92	-131	I	C
SIGUIJ	2005	C23	INH	I	1	1	0	0	221	66	290		I	C
HETATM	2006	C24	INH	I	1	15.144	17.215	41.667	1.00	19.23		I	C	
ANISOU	2006	C24	INH	I	1	4714	1737	3191		128	424	45	I	C
SIGUIJ	2006	C24	INH	I	1	1	0	0	221	66	290		I	C
HETATM	2007	C26	INH	I	1	14.536	18.418	42.262	1.00	20.20		I	C	
ANISOU	2007	C26	INH	I	1	4777	1821	3026		276	191	22	I	C
SIGUIJ	2007	C26	INH	I	1	1	0	0	221	66	290		I	C
HETATM	2008	C28	INH	I	1	13.661	18.283	43.403	1.00	20.78		I	C	
ANISOU	2008	C28	INH	I	1	3620	3711	2333		25	-722	47	I	C
SIGUIJ	2008	C28	INH	I	1	1	0	0	221	66	290		I	C
HETATM	2009	C29	INH	I	1	13.379	16.967	43.956	1.00	20.05		I	C	
ANISOU	2009	C29	INH	I	1	3118	3598	2514		417	-58	-19	I	C
SIGUIJ	2009	C29	INH	I	1	1	0	0	221	66	290		I	C
HETATM	2010	C31	INH	I	1	13.993	15.794	43.341	1.00	18.98		I	C	
ANISOU	2010	C31	INH	I	1	2740	3474	2538		193	-9	-4	I	C
SIGUIJ	2010	C31	INH	I	1	1	0	0	221	66	290		I	C
HETATM	2011	O33	INH	I	1	13.064	19.413	44.006	1.00	22.11		I	O	
ANISOU	2011	O33	INH	I	1	4114	3733	2949		13	-204	-7	I	O
SIGUIJ	2011	O33	INH	I	1	1	0	0	221	49	289		I	O
HETATM	2012	C34	INH	I	1	12.177	19.459	45.137	1.00	22.69		I	C	
ANISOU	2012	C34	INH	I	1	4370	5531	3098		125	-9	0	I	C
SIGUIJ	2012	C34	INH	I	1	1	0	0	221	66	290		I	C
HETATM	2013	C38	INH	I	1	16.126	12.284	35.849	1.00	10.52		I	C	
ANISOU	2013	C38	INH	I	1	1219	1235	1370		0	14	0	I	C
SIGUIJ	2013	C38	INH	I	1	1	0	0	221	66	290		I	C
HETATM	2014	O39	INH	I	1	14.881	12.259	36.053	1.00	10.62		I	O	
ANISOU	2014	O39	INH	I	1	1229	1126	1282		7	-1	0	I	O
SIGUIJ	2014	O39	INH	I	1	1	0	0	221	49	289		I	O
HETATM	2015	N40	INH	I	1	16.626	12.478	34.625	1.00	11.20		I	N	
ANISOU	2015	N40	INH	I	1	1246	1379	1379		-35	27	7	I	N
SIGUIJ	2015	N40	INH	I	1	1	0	0	221	57	289		I	N
HETATM	2016	C42	INH	I	1	15.778	12.641	33.479	1.00	11.10		I	C	
ANISOU	2016	C42	INH	I	1	1317	1319	1413		0	-13	-1	I	C
SIGUIJ	2016	C42	INH	I	1	1	0	0	221	66	290		I	C
HETATM	2017	C45	INH	I	1	15.690	14.043	32.901	1.00	11.46		I	C	
ANISOU	2017	C45	INH	I	1	1197	1324	1481		-13	0	0	I	C
SIGUIJ	2017	C45	INH	I	1	1	0	0	221	66	290		I	C
HETATM	2018	C46	INH	I	1	15.144	14.214	31.570	1.00	11.99		I	C	
ANISOU	2018	C46	INH	I	1	1089	1484	1477		-6	44	1	I	C
SIGUIJ	2018	C46	INH	I	1	1	0	0	221	66	290		I	C

- 161 -

HETATM	2019	C47	INH	I	1	15.066	15.581	31.002	1.00	12.32		I	C
ANISOU	2019	C47	INH	I	1	1379	1478	1545	-1	-1	0	I	C
SIGUIJ	2019	C47	INH	I	1	1	0	0	221	66	290	I	C
HETATM	2020	C48	INH	I	1	15.523	16.707	31.785	1.00	12.16		I	C
ANISOU	2020	C48	INH	I	1	1634	1514	1574	-102	2	-2	I	C
SIGUIJ	2020	C48	INH	I	1	1	0	0	221	66	290	I	C
HETATM	2021	C50	INH	I	1	16.050	16.497	33.100	1.00	12.60		I	C
ANISOU	2021	C50	INH	I	1	1895	1427	1637	-229	-110	62	I	C
SIGUIJ	2021	C50	INH	I	1	1	0	0	221	66	290	I	C
HETATM	2022	C52	INH	I	1	15.141	15.172	33.661	1.00	12.30		I	C
ANISOU	2022	C52	INH	I	1	1628	1403	1484	-201	3	-3	I	C
SIGUIJ	2022	C52	INH	I	1	1	0	0	221	66	290	I	C
HETATM	2023	C54	INH	I	1	14.532	15.789	29.716	1.00	12.51		I	C
ANISOU	2023	C54	INH	I	1	1399	1694	1538	57	4	-1	I	C
SIGUIJ	2023	C54	INH	I	1	1	0	0	221	66	290	I	C
HETATM	2024	C56	INH	I	1	14.064	14.679	28.954	1.00	12.49		I	C
ANISOU	2024	C56	INH	I	1	1561	1708	1524	-7	0	0	I	C
SIGUIJ	2024	C56	INH	I	1	1	0	0	221	66	290	I	C
HETATM	2025	C58	INH	I	1	14.145	13.345	29.492	1.00	12.43		I	C
ANISOU	2025	C58	INH	I	1	1302	1698	1494	-38	7	1	I	C
SIGUIJ	2025	C58	INH	I	1	1	0	0	221	66	290	I	C
HETATM	2026	C60	INH	I	1	14.676	13.131	30.768	1.00	12.08		I	C
ANISOU	2026	C60	INH	I	1	1315	1526	1491	-89	6	3	I	C
SIGUIJ	2026	C60	INH	I	1	1	0	0	221	66	290	I	C

END

Example 1:**(S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(2-pyridin-3-yl-ethyl)-amide]****A) 7-Chloro-naphthalene-1-carboxylic acid methyl ester**

A mixture of 50 ml of methyl 2-furoate and 400 ml of chlorobenzene is stirred at 0° for 30 minutes, at RT for 1,5 hours and at 100° for 16 hours. 121 g of anhydrous AlCl₃ are added by portion at 0°. The solution obtained is cooled, poured in an ice-bath and stirred for 30 minutes before extraction of the aq. phase with ether. The organic phase obtained is washed with aq. 10% NaHCO₃ solution and brine, dried and solvent is evaporated. The residue obtained is purified by flash chromatography on silica gel (eluent: cyclohexane/EtOAc 99/1 to 95/5) to obtain the title compound.

B) (7-Chloro-naphthalen-1-yl)-methanol

A 0.7M diisobutylaluminium hydride solution in CH₂Cl₂ is added dropwise at -78° to 22 g of 7-chloro-naphthalene-1-carboxylic acid methyl ester in CH₂Cl₂. After stirring at -78° for 1 hour, the mixture obtained is warmed up to 0°, quenched with aq. 10% sodium tartrate solution

and stirred for further few minutes. The organic phase obtained is separated, washed with brine, dried and solvent is evaporated. The residue obtained is purified by flash chromatography on silica gel (eluent: cyclohexane/EtOAc 8/1 to 4/1) and the title compound is obtained.

MS: 175 [M-H₂O+H]⁺ TLC, R_f (cyclohexane/EtOAc 3/1) = 0.3

C) 1-Azidomethyl-7-chloro-naphthalene

1.52 ml of Diphenylphosphoryl azide and 1.10 ml of 1,8-diazabicyclo[5.4.0]undec-7-ene are added to 1.3 g of (7-Chloro-naphthalen-1-yl)-methanol in 18 ml of toluene. The mixture obtained is stirred at rt for 1 hour, washed with brine, the organic phase is dried and solvent is evaporated. The residue obtained is purified by flash chromatography on silica gel (eluent: cyclohexane/EtOAc 99/1) to yield the title compound.

TLC, R_f (cyclohexane/EtOAc 99/1) = 0.333

D) C-(7-Chloro-naphthalen-1-yl)-methylamine hydrochloride

1.24 g of Triphenylphosphine and 410 µl of H₂O are added to 998 mg of 1-azidomethyl-7-chloro-naphthalene in 20 ml of THF. The mixture obtained is stirred at 50° for 5 hours and solvent is evaporated. The residue obtained is acidified with aq. 1N HCl solution and extracted with EtOAc. The aq. phase obtained is basified with aq. 10% NaHCO₃ solution and extracted with EtOAc. The organic phase obtained is dried and solvent is evaporated. The title compound is obtained as the free amine compound and converted to the hydrochloride salt by addition of 4M HCl solution in dioxane. Solvent is evaporated and the residue obtained is stirred with ether, the mixture obtained is filtered and the filtrate obtained is dried to yield the title compound.

MS: 192 [M +H]⁺ TLC, R_f (CH₂Cl₂/MeOH/NH₄OH 95/5/0.01) = 0.25

E) C-(7-Triethylsilyl-ethynyl-naphthalen-1-yl)-methylamine

A solution of 500 mg of C-(7-Chloro-naphthalen-1-yl)-methylamine hydrochloride, 5.4 mg of bis(acetonitrile)palladium (II) chloride, 29.8 mg of 2-dicyclohexylphosphino-2',4',6'-triisopropyl-1,1'-biphenyl and 1.7 g of cesium carbonate in 7.5 ml of acetonitrile is stirred at rt for 25 minutes. After adding 495 µl of (triethylsilyl)acetylene, the mixture obtained is stirred at 90° for 2 hours, quenched with H₂O and extracted with EtOAc. The organic phase obtained is washed with brine, dried and solvent is evaporated. The residue obtained is purified by flash chromatography on silica gel (eluent: CH₂Cl₂/MeOH/NH₄OH 99/1/0.01 to 95/5/0.01) the title compound is obtained.

MS: 279 [M-NH₃ +H]⁺ TLC, R_f (CH₂Cl₂/MeOH/NH₄OH 98/2/0.01) = 0.22

F) (S)-1-[(7-Triethylsilanylethynyl-naphthalen-1-ylmethyl)-carbamoyl]-pyrrolidine-2-carboxylic acid

A 20% phosgene solution in 8 ml of toluene is added to 500 mg of C-(7-triethylsilanylethynyl-naphthalen-1-yl)-methylamine and 479 μ l of diisopropylethylamine in 40 ml of toluene. The solution obtained is stirred at reflux for 3 hours and another portion of a 20% phosgene solution in 8 ml of toluene is added and stirred at reflux another hour. Solvent is evaporated. To the evaporation residue obtained 559 μ l of diisopropylethylamine in 40 ml of THF and 213 mg of (S)-pyrrolidine-2-carboxylic acid are added. The mixture obtained is stirred for 1 hour and solvent is evaporated. The residue obtained is purified by preparative HPLC (Waters Sun Fire C18 column, gradient water/acetonitrile 95/5 to 0/100) to yield the title compound.

MS: 437 [M + H]⁺ HPLC (method B) : 4.366 minutes

G) (S)-1-[(7-Ethynyl-naphthalen-1-ylmethyl)-carbamoyl]-pyrrolidine-2-carboxylic acid

A solution of 250 mg of (S)-1-[(7-Triethylsilanylethynyl-naphthalen-1-ylmethyl)-carbamoyl]-pyrrolidine-2-carboxylic acid in 14 ml of THF is stirred at rt for 1 hour. Solvent is evaporated and the residue obtained is purified by preparative HPLC (Waters Sun Fire C18 column, gradient water/acetonitrile 95/5 to 0/100) to yield the title compound.

MS: 323 [M + H]⁺ TLC, R_f (EtOAc /AcOH 50/1) = 0.16

H) (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(2-pyridin-3-yl-ethyl)-amide]

11.6 mg of 3-(2-aminoethyl)pyridine, 4.05 μ l of diisopropylethylamine, 13.1 mg of 1-hydroxybenzotriazole and 18.8 mg of N-(Ethyl-N'-(3-dimethylaminopropyl)carbodiimide hydrochloride are added to 20 mg of (S)-1-[(7-ethynyl-naphthalen-1-ylmethyl)-carbamoyl]-pyrrolidine-2-carboxylic acid in 1 ml of CH₂Cl₂. The reaction mixture obtained is stirred at rt for 16 hours, solvent is evaporated and the residue obtained is purified by preparative HPLC (Waters Sun Fire C18 column, gradient water/acetonitrile 95/5 to 0/100) to yield the title compound.

MS: 427 [M + H]⁺ TLC, R_f (CH₂Cl₂/MeOH/NH₄OH 95/5/0.01) = 0.37.

Example 2: (S)-Pyrrolidine-1,2-dicarboxylic acid 2-[(2-dimethylamino-ethyl)-amide] 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide]

The title compound is prepared analogously as described in example 1 using N,N-dimethylethylenediamine instead of 3-(2-aminoethyl)pyridine.

MS: 393 [M+H]⁺ TLC, R_f (CH₂Cl₂/MeOH/NH₄OH 95/5/0.01) = 0.07

Example 3: (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(2-pyridin-4-yl-ethyl)-amide]

The title compound is prepared analogously as described in example 1 using 4-(2-aminoethyl)pyridine instead of 3-(2-aminoethyl)pyridine.

MS: 427 [M+H]⁺ TLC, R_f (CH₂Cl₂/MeOH/NH₄OH 95/5/0.01) = 0.10

Example 4: (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(6-methoxy-pyridin-3-ylmethyl)-amide]

The title compound is prepared analogously as described in example 1 using C-(6-Methoxy-pyridin-3-yl)-methylamine instead of 3-(2-aminoethyl)pyridine.

MS: 443 [M+H]⁺ TLC, R_f (CH₂Cl₂/MeOH/NH₄OH 95/5/0.01) = 0.275

Example 5: (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(1-methyl-piperidin-4-ylmethyl)-amide]

The title compound is prepared analogously as described in example 1 using 1-(methylpiperidin-4-yl)methylamine instead of 3-(2-aminoethyl)pyridine.

MS: 433 [M+H]⁺ TLC, R_f (CH₂Cl₂/MeOH/NH₄OH 95/5/0.01) = 0.072

Example 6: (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[4-(4-methyl-piperazin-1-yl)-benzylamide]

The title compound is prepared analogously as described in example 1 using 4-(4-methylpiperazino)benzylamine instead of 3-(2-aminoethyl)pyridine.

MS: 510 [M+H]⁺ TLC, R_f (CH₂Cl₂/MeOH/NH₄OH 95/5/0.01) = 0.1

Example 7: (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-(4-morpholin-4-ylmethyl-benzylamide)

The title compound is prepared analogously as described in example 1 using 4-(morpholinomethyl)benzylamine instead of 3-(2-aminoethyl)pyridine.

MS: 511 [M+H]⁺ TLC, R_f (CH₂Cl₂/MeOH/NH₄OH 98/2/0.01) = 0.26

Example 8: (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-methylamide

The title compound is prepared analogously as described in example 1 using methylamine hydrochloride instead of 3-(2-aminoethyl)pyridine.

MS: 336 [M+H]⁺ TLC, R_f (ethylacetate) = 0.1

Example 9: (S)-Pyrrolidine-1,2-dicarboxylic acid 2-[(2-(4-benzyl-piperazin-1-yl)-ethyl)-amide] 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide]

The title compound is prepared analogously as described in example 1 using 2-(4-Benzyl-piperazin-1-yl)-ethylamine instead of 3-(2-aminoethyl)pyridine.

MS: 524 [M+H]⁺ TLC, R_f (CH₂Cl₂/MeOH/NH₄OH 95/5/0.01) = 0.32

Example 10: (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(2-methoxy-ethyl)-amide]

The title compound is prepared analogously as described in example 1 using 2-methoxyethylamine instead of 3-(2-aminoethyl)pyridine.

MS: 380 [M+H]⁺ TLC, R_f (CH₂Cl₂/MeOH/NH₄OH 95/5/0.01) = 0.276

Example 11: (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(pyridin-3-ylmethyl)-amide]

The title compound is prepared analogously as described in example 1 using 3-picolylamine instead of 3-(2-aminoethyl)pyridine.

MS: 413 [M+H]⁺ TLC, R_f (CH₂Cl₂/MeOH/NH₄OH 95/5/0.01) = 0.17

Example 12: (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(pyridin-4-ylmethyl)-amide]

The title compound is prepared analogously as described in example 1 using 4-picolylamine instead of 3-(2-aminoethyl)pyridine.

MS: 413 [M+H]⁺ TLC, R_f (CH₂Cl₂/MeOH/NH₄OH 95/5/0.01) = 0.215

Example 13: (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(2-(4-methyl-piperazin-1-yl)-ethyl)-amide]

The title compound is prepared analogously as described in example 1 using 1-(2-aminoethyl)4-methylpiperazine instead of 3-(2-aminoethyl)pyridine.

MS: 448 [M+H]⁺ TLC, R_f (CH₂Cl₂/MeOH/NH₄OH 95/5/0.01) = 0.088

Example 14: (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(6-chloro-naphthalen-1-ylmethyl)-amide] 2-[(2-(4-methoxy-phenyl)-ethyl)-amide]

A) C-(6-Chloro-naphthalen-1-yl)-methylaniline trifluoroacetic acid salt

The title compound is prepared analogously as described in example 1 step C and D using (6-Chloro-naphthalen-1-yl)-methanol instead of (7-Chloro-naphthalen-1-yl)-methanol.

MS: 175 [M-NH₃ +H]⁺ HPLC (method B) : 1.935 min

B) (S)-2-[(2-(4-Methoxy-phenyl)-ethyl)carbamoyl]-pyrrolidine-1-carboxylic acid tert-butyl ester

18.9 g of N-(Ethyl-N'-(3-dimethylaminopropyl)carbodiimide hydrochloride are added to a cooled solution of 20.04 g of (S)-Pyrrolidine-1,2-dicarboxylic acid 1-tert-butyl ester, 14.9 g of 4-methoxyphenethylamine, 16.9 ml of diisopropylethylamine and 13.2 g of 1-hydroxy-benzotriazole in 250 ml of CH₂Cl₂. The reaction mixture obtained is stirred at rt for 16 hours, the reaction is quenched with aq. 2N HCl solution and the aq. phase obtained is extracted with CH₂Cl₂. The combined organic phases obtained are washed with aq. 2N HCl solution,

brine and aq. saturated NaHCO_3 solution, dried and solvent is evaporated. The residue obtained is purified by recrystallisation with EtOAc / hexane (1/3) to afford the title compound.

MS: 349 $[\text{M}+\text{H}]^+$ TLC, R_f (ethylacetate / hexane 1/1) = 0.21

C) (S)-Pyrrolidine-2-carboxylic acid [2-(4-methoxy-phenyl)-ethyl]-amide

4N HCl solution in 41 ml of dioxane is added to a fine suspension of 16.78 g of (S)-2-[2-(4-Methoxy-phenyl)-ethylcarbamoyl]-pyrrolidine-1-carboxylic acid tert-butyl ester in 40 ml of dioxane. After stirring under poor cooling with an ice-bath for 2.5 hours, solvent is evaporated, the residue obtained is cooled over night at 0° and resulting crystals are stirred with 150 ml of tert-butylmethylether, filtered and dried to yield the title compound.

MS: 249 $[\text{M}+\text{H}]^+$ TLC, R_f ($\text{CH}_2\text{Cl}_2/\text{MeOH}/\text{NH}_4\text{OH}$ 90/9/1) = 0.35

D) (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(6-chloro-naphthalen-1-ylmethyl)-amide] 2-[(2-(4-methoxy-phenyl)-ethyl)-amide]

A solution of 33 mg of C-(6-Chloro-naphthalen-1-yl)-methylamine trifluoroacetic acid salt, 22 mg of 4-nitrophenylchloroformate and 25 μl of pyridine in 3 ml of CH_2Cl_2 is stirring at rt for 1 hour. 30 mg of (S)-Pyrrolidine-2-carboxylic acid [2-(4-methoxy-phenyl)-ethyl]-amide and 37 μl of diisopropylethylamine are added. The reaction mixture obtained is stirred at rt for 16 hours, solvent is evaporated and the residue obtained is purified by preparative HPLC (Waters Sun Fire C18 column, gradient water/acetonitrile 95/5 to 0/100) to yield the title compound.

MS: 466 $[\text{M}+\text{H}]^+$ TLC, R_f (EtOAc) = 0.363

Example 15: (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-chloro-naphthalen-1-ylmethyl)-amide] 2-[(2-(4-methoxy-phenyl)-ethyl)-amide]

The title compound is prepared analogously as described in example 14 using C-(7-Chloro-naphthalen-1-yl)-methylamine trifluoroacetic acid salt instead of C-(6-Chloro-naphthalen-1-yl)-methylamine trifluoroacetic acid salt.

MS: 466 $[\text{M}+\text{H}]^+$ TLC, R_f (EtOAc) = 0.45

Example 16: (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(5-bromo-benzo[b]thiophen-3-ylmethyl)-amide] 2-[(2-(4-methoxy-phenyl)-ethyl)-amide]

The title compound is prepared analogously as described in example 14 using C-(5-Bromo-benzo[b]thiophen-3-yl)-methylamine instead of C-(6-Chloro-naphthalen-1-yl)-methylamine trifluoroacetic acid salt.

MS: 518 $[\text{M}+\text{H}]^+$ TLC, R_f (EtOAc / cyclohexane 2/1) = 0.1

Example 17: (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(5-chloro-benzo[b]thiophen-3-ylmethyl)-amide] 2-[(2-(4-methoxy-phenyl)-ethyl)-amide]

The title compound is prepared analogously as described in example 14 using C-(5-chloro-benzo[b]thiophen-3-yl)-methylamine hydrochloride instead of C-(6-Chloro-naphthalen-1-yl)-methylamine trifluoroacetic acid salt.

MS: 472 [M+H]⁺ TLC, R_f (EtOAc / cyclohexane 2/1) = 0.209

Example 18: (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(2-(4-methoxy-phenyl)-ethyl)-amide]

A) (S)-Pyrrolidine-1,2-dicarboxylic acid 2-[(2-(4-methoxy-phenyl)-ethyl)-amide] 1-[(7-triethylsilanylethynyl-naphthalen-1-ylmethyl)-amide]

The title compound is prepared analogously as described in example 14 using C-(7-Triethylsilanylethynyl-naphthalen-1-yl)-methylamine instead of C-(6-Chloro-naphthalen-1-yl)-methylamine trifluoroacetic acid salt.

MS: 570 [M+H]⁺

B) (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(2-(4-methoxy-phenyl)-ethyl)-amide]

The title compound is prepared analogously as described in example 1 part G using (S)-Pyrrolidine-1,2-dicarboxylic acid 2-[(2-(4-methoxy-phenyl)-ethyl)-amide] 1-[(7-triethylsilanylethynyl-naphthalen-1-ylmethyl)-amide] instead of (S)-1-[(7-Triethylsilanylethynyl-naphthalen-1-ylmethyl)-carbamoyl]-pyrrolidine-2-carboxylic acid.

MS: 456 [M+H]⁺ TLC, R_f (EtOAc/cyclohexane 2/1) = 0.15

Example 19: (2S,4R)-4-Methoxy-pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(pyridin-3-ylmethyl)-amide]

A) (2S,4R)-4-Methoxy-2-[(pyridin-3-ylmethyl)-carbamoyl]-pyrrolidine-1-carboxylic acid tert-butyl ester

The title compound is prepared analogously as described in example 14 step B using (2S,4R)-4-Methoxy-pyrrolidine-1,2-dicarboxylic acid 1-tert-butyl ester instead of (S)-Pyrrolidine-1,2-dicarboxylic acid 1-tert-butyl ester and 3-picolylamine instead of 4-methoxyphenethylamine.

MS: 336 [M+H]⁺ TLC, R_f (CH₂Cl₂ / MeOH/NH₄OH 90/9/1) = 0.36

B) ((2S,4R)-4-Methoxy-pyrrolidine-2-carboxylic acid (pyridin-3-ylmethyl)-amide

The title compound is prepared analogously as described in example 14 step C using (2S,4R)-4-Methoxy-2-[(pyridin-3-ylmethyl)-carbamoyl]-pyrrolidine-1-carboxylic acid tert-butyl

ester instead of (S)-2-[2-(4-Methoxy-phenyl)-ethylcarbamoyl]-pyrrolidine-1-carboxylic acid tert-butyl ester.

MS: 236 [M+H]⁺ TLC, R_f (CH₂Cl₂/MeOH/NH₄OH 90/9/1) = 0.31

C) (2S,4R)-4-Methoxy-pyrrolidine-1,2-dicarboxylic acid 2-[(pyridin-3-ylmethyl)-amide] 1-[(7-triethylsilanylethynyl-naphthalen-1-ylmethyl)-amide]

The title compound is prepared analogously as described in example 1 part F using ((2S,4R)-4-Methoxy-pyrrolidine-2-carboxylic acid (pyridin-3-ylmethyl)-amide instead of (S)-pyrrolidine-2-carboxylic acid.

MS: 557 [M+H]⁺ TLC, R_f (CH₂Cl₂/MeOH/NH₄OH 90/9/1) = 0.44

D) (2S,4R)-4-Methoxy-pyrrolidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(pyridin-3-ylmethyl)-amide]

The title compound is prepared analogously as described in example 18 part B using (2S,4R)-4-Methoxy-pyrrolidine-1,2-dicarboxylic acid 2-[(pyridin-3-ylmethyl)-amide] 1-[(7-triethylsilanylethynyl-naphthalen-1-ylmethyl)-amide] instead of (S)-Pyrrolidine-1,2-dicarboxylic acid 2-[[2-(4-methoxy-phenyl)-ethyl]-amide] 1-[(7-triethylsilanylethynyl-naphthalen-1-ylmethyl)-amide].

MS: 443 [M+H]⁺ TLC, R_f (CH₂Cl₂/MeOH/NH₄OH 90/9/1) = 0.23

Example 20: (S)-Piperidine-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(pyridin-3-ylmethyl)-amide]

The title compound is prepared analogously as described in example 19 using (S)-Piperidine-1,2-dicarboxylic acid 1-tert-butyl ester instead of (2S,4R)-4-Methoxy-pyrrolidine-1,2-dicarboxylic acid 1-tert-butyl ester.

MS: 427 [M+H]⁺ TLC, R_f (CH₂Cl₂/MeOH/NH₄OH 90/9/1) = 0.36

Example 21: (S)-Hexahydro-cyclopenta[c]pyrrole-1,2-dicarboxylic acid 2-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 1-[(pyridin-3-ylmethyl)-amide]

A) (S)-Hexahydro-cyclopenta[c]pyrrole-1,2-dicarboxylic acid 2-tert-butyl ester 1-ethyl ester
2,36 g of Di(tert-butyl)dicarbonate are added in 3-times to a mixture of 1.65 g of (S)-octahydro-cyclopenta[c]pyrrole-1-carboxylic acid ethyl ester and 1.45 g of NaCO₃ in 20 ml of dioxane and 10 ml of H₂O. The reaction mixture obtained is stirred at rt for 4 hours, the reaction is quenched with brine and the residue obtained is extracted with EtOAc. The organic phase obtained is washed with brine, dried and solvent is evaporated before purification by flash chromatography on silica gel is carried out (eluent: cyclohexane/EtOAc 9/1) to yield the title compound.

MS: 228 [M-isobutene +H]⁺ TLC, R_f (cyclohexane/EtOAc 4/1) = 0.353

B) (S)-Hexahydro-cyclopenta[c]pyrrole-1,2-dicarboxylic acid 2-tert-butyl ester

A mixture of 2 g of (S)-Hexahydro-cyclopenta[c]pyrrole-1,2-dicarboxylic acid 2-tert-butyl ester 1-ethyl ester and 449 mg of LiOH in 30 ml of THF and 10 ml of H₂O is stirred at rt for 16 hours. The reaction is quenched with brine, acidified to pH 2 with aq. 2N HCl solution and extracted with EtOAc. The combined organic phases obtained are washed with brine, dried and solvent is evaporated to afford the title compound.

MS: 200 [M+H]⁺ TLC, R_f (hexane/EtOAc/AcOH 3/6/1) = 0.71

C) (S)-1-[(Pyridin-3-ylmethyl)-carbamoyl]-hexahydro-cyclopenta[c]pyrrole-2-carboxylic acid tert-butyl ester

50% propylphosphonic anhydride solution in 650 µl of DMF is added to a solution of 200 mg of (S)-Hexahydro-cyclopenta[c]pyrrole-1,2-dicarboxylic acid 2-tert-butyl ester, 7.42 mg of 4-dimethylaminopyridine and 650 µl of diisopropylethylamine in CH₂Cl₂. After stirring at rt for 16 hours, the reaction is quenched with aq. 2N NaOH solution, eluted through a Chem Elut extraction with CH₂Cl₂ and solvent is evaporated before purification by preparative HPLC is carried out (Waters Sun Fire C18 column, gradient water/acetonitrile 95/5 to 0/100) to yield the title compound.

MS: 346 [M+H]⁺ TLC, R_f (CH₂Cl₂/MeOH/NH₄OH 90/9/1) = 0.42

D) (S)-Hexahydro-cyclopenta[c]pyrrole-1,2-dicarboxylic acid 2-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 1-[(pyridin-3-ylmethyl)-amide]

The title compound is prepared analogously as described in example 19 using (S)-1-[(Pyridin-3-ylmethyl)-carbamoyl]-hexahydro-cyclopenta[c]pyrrole-2-carboxylic acid tert-butyl ester instead of (2S,4R)-4-Methoxy-2-[(pyridin-3-ylmethyl)-carbamoyl]-pyrrolidine-1-carboxylic acid tert-butyl ester.

MS: 453 [M+H]⁺ TLC, R_f (CH₂Cl₂/MeOH/NH₄OH 90/9/1) = 0.29

Example 22: (S)-2,3-Dihydro-indole-1,2-dicarboxylic acid 1-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(pyridin-3-ylmethyl)-amide]

The title compound is prepared analogously as described in example 21 using (S)-2,3-Dihydro-indole-1,2-dicarboxylic acid 1-tert-butyl ester instead of (S)-Hexahydro-cyclopenta[c]pyrrole-1,2-dicarboxylic acid 2-tert-butyl ester.

MS: 461 [M+H]⁺ TLC, R_f (CH₂Cl₂/MeOH/NH₄OH 90/9/1) = 0.42

Example 23: (S)-1,3-Dihydro-isoindole-1,2-dicarboxylic acid 2-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 1-[(pyridin-3-ylmethyl)-amide]

The title compound is prepared analogously as described in example 21 using 1,3-Dihydro-isindole-1,2-dicarboxylic acid 2-tert-butyl ester instead of (S)-Hexahydro-cyclopenta[c]pyrrole-1,2-dicarboxylic acid 2-tert-butyl ester.

MS: 461 [M+H]⁺ TLC, R_f (CH₂Cl₂/MeOH/NH₄OH 90/9/1) = 0.34

Example 24: (1R,2S,5S)-3-Aza-bicyclo[3.1.0]hexane-2,3-dicarboxylic acid 3-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(pyridin-3-ylmethyl)-amide]

The title compound is prepared analogously as described in example 21 using (1R,2S,5S)-3-aza-bicyclo[3.1.0]hexane-2,3-dicarboxylic acid 3-tert-butyl ester instead of (S)-Hexahydro-cyclopenta[c]pyrrole-1,2-dicarboxylic acid 2-tert-butyl ester.

MS: 425 [M+H]⁺ TLC, R_f (CH₂Cl₂/MeOH/NH₄OH 90/9/1) = 0.32

Example 25: (1S,2S,5R)-3-Aza-bicyclo[3.1.0]hexane-2,3-dicarboxylic acid 3-[(7-ethynyl-naphthalen-1-ylmethyl)-amide] 2-[(pyridin-3-ylmethyl)-amide]

The title compound is prepared analogously as described in example 21 using (1S,2S,5R)-3-aza-bicyclo[3.1.0]hexane-2,3-dicarboxylic acid 3-tert-butyl ester instead of (S)-Hexahydro-cyclopenta[c]pyrrole-1,2-dicarboxylic acid 2-tert-butyl ester.

MS: 425 [M+H]⁺ TLC, R_f (CH₂Cl₂/MeOH/NH₄OH 90/9/1) = 0.36

Example 26: (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(naphthalen-1-ylmethyl)-amide] 2-(phenethyl-amide)

A) (4-Polystyryloxy-2,6-dimethoxy-benzyl)-phenethyl-amine

25 g of commercially available 2-(3,5-dimethoxy-4-formylphenoxy)ethoxymethyl polystyrene is washed 4 times with a 10/3 mixture of DCE and TMOF (150 ml). The resin obtained is suspended in the above 10/3 mixture of DCE and TMOF (150 ml) again and treated with 15.1 g of phenethylamine. The slurry obtained is shaken on an orbital shaker at rt for 16 hours, the resin obtained is drained and washed successively with DMA, THF and CH₂Cl₂. A preformed solution of 5.1 ml of MeOH, 7.2 ml of AcOH and 125 mmol borane-pyridine complex in CH₂Cl₂ is added to the resin and shaking is resumed for 4 hours at rt. The resin obtained is drained and washed successively with DMA, AcOH/DMA (1/19), DMA, THF/H₂O (9/1), THF, CH₂Cl₂, MeOH, THF, MeOH. The title compound is thoroughly dried under vacuum to constant weight.

B) (S)-2-[(4-Polystyryloxy-2,6-dimethoxy-benzyl)-phenethyl-carbamoyl]-pyrrolidine-1-carboxylic acid 9H-fluoren-9-ylmethyl ester

122 mg of (S)-pyrrolidine-1,2-dicarboxylic acid 1-(9H-fluoren-9-ylmethyl) ester followed by 126 µl of DIPEA are added to a solution of 140 mg of HATU in 1.20 ml of NMP. The solution obtained is added onto 200 mg of the (4-polystyryloxy-2,6-dimethoxy-benzyl)-phenethyl-

amine resin (loading approximated as 0.6 mmol/g, 0.12 mmol) and the slurry obtained is shaken for 2 hours at 60°. The resin obtained is washed successively with DMA, MeOH, CH₂Cl₂, and treated for one hour at rt with a 1M solution of Ac₂O and 2M DIPEA in 5 ml of CH₂Cl₂. The resin obtained is drained and washed 3 consecutive times using the above solvent sequence of DMA, MeOH and CH₂Cl₂.

C) (S)-Pyrrolidine-2-carboxylic acid (4- polystyryloxy -2,6-dimethoxy-benzyl)-phenethyl-amide

The resin (S)-2-[(4- Polystyryloxy -2,6-dimethoxy-benzyl)-phenethyl-carbamoyl]-pyrrolidine-1-carboxylic acid 9H-fluoren-9-ylmethyl ester obtained in step B (0.12 mmol of bound species) is suspended in a mixture of piperidine and DMA (1/4, 3 ml) and shaken on an orbital shaker for 20 minutes before draining and washing successively with DMA, MeOH, and CH₂Cl₂. The resin obtained is submitted one additional time to the piperidine and DMA solution for 20 minutes before final washing with DMA, MeOH, and CH₂Cl₂ to give the title compound.

D) (S)-Pyrrolidine-1,2-dicarboxylic acid 2-[(4- polystyryloxy -2,6-dimethoxy-benzyl)-phenethyl-amide] 1-[(naphthalen-1-ylmethyl)-amide]

210 mg of 1-(aminomethyl)naphthalene followed by 210 µl of DIPEA are cautiously added to a solution of 249 mg of 4-nitrophenylchloroformate in 2.60 ml of DCE. The solution obtained is stirred for 2.5 hours at rt and added to the resin (0.12 mmol of bound species) obtained in step C. The slurry of resin obtained is shaken at rt for 17 hours on an orbital shaker. The resin obtained is drained and washed 3 consecutive times using a sequence of DMA, MeOH and CH₂Cl₂ to give the title compound.

E) (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(naphthalen-1-ylmethyl)-amide] 2-(phenethyl-amide)

The resin of step D) (0.12 mmol of bound species) is treated with a solution of 20% TFA in 2 ml of CH₂Cl₂ for 1 hour at rt. The resin obtained is filtered and washed 3 times with 2 ml of CH₂Cl₂. The combined filtrates obtained are concentrated and the residue obtained is dissolved in MeOH and submitted to purification by preparative HPLC to give the title compound.

MS: 402 [M +H]⁺, 424 [M +Na]⁺ HPLC : 4.44 min, 100% UV purity

Example 27: (2S,4S)-4-Phenyl-pyrrolidine-1,2-dicarboxylic acid 1-[(naphthalen-1-ylmethyl)-amide] 2-(phenethyl-amide)

The title compound is prepared analogously as described in example 26 using (2S,4S)-4-phenyl-pyrrolidine-1,2-dicarboxylic acid 1-(9H-fluoren-9-ylmethyl) ester instead of (S)-pyrrolidine-1,2-dicarboxylic acid 1-(9H-fluoren-9-ylmethyl) ester in step B.

MS: 478 [M + H]⁺, 500 [M + Na]⁺ HPLC: 5.22 minutes

Example 28: (2S,4R)-4-Phenyl-pyrrolidine-1,2-dicarboxylic acid 1-[(naphthalen-1-ylmethyl)-amide] 2-(phenethyl-amide)

The title compound is prepared analogously as described in example 26 using (2S,4R)-4-phenyl-pyrrolidine-1,2-dicarboxylic acid 1-(9H-fluoren-9-ylmethyl) ester instead of (S)-pyrrolidine-1,2-dicarboxylic acid 1-(9H-fluoren-9-ylmethyl) ester in step B.

MS: 478 [M + H]⁺, 500 [M + Na]⁺ HPLC: 5.13 minutes

Example 29: (S)-3,4-Dihydro-1H-isoquinoline-2,3-dicarboxylic acid 2-[(naphthalen-1-ylmethyl)-amide] 3-(phenethyl-amide)

The title compound is prepared analogously as described in example 26 using (S)-3,4-dihydro-1H-isoquinoline-2,3-dicarboxylic acid 2-(9H-fluoren-9-ylmethyl) ester instead of (S)-pyrrolidine-1,2-dicarboxylic acid 1-(9H-fluoren-9-ylmethyl) ester in step B.

MS: 464 [M + H]⁺, 486 [M + Na]⁺ HPLC: 5.04 minutes

Example 30: (S)-Piperidine-1,2-dicarboxylic acid 1-[(naphthalen-1-ylmethyl)-amide] 2-(phenethyl-amide)

The title compound is prepared analogously as described in example 26 using (S)-piperidine-1,2-dicarboxylic acid 1-(9H-fluoren-9-ylmethyl) ester instead of (S)-pyrrolidine-1,2-dicarboxylic acid 1-(9H-fluoren-9-ylmethyl) ester in step B.

MS: 438 [M + Na]⁺ HPLC: 4.77 minutes

Example 31: (S)-Pyrrolidine-1,2-dicarboxylic acid 2-[(2-(4-methoxy-phenyl)-ethyl)-amide] 1-[(naphthalen-1-ylmethyl)-amide]

The title compound is prepared analogously as described in example 26 using 2-(4-Methoxy-phenyl)-ethylamine instead of phenethylamine in step A.

MS: 432 [M + H]⁺, 454 [M + Na]⁺ HPLC: 4.23 minutes

Example 32: (S)-Pyrrolidine-1,2-dicarboxylic acid 2-benzylamide 1-[(naphthalen-1-ylmethyl)-amide]

The title compound is prepared analogously as described in example 26 using benzylamine instead of phenethylamine in step A.

MS: 388 [M + H]⁺, 410 [M + Na]⁺ HPLC: 4.11 minutes

Example 33: (S)-Pyrrolidine-1,2-dicarboxylic acid 2-cyclohexylmethyl-amide 1-[(naphthalen-1-ylmethyl)-amide]

The title compound is prepared analogously as described in example 26 using C-cyclohexylmethylamine instead of phenethylamine in step A.

MS: 394 [M + H]⁺, 416 [M + Na]⁺ HPLC: 4.68 minutes

Example 34: (S)-Pyrrolidine-1,2-dicarboxylic acid 2-[(3-methyl-butyl)-amide] 1-[(naphthalen-1-ylmethyl)-amide]

The title compound is prepared analogously as described in example 26 using 3-methyl-butylamine instead of phenethylamine in step A.

MS: 368 [M + H]⁺, 390 [M + Na]⁺ HPLC: 4.34 minutes

Example 35: (S)-Pyrrolidine-1,2-dicarboxylic acid 1-[(naphthalen-1-ylmethyl)-amide] 2-[(tetrahydro-furan-2-ylmethyl)-amide]

The title compound is prepared analogously as described in example 26 using C-(tetrahydro-furan-2-yl)-methylamine instead of phenethylamine in step A.

MS: 382 [M + H]⁺, 404 [M + Na]⁺ HPLC: 3.47 minutes

Example 36 : (1S,2S,5R)-3-aza-bicyclo[3.1.0]hexane-2,3-dicarboxylic acid 3-[(7-chloro-naphthalen-1-ylmethyl)-amide] 2-[(pyridin-3-ylmethyl)-amide]

The title compound is prepared analogously as described in example 1 step F using (1S,2S,5R)-3-aza-bicyclo[3.1.0]hexane-2-carboxylic acid (pyridin-3-ylmethyl)-amide instead of (S)-pyrrolidine-2-carboxylic acid and C-(7-chloro-naphthalen-1-yl)-methylamine instead of C-(7-triethylsilanylethynynaphthalen-1-yl)-methylamine. The title compound is dissolved in CH₂Cl₂ and treated with polymer bound benzylamine.

MS: 434.9 [M + H]⁺, 432.8 [M - H]⁻ TLC, R_f (CH₂Cl₂/MeOH/NH₄OH 95/5/0.5) 0.10

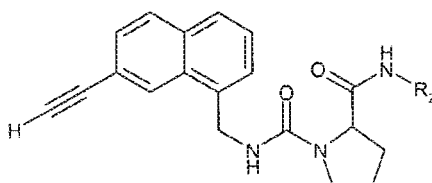
Example 37 : (1S,2S,5R)-3-aza-bicyclo[3.1.0]hexane-2,3-dicarboxylic acid 3-[(7-chloro-naphthalen-1-ylmethyl)-amide] 2-[(2-(4-methoxy-phenyl)-ethyl)-amide]

The title compound is prepared analogously as described in example 1 step F using (1S,2S,5R)-3-aza-bicyclo[3.1.0]hexane-2-carboxylic acid [2-(4-methoxy-phenyl)-ethyl]-amide instead of (S)-pyrrolidine-2-carboxylic acid and C-(7-chloro-naphthalen-1-yl)-methylamine instead of C-(7-triethylsilanylethynynaphthalen-1-yl)-methylamine. The title compound is dissolved in CH₂Cl₂ and treated with polymer bound benzylamine.

MS: 477.9 [M + H]⁺, 475.8 [M - H]⁻ TLC, R_f (CH₂Cl₂/MeOH/NH₄OH 95/5/0.5) 0.40

TABLE 1:

A compound of formula

wherein R₂ is as defined in Table 1.

Example No.	R ₂
1	
2	
3	
4	
5	
6	
7	
8	-CH ₃
9	
10	
11	
12	

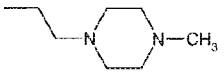
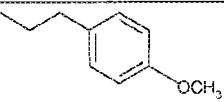
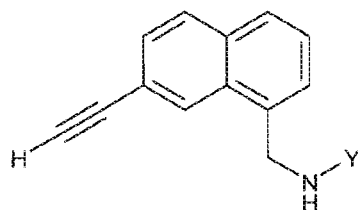
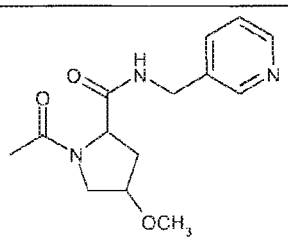
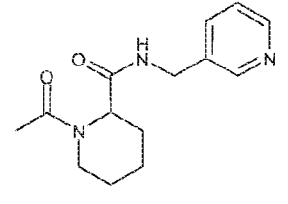
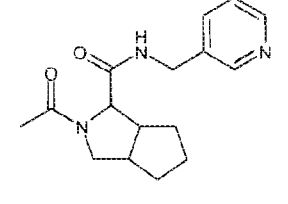
13	
18	

TABLE 2:

A compound of formula



wherein Y is as defined in Table 2.

Example No.	Y
19	
20	
21	

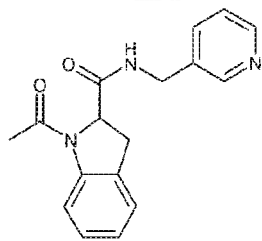
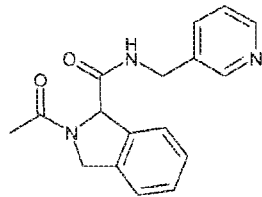
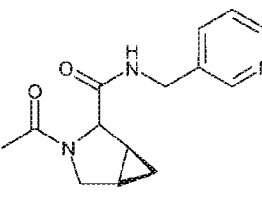
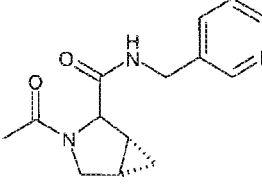
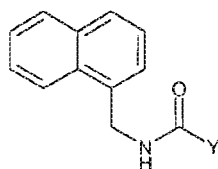
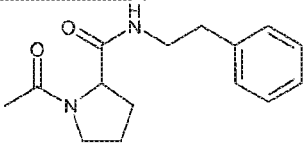
22	
23	
24	
25	

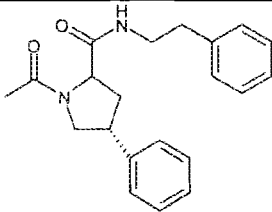
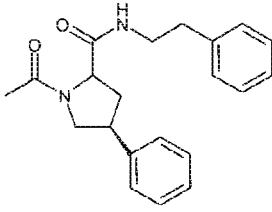
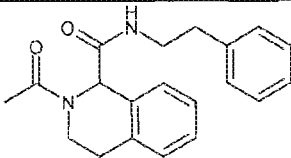
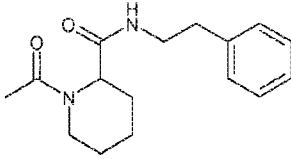
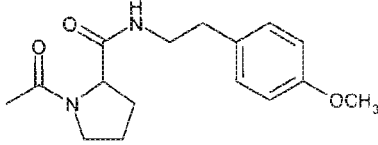
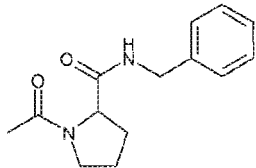
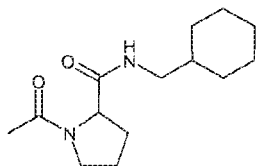
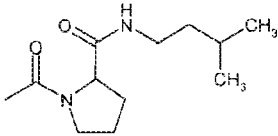
TABLE 3:

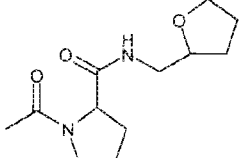
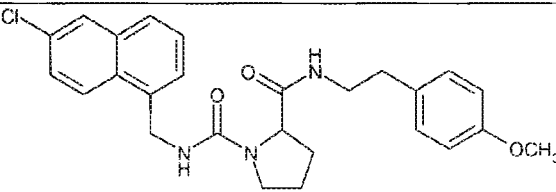
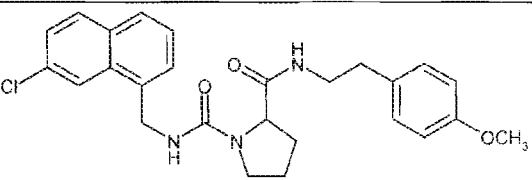
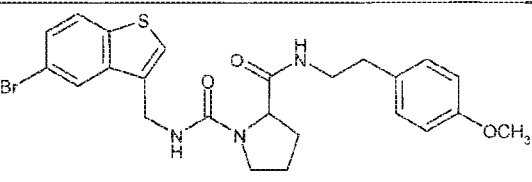
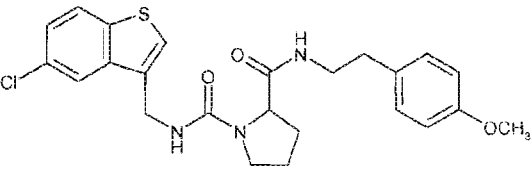
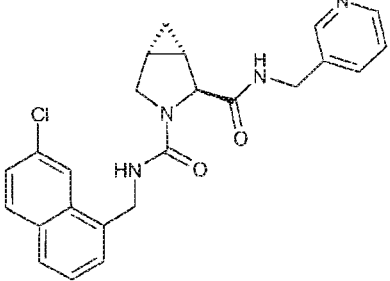
A compound of formula

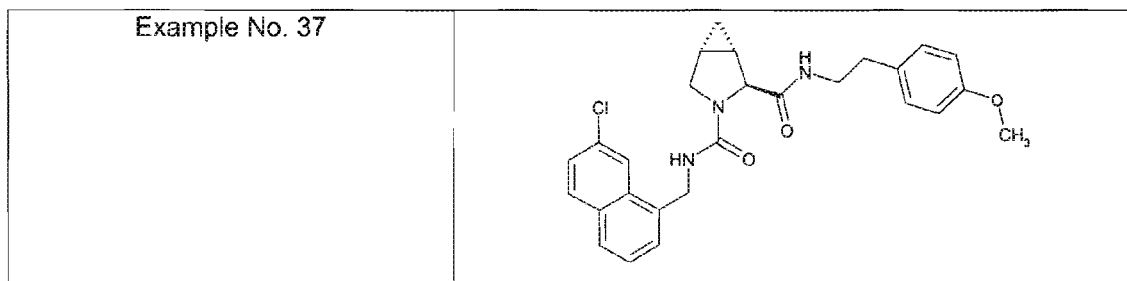


wherein Y is as defined in Table 3.

Example No.	Y
26	

27	
28	
29	
30	
31	
32	
33	
34	

35	
Example No. 14	
Example No. 15	
Example No. 16	
Example No. 17	
Example No. 36	

**Example 38:****A) Test on recovery of skin barrier disruption in mice**

Method: Skin barrier disruption is achieved in groups of hairless SKH1 mice with repeated stripping of the skin with S-Sqame[®] skin sampling disks. The procedure is completed when transepidermal water loss (TEWL) achieved ≥ 40 mg/cm²/h. TEWL is assessed with a Tewameter TM210 (Courage Khazaka, Cologne, DE). Immediately after barrier disruption 30 μ l of the compound of example 37 (= Test compound 1) is applied at 10 mM concentration. Controls animals are treated similarly with the solvent (EtOH / propylene glycol, 3/7 (v/v)) alone. TEWL is measured before, immediately after, and at 3 hrs after barrier disruption. In each animal, the percentage recovery is calculated using the formula: $(1 - [\text{TEWL at 3 hrs} - \text{base line TEWL}] / [\text{TEWL immediately after stripping} - \text{base line TEWL}]) \times 100\%$.

Table 1 shows that a single application of the Test compound 1 accelerates barrier repair by 65 - 76% compared to repair in mice treated with the solvent alone ($p < 0.001$).

Table 1:

Animals	% Recovery in barrier disruption Mean (SD values), n: 8 or 12 animals per group)
Treated with Test compound 1 at 10 mM	76 (3.3)***
Treated with solvent alone	56 (7.1)

***: $p < 0.001$ vs solvent control

B) Test on anti-inflammatory activity in murine model of irritant contact dermatitis (ICD)

Method: Crl:NMRI mice are challenged with 10 μ l 0.005% phorbol 12-myristat-13-acetate (TPA) on the inner surface of the right ear. The unchallenged left ears serve as normal controls and dermatitis is evaluated from the difference in auricular weight (taken as a measure of inflammatory swelling) 6 hours after the challenge. The animals are treated

topically with 10 µl of the test compound 1 or the solvent 30 minutes prior to the challenge. The efficacy of the treatment is calculated as the percentage inhibition of inflammatory auricular swelling relative to animals treated with the vehicle alone.

Table 2 shows that TPA-induced irritant dermatitis is concentration-dependently inhibited. The inflammatory swelling is inhibited by 54-73% at 20 mM concentrations; no statistically significant inhibition was observed at 3 mM.

Table 2:

	% Inhibition inflammatory swelling [Mean ± SEM values ^(n animals)]
Concentration	Test compound 1
30 mM	73 ± 7.0 ^{***24}
10 mM	41 ± 5.3 ^{***24}
3 mM	13 ± 6.1 ^{ns24}

***: $p < 0.001$, **: $p < 0.01$ vs controls, ns: not statistically significant ($p > 0.05$)

C) Test on anti-inflammatory activity in swine model of allergic contact dermatitis (ACD)

Eight days before the elicitation of the ACD, 500 µl of 10% 2, 4-dinitrofluorobenzene (DNFB, dissolved in DMSO / acetone / olive oil [1/5/3, v/v/v]) are applied epicutaneously in divided volumes onto the basis of both ears and onto both groins (100 µl / site) for sensitization. The challenge reactions are elicited with 15 µl of DNFB (1.0%) on contralateral test sites (each 7 cm² in size) of the shaved dorsolateral back. For treatment, the compound of example 11 (= Test compound 2) and the placebo (solvent only) are applied contralaterally to 2 test sites in each animal 0.5 and 6 hours after the challenge. The test sites are clinically examined 24 hours after the challenge when inflammation peaks. The changes are scored on a scale from 0 to 4 (Table XY), allowing a combined maximal score of 12 per designated site. Skin reddening is measured reflectometrically using a* values (see Table 3)

Table 3: Scoring of clinical signs of test sites affected with ACD

Score	Erythema/Intensity	Erythema / Extent	Induration
0	absent	absent	absent
1	scarcely visible	small spotted	scarcely palpable
2	mild	large spotted	mild hardening
3	pronounced	confluent	pronounced hardening
4	severe (or livid	homogenous	pronounced and elevated

Score	Erythema/Intensity	Erythema / Extent	Induration
	discoloring)	redness	hardening

Table 4 summarizes the results of the treatment of test sites affected with ACD: A 1% solution of the Test compound 2 inhibits clinical inflammatory changes by 42%($p < 0.01$) and measured skin redness by 32 ($p < 0.05$)

Table 4:

Test sites	Clinical score (Mean, SD, n: 8+)	A* value (Mean, SD, n: 8+)
Treated with 1% Test compound 2	4.1 (1.3)	7.7 (1.6)
Treated with placebo (solvent)	7.1 (1.8)	11.7 (2.3)
Inhibition vs placebo-treated sites	42.4 (11.1)	31.9 (18.4)

+: 2 test sites each in 4 animals

References

- 1 Skytt A., Stromqvist M. and Egelrud T. (1995) Primary substrate specificity of recombinant human stratum corneum chymotryptic enzyme. *Biochem Biophys Res Commun* 211, 586-589.
- 2 Egelrud T. (1993) Purification and preliminary characterization of stratum corneum chymotryptic enzyme: a proteinase that may be involved in desquamation. *J. Invest. Dermatol.* 101, 200-204.
- 3 Yousef G.M., Scorilas A., Magklara A., Soosaipillai A. and Diamandis E.P. (2000) The KLK7 (PRSS6) gene, encoding for the stratum corneum chymotryptic enzyme is a new member of the human kallikrein gene family - genomic characterization, mapping, tissue expression and hormonal regulation. *Gene* 254, 119-128.
- 4 Simon M., Jonca N., Guerrin M., Haftek M., Bernard D., Caubet C., Egelrud T., Schmidt R. and Serre G. (2001) Refined characterization of corneodesmosin proteolysis during terminal differentiation of human epidermis and its relationship to desquamation. *J. Biol. Chem.* 276(23), 20292-20299.
- 5 Caubet C., Jonca N., Brattsand M., Guerrin M., Bernard D., Schmidt R., Egelrud T., Simon M. and Serre G. (2004) Degradation of corneodesmosome proteins by two serine proteases of the kallikrein family, SCTE/KLK5/hK5 and SCCE/KLK7/hK7. *J. Invest. Dermatol.* 122, 1235-1244.

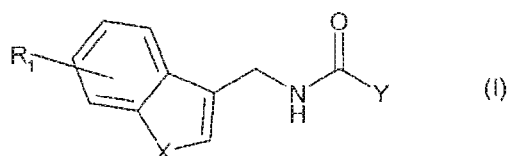
- 6 Brattsand M., Stefansson K., Lundh C., Haasum Y. and Egelrud T. (2005) A proteolytic cascade of kallikreins in the stratum corneum. *J. Invest. Dermatol.* 124(1),198-203.
- 7 Hachem J.P., Man M.Q., Crumrine D., Uchida Y., Brown B.E., Rogiers V., Roseeuw D., Feingold K.R. and Elias P.M. (2005) Sustained serine proteases activity by prolonged increase in pH leads to degradation of lipid processing enzymes and profound alterations of barrier function and stratum corneum integrity. *J. Invest. Dermatol.* 125(3),510-520.
- 8 Nylander-Lundqvist E. and Egelrud T. (1997) Formation of active IL-1 β from pro-IL-1 β catalyzed by stratum corneum chymotryptic enzyme in vitro. *Acta Derm. Venereol.* 77(3), 203-206.
- 9 Vasilopoulos Y., Cork M.J., Murphy R., Williams H.C., Robinson D.A., Duff G.W., Ward S.J. and Tazi-Ahnini R. (2004) Genetic association between an AACC insertion in the 3'UTR of the stratum corneum chymotryptic enzyme gene and atopic dermatitis. *J. Invest. Dermatol.* 123, 62-66.
- 10 Schechter N.M., Choi E.J., Wang Z.M., Hanakawa Y., Stanley J.R., Kang Y., Clayman G.L. and Jayakumar A. (2005) Inhibition of human kallikreins 5 and 7 by the serine protease inhibitor lympho-epithelial Kazal-type inhibitor (LEKTI). *Biol. Chem.* 386, 1173-1184.
- 11 Franzke C.W., Baici A., Bartels J., Christophers E. and Wiedow O. (1996) Antileukoprotease inhibits stratum corneum chymotryptic enzyme - Evidence for a regulative function in desquamation. *J. Biol. Chem.* 271, 21886-21890.
- 12 Descargues P., Deraison C., Bonnart C., Kreft M., Kishibe M., Ishida-Yamamoto A., Elias P., Barrandon Y., Zambruno G., Sonnenberg A. and Hovnanian A. (2005) Spink5-deficient mice mimic Netherton syndrome through degradation of desmoglein 1 by epidermal protease hyperactivity. *Nat. Genet.* 37(1), 56-65.
- 13 Walley A.J., Chavanas S., Moffatt M.F., Esnouf R.M., Ubhi B., Lawrence R., Wong K., Abecasis G.R., Jones E.Y., Harper J.I., Hovnanian A. and Cookson W.O. (2001) Gene polymorphism in Netherton and common atopic disease. *Nat. Genet.* 29(2), 175-178.
- 14 Nishio Y., Noguchi E., Shibasaki M., Kamioka M., Ichikawa E., Ichikawa K., Umebayashi Y., Otsuka F. and Arinami T. (2003) Association between polymorphisms in the SPINK5 gene and atopic dermatitis in the Japanese. *Genes Immun.* 4(7), 515-517.
- 15 Descargues P., Deraison C., Prost C., Fraitag S., Mazereeuw-Hautier J., D'Alessio M., Ishida-Yamamoto A., Bodemer C., Zambruno G. and Hovnanian A. (2006) Corneodesmosomal cadherins are preferential targets of stratum corneum trypsin- and chymotrypsin-like hyperactivity in Netherton syndrome. *J. Invest. Dermatol.* 126(7), 1622-1632.

- 16 Hachem J.P., Wagberg F., Schmuth M., Crumrine D., Lissens W., Jayakumar A., Houben E., Mauro T.M., Leonardsson G., Brattsand M., Egelrud T., Roseeuw D., Clayman G.L., Feingold K.R., Williams M.L., Elias P.M. (2006) Serine protease activity and residual LEKTI expression determine phenotype in Netherton syndrome. *J. Invest. Dermatol.* 126(7), 1609-1621.
- 17 Hansson L., Baeckman A., Ny A., Edlund M., Ekholm E., Hammarstroem B.E., Toernell J., Wallbrandt P., Wennbo H., and Egelrud T. (2002) Epidermal Overexpression of Stratum Corneum Chymotryptic Enzyme in Mice: A Model for Chronic Itchy Dermatitis, *J. Invest. Dermatol.* 118, 444-449.
- 18 Ny A. and Egelrud T. (2003) Transgenic mice over-expressing a serine protease in the skin: evidence of interferon gamma-independent MHC II expression by epidermal keratinocytes. *Acta Derm. Venereol.* 83, 322-327.
- 19 Ny A. and Egelrud T. (2004) Epidermal hyperproliferation and decreased skin barrier function in mice overexpressing stratum corneum chymotryptic enzyme. *Acta Derm. Venereol.* 84, 18-22.
- 20 Ekholm E. and Egelrud T. (1999) Stratum corneum chymotryptic enzyme in psoriasis. *Arch. Dermatol. Res.* 291(4), 195-200.
- 21 Otwinowski, Z. and Minor, W. (1997) Processing of X-ray diffraction data collected in oscillation mode. *Methods in Enzymology*, 276, C.W. Carter, Jr. and R.M. Sweet, Eds., Academic Press.
- 22 Kabsch W. (1993) Automatic Processing of Rotation Diffraction Data from Crystals of Initially Unknown Symmetry and Cell Constants. *J. App. Cryst.* 26, 795-800.
- 23 Kroemer M., Dreyer M.K. and Wendt K.U. (2004) APRV - a program for automated data processing, refinement and visualization. *Acta Cryst. D60*, 1679-82.
- 24 Vagin A., and Teplyakov A. (1997) MOLREP: an automated program for molecular replacement. *J. Appl. Cryst.* 30, 1022-1025.
- 25 Laxmikanthan G., Blaber S.I., Bennett M.J., Scarisbrick I.A., Juliano M.A. and Blaber M. (2005) 1.70 Å X-ray structure of human apo kallikrein 1: structural changes upon peptide inhibitor/substrate binding. *Proteins* 58(4), 802-814.
- 26 Brünger A.T., Adams P.D., Clore G.M., DeLano W.L., Gros P., Grosse-Kunstleve R.W., Jiang J.-S., Kuszewski J., Nigles M., Pannu N.S., Read R.J., Rice L.M., Simonson T. and Warren G.L. (1998) Crystallography & NMR System: A new software suite for macromolecular structure determination. *Acta Cryst.* D54, 905-921.

- 27 Johns T.A., Zou J.Y., Cowan S.W. and Kjeldgaard M. (1991) Improved methods for building protein models in electron density maps and the location of errors in these models. *Acta Cryst.*, A47, 110-119.
- 28 Engh R.A. and Huber R. (1991) Accurate bond and angle parameters for X-ray protein structure refinement. *Acta Cryst.* A47, 392-400.
- 29 Laskowski R.A., MacArthur M.W., Moss D.S. and Thornton J.M. (1993) PROCHECK: a program to check the stereochemical quality of protein structures. *J. Appl. Cryst.* 26, 238-291.
- 30 Birktoft J.J., Kraut J. and Freer S.T. (1976) A detailed structural comparison between the charge relay system in chymotrypsinogen and in alpha-chymotrypsin. *Biochemistry* 15(20), 4481-5.
- 31 Bennett M.J., Blaber S.I., Scarisbrick I.A., Dhanarajan P., Thompson S.M. and Blaber M. (2002) Crystal structure and biochemical characterization of human kallikrein 6 reveals that a trypsin-like kallikrein is expressed in the central nervous system. *J. Biol. Chem.* 277(27), 24562-24570.
- 32 Kishi T., Kato M., Shimizu T., Kato K., Matsumoto K., Yoshida S., Shiosaka S., Hakoshima T. (1999) Crystal structure of neuropsin, a hippocampal protease involved in kindling epileptogenesis. *J. Biol. Chem.* 274, 4220-4224.
- 33 Debela M., Magdolen V., Schechter N., Valachova M., Lottspeich F., Craik C.S., Choe Y., Bode W. and Goettig P. (2006) Specificity profiling of seven human tissue kallikreins reveals individual subsite preferences. *J. Biol. Chem.* E-PUB.
- 34 Yamasaki K., Schaubert J., Coda A., Lin H., Dorschner R.A., Schechter N.M., Bonnard C., Descargues P., Hovnanian A. and Gallo R.L. (2006) Kallikrein-mediated proteolysis regulates the antimicrobial effects of cathelicidins in skin. *FASEB J.* 2006 Oct;20(12):2068-80.

Claims

1. A method of identifying a ligand that binds to kallikrein 7 comprising the steps of:
 - (i) using the three dimensional structure data generated from a crystal of human kallikrein 7 wherein the binding pocket has a three-dimensional structure characterized by the structure coordinates of Table 3 to select and/or design a potential ligand that binds to kallikrein 7, and
 - (ii) identifying among the potential ligand selected in step (i), those ligands that bind to kallikrein 7 in an *in vitro*, *in vivo* or cell-based assay.
2. A modulator of kallikrein 7 characterised in that it binds in the binding pocket having a three-dimensional structure characterized by the structure coordinates of Table 3.
3. A modulator of kallikrein 7 as defined in claim 2 characterised in that it is a compound of formula

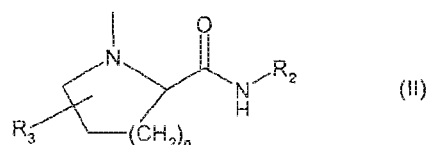


wherein

R₁ is hydrogen, cyano, (C₁₋₈)alkyl, (C₂₋₈)alkenyl, (C₂₋₈)alkynyl, halogen, (C₁₋₈)alkylamino, (C₁₋₈)alkylamino(C₁₋₈)alkyl, (C₁₋₈)alkoxy, halo(C₁₋₈)alkyl,

X is CH=CH, NH, N=CH, O or S,

Y is a group of formula



wherein

- the N-containing ring system is optionally annelated with (C₃₋₈)cycloalkyl, (C₆₋₁₈)aryl or heterocyclyl having 5 to 6 ring members and 1 to 4 heteroatoms selected from N, O, S,
- n is 1, 2 or 3,
- R₂ is
 - (C₁₋₈)alkyl, (C₁₋₈)alkylamino, (C₁₋₈)alkylamino(C₁₋₈)alkyl,

di(C₁₋₈)alkylamino(C₁₋₈)alkyl, halo(C₁₋₈)alkyl, (C₁₋₈)alkoxy, (C₁₋₈)alkoxy(C₁₋₈)alkyl,
or

- (CH₂)_m-Z, wherein Z is unsubstituted or substituted (C₃₋₈)cycloalkyl, (C₆₋₁₈)aryl or heterocyclyl having 5 to 6 ring members and 1 to 4 heteroatoms selected from N, O, S and m is 0, 1 or 2,

- R₃ is hydrogen, (C₁₋₈)alkyl, (C₁₋₈)alkoxy, (C₆₋₁₈)aryl or heterocyclyl having 5 to 6 ring members and 1 to 4 heteroatoms selected from N, O, S.

4. A compound according to claim 3, wherein

R₁ is hydrogen, ethynyl, chloro or bromo,

X is CH=CH or S,

Y is a group of formula (II), wherein

- the N-containing ring system is optionally annelated with cyclopropyl, cyclopentyl or phenyl,

- n is 1 or 2,

- R₂ is (C₁₋₈)alkyl, (C₁₋₄)alkylamino, di(C₁₋₄)alkylamino(C₁₋₄)alkyl, (C₁₋₄)alkoxy, (C₁₋₄)alkoxy(C₁₋₄)alkyl or

a group (CH₂)_m-Z, wherein Z is unsubstituted cyclohexyl, unsubstituted phenyl, phenyl substituted by (C₁₋₄)alkoxy, phenyl substituted by heterocyclyl having 6 ring members and 1 or 2 heteroatoms selected from N, O, or unsubstituted or substituted heterocyclyl having 6 ring members and 1 or 2 heteroatoms selected from N, O;

- m is 1 or 2,

- R₃ is hydrogen or (C₁₋₄)alkoxy.

5. A compound of any one of claims 3 or 4, wherein

Y is a group of formula (II), wherein

- the N-containing ring system is optionally annelated with cyclopropyl, cyclopentyl or phenyl,

- R₂ is methyl, dimethylaminoethyl, methoxyethyl, or

a group (CH₂)_m-Z, wherein Z is unsubstituted cyclohexyl, unsubstituted phenyl, phenyl substituted by methoxy, piperazinyl or morpholinyl; pyridinyl, piperidinyl, tetrahydrofuranyl, unsubstituted piperazinyl or piperazinyl substituted by methyl or phenyl,

and m, n, R₁, R₃ and X are as defined above.

6. A compound of any one of claims 3 to 5 in the form of a salt.
7. A compound of any one of claims 3 to 6 for use as a pharmaceutical.
8. A pharmaceutical composition comprising a compound of any one of claims 3 to 6 in association with at least one pharmaceutical excipient.
9. A method of treating disorders mediated by kallikrein-7 activity, which treatment comprises administering to a subject in need of such treatment an effective amount of a compound of any one of claims 3 to 6.
10. A compound of any one of claims 3 to 6 for the manufacture of a medicament for the treatment of disorders which are mediated by kallikrein-7 activity.
11. The compound of claim 9 or 10 wherein said disorder which is mediated by kallikrein-7 activity is selected from the group consisting of inflammatory and/or hyperproliferative and pruritic skin diseases such as keloids, hypertrophic scars, acne, atopic dermatitis, psoriasis, pustular psoriasis, rosacea, Netherton's syndrome or other pruritic dermatoses such as prurigo nodularis, unspecified itch of the elderly as well as other diseases with epithelial barrier dysfunction such as aged skin, inflammatory bowel disease and Crohn's disease, as well as pancreatitis, or of cancer, in particular ovarian cancer.