Title (en)

NANOPARTICLES AND MICROPARTICLES OF NON-LINEAR HYDROPHILIC-HYDROPHOBIC MULTIBLOCK COPOLYMERS

Title (de)

NANOPARTIKEL UND MIKROPARTIKEL AUS NICHTLINEAREN HYDROPHILEN-HYDROPHOBEN MULTIBLOCKCOPOLYMEREN

Title (fr)

NANOPARTICULES ET MICROPARTICULES DE COPOLYMERES MULTIBLOC HYDROPHILES-HYDROPHOBES NON LINEAIRES

Publication

EP 0712421 A1 19960522 (EN)

Application

EP 94925102 A 19940722

Priority

- US 9408287 W 19940722
- US 9637093 A 19930723
- US 21067794 A 19940318
- US 26544094 A 19940624

Abstract (en)

[origin: WO9503356A1] Particles are provided that are not rapidly cleared from the blood stream by the macrophages of the reticuloendothelial system, and that can be modified to achieve variable release rates or to target specific cells or organs. The particles have a core of a multiblock copolymer formed by covalently linking a multifunctional compound with one or more hydrophobic polymers and one or more hydrophilic polymers, and contain a biologically active material. The terminal hydroxyl group of the poly(alkylene glycol) can be used to covalently attach onto the surface of the particles biologically active molecules, including antibodies targeted to specific cells or organs, or molecules affecting the charge, lipophilicity or hydrophilicity of the particle. The surface of the particle can also be modified by attaching biodegradable polymers of the same structure as those forming the core of the particles. The typical size of the particles is between 180 nm and 10,000 nm, preferably between 180 nm and 240 nm, although microparticles can also be formed as described herein. The particles can include magnetic particles or radiopaque materials for diagnostic imaging, biologically active molecules to be delivered to a site, or compounds for targeting the particles. The particles have a prolonged half-life in the blood compared to particles not containing poly(alkylene glycol) moieties on the surface.

IPC 1-7

C08G 81/00; C08J 3/12; C08G 63/664; A61K 9/51; A61K 9/16

IPC 8 full level

A61B 5/055 (2006.01); **A61K 9/14** (2006.01); **A61K 9/51** (2006.01); **A61K 47/48** (2006.01); **A61K 49/22** (2006.01); **A61K 51/12** (2006.01); **C08G 63/664** (2006.01); **C08G 63/91** (2006.01); **C08G 65/00** (2006.01); **C08G 79/02** (2006.01); **C08G 81/00** (2006.01); **C08J 3/12** (2006.01); **G01N 33/545** (2006.01)

CPC (source: EP)

A61K 9/5146 (2013.01); **A61K 9/5161** (2013.01); **A61K 47/6921** (2017.07); **A61K 47/6935** (2017.07); **A61K 49/223** (2013.01); **A61K 51/1241** (2013.01); **A61K 51/1251** (2013.01); **B82Y 5/00** (2013.01); **C08G 63/664** (2013.01); **C08G 81/00** (2013.01); A61K 2123/00 (2013.01)

Citation (search report)

See references of WO 9503356A1

Designated contracting state (EPC)

AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)

WO 9503356 A1 19950202; CA 2167920 A1 19950202; EP 0712421 A1 19960522; JP H09504308 A 19970428

DOCDB simple family (application)

US 9408287 W 19940722; CA 2167920 A 19940722; EP 94925102 A 19940722; JP 50533795 A 19940722