

Title (en)  
POLYSACCHARIDE / BMP COMPLEXES WHICH ARE SOLUBLE AT PHYSIOLOGICAL PH

Title (de)  
BEI PHYSIOLOGISCHEM PH-WERT LÖSLICHE POLYSACCHARID-/BMP-KOMPLEXE

Title (fr)  
COMPLEXES POLYSACCHARIDE / BMP SOLUBLES A PH PHYSIOLOGIQUE

Publication  
**EP 2501389 A1 20120926 (FR)**

Application  
**EP 10805484 A 20101119**

Priority  
• FR 2009001332 W 20091119  
• FR 1000537 A 20100209  
• US 30282310 P 20100209  
• IB 2010002970 W 20101119

Abstract (en)  
[origin: WO2011061615A1] The invention relates to a polysaccharide/BMP complex, wherein the BMP is selected from the group made up of BMP-2 and BMP-7, said complex being soluble at physiological pH, characterized in that the polysaccharide/BMP weight ratio is less than 15, the polysaccharide being selected from the group of polysaccharides comprising carboxyl functional groups, at least one of which is substituted with at least one hydrophobic radical, denoted Ah: - said hydrophobic radical Ah being a residue of a hydrophobic compound selected from hydrophobic alcohols or acids comprising a linear, branched or cyclic alkyl chain containing at least 6 carbon atoms, said hydrophobic radical Ah being linked to a linker arm R via a function G resulting from coupling between at least one reactive function of said hydrophobic compound and one reactive function of the linker-arm precursor R'. Said linker arm R is linked to the polysaccharide via a bond F resulting from coupling between a reactive function of the linker-arm precursor R' and a carboxyl function of the anionic polysaccharide, R being an at least divalent radical consisting of an optionally branched and/or unsaturated chain comprising between 1 and 15 carbon atoms, optionally comprising one or more heteroatoms, such as O, N or/ and S, and resulting from a precursor R' which has at least two reactive functions, at least one being an amino function and the others, which may be identical or different, being selected from the group made up of alcohol, acid or amino functions. F is an amide function, - G being either an amide, ester or carbamate function, - the unsubstituted carboxyl functions of the anionic polysaccharide being in the form of a carboxylate of an alkali metal cation, preferably such as Na+ or K+. Said polysaccharide comprises carboxyl functional groups which are amphiphilic at neutral pH, the BMP being selected from the group made up of human recombinant BMP-2 and BMP-7, and homologues thereof. The invention also relates to the use of these complexes for preparing pharmaceutical formulations.

IPC 8 full level  
**A61K 31/70** (2006.01); **A61K 38/18** (2006.01); **A61K 47/36** (2006.01); **C08B 37/00** (2006.01)

CPC (source: EP US)  
**A61K 31/70** (2013.01 - EP US); **A61K 47/61** (2017.07 - EP US); **A61P 19/00** (2017.12 - EP); **C08B 37/0018** (2013.01 - EP US); **C08B 37/0021** (2013.01 - EP US); **C08L 5/00** (2013.01 - EP US); **C08L 5/02** (2013.01 - EP US); **A61K 38/00** (2013.01 - EP US); **A61K 47/36** (2013.01 - EP US)

Citation (search report)  
See references of WO 2011061615A1

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)  
**WO 2011061615 A1 20110526**; EP 2501389 A1 20120926; FR 2956116 A1 20110812; JP 2013511505 A 20130404; US 2011178011 A1 20110721; US 2013245246 A1 20130919

DOCDB simple family (application)  
**IB 2010002970 W 20101119**; EP 10805484 A 20101119; FR 1000537 A 20100209; JP 2012539430 A 20101119; US 201313836580 A 20130315; US 95061610 A 20101119