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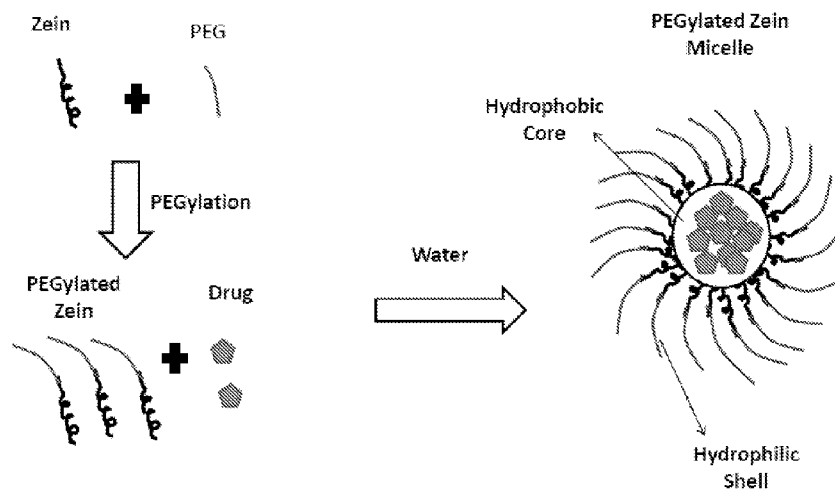
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(54) Title: POLYMER CONJUGATED PROTEIN MICELLES

**Figure 1**(57) Abstract: The invention encompasses micelle assemblies, compositions having micelle assemblies, and methods for preparing micelle assemblies and compositions thereof. The invention also encompasses a prolamine protein conjugated to a polymer, such as a polyethylene glycol (PEG) chain, which conjugates can be used to prepare micelle assemblies. The invention further encompasses methods of encapsulating molecules using the conjugates of the invention. The micelle assemblies can be used for a variety of applications, such as treating cancer, targeting tumors, reducing the toxicity of a drug *in vivo*, increasing the efficacy of an encapsulated agent *in vivo*, protecting an encapsulated agent against degradation, and enhancing the water solubility of a drug or other agent.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 12/26484

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A61K 9/127 (2012.01)

USPC - 424/450

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
424/450

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
424/450

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PUBWEST, Google Scholar, WIPO, Google, Micelle, vesicle, microparticles, microsphere, microvesicle, nanomicelle, colloidal dispersion, self assembling block copolymer, self assembling graft copolymer, hydrophilic polymer, hydrophobic polymer, polymersomes, liposomes, PEG, polyethylene glycol, zein, gliadin, hoedein, kafirin, drug delivery

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,324,351 A (Oshlack et al.) 28 June 1994 (28.06.1994) entire document esp.col. 3, ln 60-63, col. 4, ln 1-5; 19-25, col. 5, ln 62-68; col. 6, ln 15-18, ln 35-40; col. 7, ln 45-50, col. 8, ln 10-45, col. 10, ln 20-45	1-35
Y	US 6,020,008 A (Li) 01 February 2000 (01.02.2000) entire document esp. col. 3, ln 25-30, col. 4, ln 25-28, col. 5, ln 30-36	1-35
Y	US 2008/0260833 A1 (Hirt et al.) 23 October 2008 (23.10.2008) entire document esp.(para[0034], [0043]-[0049], [0055]-[0058]) 2, 8-18, 27, 29-35	2, 8-18, 27, 29-35
Y	US 2004/0253315 A1 Ogawa et al. 16 December 2004 (16.12.2004) entire document esp. para[0010]-[0011], [0020], [0023], [0029]-[0033], [0050]-[0051], [0070]-[0077], [0087]-[0089] 19-24	19-24
Y	US 2010/0015050 A1 (Panyam et al.) 21 January 2010 (21.01.2010) entire document esp. abstract, para[0038], [0047], [0048], [0049], [0052]-[0056], [0060]-[0066], [0068]	25-28
Y	US 2010/0003336 A1 (Deming et al.) 07 January 2010 (07.01.2010) entire document esp. abstract, para[0006], [0010], [0018], [0019], [0021], [0036], [0038]-[0040], [0092]	11-12, 17/(11-12), 18/(11-12), 29
Y	US 2009/0214419 A1 (Therien et al.) 27 August 2009 (27.08.2009) entire document esp. para[0062]-[0063]	13, 17/(13), 18/(13)

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2009/0041685 A1 (Baviskar et al.) 12 February 2009 (12.02.2009) entire document esp. para[0018], [0074]	14-16, 17/(14-15), 18/(14-15), 30-35
Y	US 6,908,625 B2 (Lee et al.) 21 June 2005 (21.06.2005) entire document esp. col. 1, ln 10-15; col. 2, ln 1-5, col. 3, ln 1-5,	16, 31-34
Y	US 5,962,508 A (Billoni et al.) 05 October 1999 (05.10.1999) entire document esp. col. 5, ln 35	35