

Title (en)  
STARCH CAPSULES CONTAINING MICROORGANISMS AND/OR POLYPEPTIDES OR PROTEINS AND A PROCESS FOR PRODUCING THEM

Title (de)  
STÄRKEKAPSELN, WELCHE MIKROORGANISMEN UND/ODER POLYPEPTIDE ODER PROTEINE ENTHALTEN UND VERFAHREN ZU DEREN HERSTELLUNG

Title (fr)  
CAPSULES D'AMIDON CONTENANT DES MICRO-ORGANISMES ET/OU DES POLYPEPTIDES OU DES PROTEINES, ET LEUR PROCEDE DE PRODUCTION

Publication  
**EP 1063976 A1 20010103 (EN)**

Application  
**EP 99911844 A 19990329**

Priority  
• FI 9900259 W 19990329  
• FI 980707 A 19980327

Abstract (en)  
[origin: WO9952511A1] The invention relates to starch capsules which protect various substances, such as living microbes or enzymes, against the effect of the environment or the intestines, and to a method for manufacturing such capsules. A fraction of a suitable size category is chosen from the starch granules, the porosity of the granules is improved by hydrolyzing, and the granules are filled with desired substances, such as living microbes and/or enzymes. When desired, the starch granules can be coated with a suitable biopolymer, such as starch or amylose.

IPC 1-7  
**A61K 9/52; A61K 9/20; A61K 47/36**

IPC 8 full level  
**A61K 9/16** (2006.01); **A61K 9/19** (2006.01); **A61K 9/52** (2006.01); **A61K 35/74** (2006.01); **A61K 35/744** (2015.01); **A61K 35/747** (2015.01);  
**A61K 47/36** (2006.01); **C12N 1/00** (2006.01)

CPC (source: EP)  
**A61K 9/1652** (2013.01); **A61K 9/19** (2013.01); **A61K 35/744** (2013.01); **A61K 35/747** (2013.01)

Citation (search report)  
See references of WO 9952511A1

Designated contracting state (EPC)  
AT BE CH DE DK ES FI FR GB GR IE IT LI NL PT SE

DOCDB simple family (publication)  
**WO 9952511 A1 19991021**; AU 3038699 A 19991101; BR 9909133 A 20001205; CA 2324364 A1 19991021; EP 1063976 A1 20010103;  
FI 104405 B 20000131; FI 980707 A0 19980327; FI 980707 A 19990928; JP 2002511403 A 20020416

DOCDB simple family (application)  
**FI 9900259 W 19990329**; AU 3038699 A 19990329; BR 9909133 A 19990329; CA 2324364 A 19990329; EP 99911844 A 19990329;  
FI 980707 A 19980327; JP 2000543121 A 19990329