(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
3 January 2003 (03.01.2003)

PCT

(10) International Publication Number
WO 03/000014 A2

(51) International Patent Classification: Not classified

(21) International Application Number: PCT/US02/19870

(22) International Filing Date: 21 June 2002 (21.06.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/299,989 21 June 2001 (21.06.2001) US

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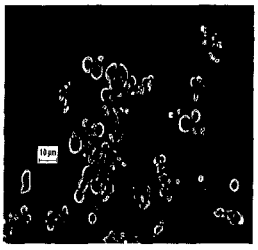
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

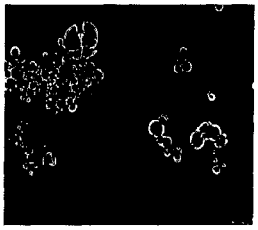
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(54) Title: SPHERICAL PROTEIN PARTICLES AND METHODS OF MAKING AND USING THEM

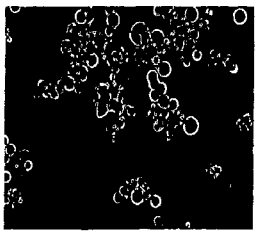
MORPHOLOGY OF MONOCLONAL ANTIBODY SPPs



A. Infliximab (Remicade™) SPPs



B. Rituximab (Rituxan™) SPPs



C. Trastuzumab (Herceptin™) SPPs

(57) Abstract: This invention relates to SPPs, spherical nanocrystalline composite particles or crystalline SPPs of biologically active proteins or compositions, including formulations, comprising such SPPs, spherical nanocrystalline composite particles or crystalline SPPs. More particularly, methods are provided for the production of SPPs, spherical nanocrystalline composite particles or crystalline SPPs of high concentration of biologically active proteins, and for the preparation of stabilized SPPs, spherical nanocrystalline composite particles or crystalline SPPs for use alone, or in dry or slurry compositions. This invention also relates to methods for stabilization, storage and delivery of biologically active proteins using SPPs, spherical nanocrystalline composite particles or crystalline SPPs. The present invention further relates to methods using SPPs, spherical nanocrystalline composite particles or crystalline SPPs, or compositions or formulations comprising them, for biomedical applications, including biological delivery to humans and animals. More particularly, SPPs, spherical nanocrystalline composite particles or crystalline SPPs are used as a carrier-free delivery system which can slowly release biologically active proteins to a subject, where and when they are needed.

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Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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Published:

— *without international search report and to be republished upon receipt of that report*

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