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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
14 March 2013 (14.03.2013)

WIPO | PCT

(10) International Publication Number
WO 2013/036847 A1

(51) International Patent Classification:
A61K 47/48 (2006.01)

(21) International Application Number:
PCT/US2012/054278

(22) International Filing Date:
7 September 2012 (07.09.2012)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/531,990 7 September 2011 (07.09.2011) US

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(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report (Art. 21(3))*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

(54) **Title**: HYDROGELS WITH BIODEGRADABLE CROSSLINKING

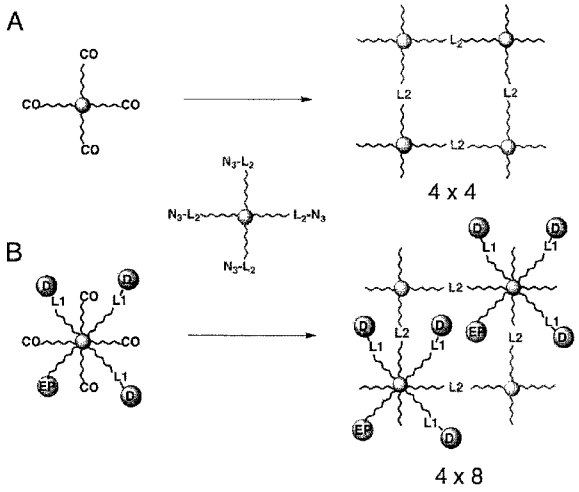


Figure2

(57) **Abstract**: Hydrogels that degrade under appropriate conditions of pH and temperature by virtue of crosslinking compounds that cleave through an elimination reaction are described. The hydrogels may be used for delivery of various agents, such as pharmaceuticals. This invention provides hydrogels that degrade to smaller, soluble components in a non-enzymatic process upon exposure to physiological conditions and to methods to prepare them. The hydrogels are prepared from crosslinking agents that undergo elimination reactions under physiological conditions, thus cleaving the crosslinking agent from the backbone of the hydrogel. The invention also relates to the crosslinking agents themselves and intermediates in forming the hydro gels of the invention. The biodegradable hydro gels prepared according to the methods of the invention may be of use in diverse fields, including biomedical engineering, absorbent materials, and as carriers for drug delivery.

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