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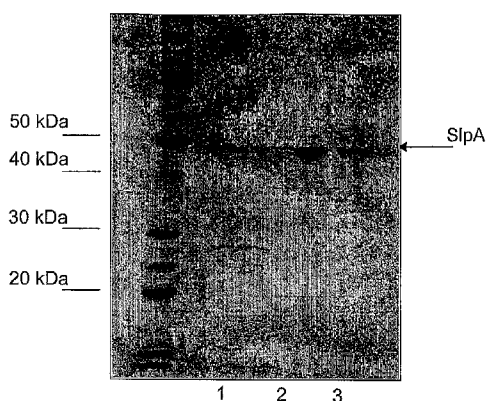
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SURFACE-LAYER PROTEIN COATED MICROSPHERES AND USES THEREOF



(57) Abstract: The invention provides surface-layer protein coated microspheres for delivery of a therapeutic agent to the intestine. These surface-layer protein coated microspheres generally include a core encapsulated by a microsphere which is coated by surface layer protein. The core includes a therapeutic agent, such as a defensin. The invention also includes methods of making and using the surface-layer protein coated microspheres of the invention for administering therapeutic agents to a subject in need thereof. The invention also includes pharmaceutical dosage units that include the surface-layer protein coated microspheres of the invention. The invention further includes various labeled defensins for use in the study of the properties and actions of defensins, and further includes the use of defensins, particularly HD5 $\alpha$  in the treatment of inflammatory conditions of the bowel, such as Crohn's disease.

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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 07/60962

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A61K 9/16 (2007.01)

USPC - 424/491; 514/962

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

USPC- 424/491; 514/962

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

USPC- 424/486; 424/489

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PubWEST (USPT, PGPB, EPAB, JPAB); Google Scholar: microsphere, intestinal epithelium, SlpA, Lactobacillus brevis, defensin, HD5, poly(DL-lactide-co-glycolide), fibronectin, colitis

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6,365,187 B2 (MATHIOWITZ, et al.) 02 April 2002 (02.04.2002); abstract; col 1, ln 28-29; col 2, ln 53; col 7, ln 21, 41, 65; col 14, ln 61-62, 65-67	1-33
Y	AVALL-JAASKELAINEN, S. et al., "Surface Display of the Receptor-Binding Region of the Lactobacillus brevis S-Layer Protein in Lactobacillus lactis Provides Nonadhesive Lactococci with the Ability to Adhere to Intestinal Epithelial Cells", Applied and Environmental Microbiology, April 2003, 69(4):2230-2236; abstract	1-33
Y	WEHKAMP, J. et al., "Reduced Paneth cell alpha-defensins in ileal Crohn's disease", PNAS, December 2005, 102(50):18129-18134; abstract	4, 5, 12, 14-17, 21, 22, 28 and 31

☐ Further documents are listed in the continuation of Box C.

## \* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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