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[Continued on next page]

(54) Title: METHOD OF PROVIDING PARTICLES HAVING BIOLOGICAL-BINDING AREAS FOR BIOLOGICAL APPLICATIONS

(57) Abstract: The present invention includes micro-sphere composition, methods of making binding assays. The present invention also includes a micro-sphere for binding biological molecules without pretreatment. The micro-sphere includes a spherical glass substrate having one or more metal nanoparticle regions that are exposed from within the glass, wherein the micro-sphere is capable of binding biological molecules without pretreatment.

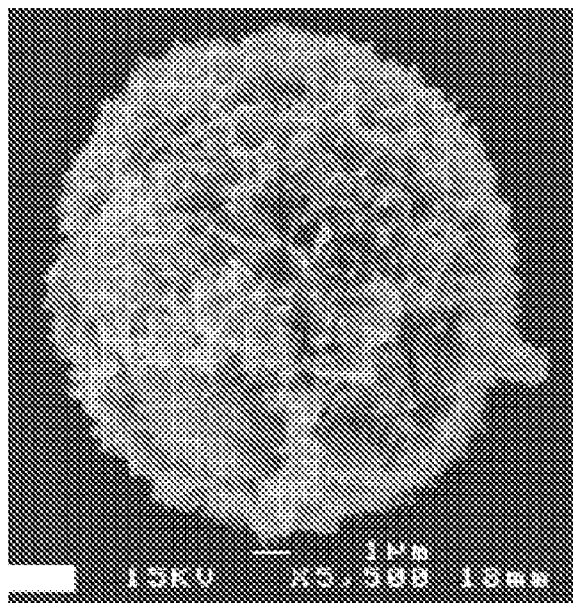


FIG. 8C

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OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2009/039807**A. CLASSIFICATION OF SUBJECT MATTER***G01N 33/552(2006.01)i, G01N 33/553(2006.01)i, G01N 33/543(2006.01)i*

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

B. FIELDS SEARCHEDMinimum documentation searched (classification system followed by classification symbols)
IPC as aboveDocumentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean Utility models and applications for Utility models since 1975
Japanese Utility models and application for Utility models since 1975Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS (KIPO internal), Google, NCBI PubMed (glass, silica*, nano, metal, surface, etc.)**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2007/0155021 A1 (J. ZHANG, et al.) 5 July 2007. See the whole document, especially abstract, [0091]-[0092], [0096]-[0098], [0117]-[0120], [0128], figures 1-4.	1-22
P, X	WO 2008/154931 A1 (DAN-MARKS TEKNISKE UNIVERISTET) 24 December 2008. See the whole document, especially abstract.	1-22
A	US 2004/0171076 A1 (M. J. DEJNEKA, et al.) 2 September 2004. See the whole document, especially abstract.	1-22
X -----	A. PERRO, et al. "Design and synthesis of Janus micro- and nanoparticles." In J. Mater. Chem. Vol.15:3745-3760 (2005).	9-14 -----
A	See the whole document, especially abstract, page 3748, right column, lines 30-46, figures 8, 14, 16, 19, 20.	1-8, 15-22
X -----	H. ZHANG, et al. "Synthesis of hierachically porous silica and metal oxide beads using emulsion-template polymer scaffolds." In Chem. Mater. Vol.16:4245-4256 (2004).	9-14 -----
A	See the whole document, especially abstract, page 4246, Materials and Methods, figures, 1, 3, 5, 8, 10.	1-8, 15-22

 Further documents are listed in the continuation of Box C. See patent family annex.

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Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2007-0155021 A1	05.07.2007	WO 2008-016375 A2 WO 2008-016375 A3 WO 2008-016375 A3	07.02.2008 14.08.2008 07.02.2008
WO 2008-154931 A1	24.12.2008	None	
US 2004-0171076 A1	02.09.2004	US 2006-0252088 A1 US 07241629 B2 US 2003-0119207 A1	09.11.2006 10.07.2007 26.06.2003