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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
23 June 2005 (23.06.2005)

PCT

(10) International Publication Number
WO 2005/056749 A3

(51) International Patent Classification[7]: A61K 47/00, C12N 15/09

(21) International Application Number: PCT/IB2004/004406

(22) International Filing Date: 8 December 2004 (08.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/527,764 9 December 2003 (09.12.2003) US

(71) Applicant *(for all designated States except US)*: **ENGENEIC MOLECULAR DELIVERY PTY LTD.** [AU/AU]; 105 Delhi Road, Riverside Corporate Park, North Ryde, NSW 2113 (AU).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **BRAHMBHATT, Himanshu** [AU/AU]; 96 Prairie Vale Road, Bossley Park, Sydney, NSW 2176 (AU). **MACDIARMID, Jennifer** [AU/AU]; 8 Lombard Street Glebe, Sydney, NSW 2037 (AU).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, 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, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

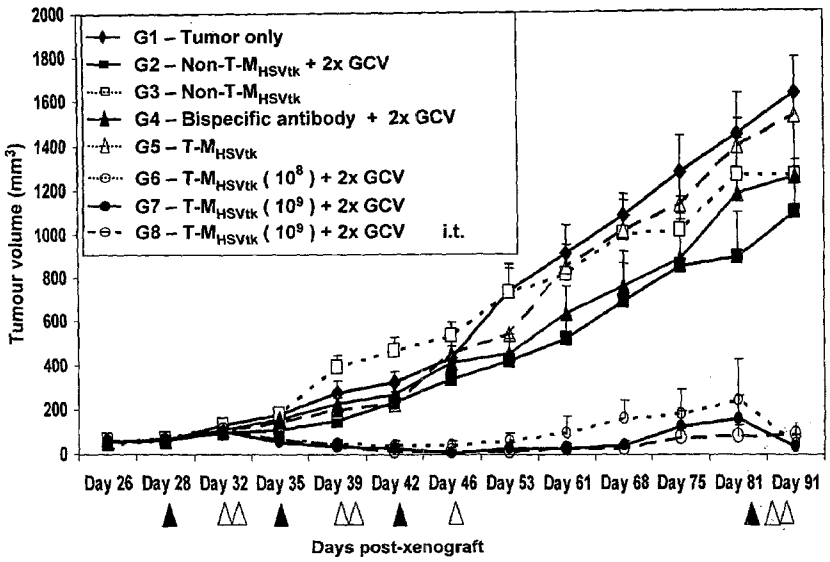
(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

(88) Date of publication of the international search report:
13 October 2005

[Continued on next page]

(54) Title: TARGETED GENE DELIVERY TO NON-PHAGOCYTIC MAMMALIAN CELLS VIA BACTERIALLY DERIVED INTACT MINICELLS



(57) Abstract: A method of targeting bacterially-derived, intact minicells to specific, non-phagocytic mammalian cells employs bispecific ligands to deliver nucleic acids efficiently to the mammalian cells. Bispecific ligands, comprising (i) a first arm that carries specificity for a bacterially-derived minicell surface structure and (ii) a second arm that carries specificity for a non-phagocytic mammalian cell surface receptor are useful for targeting minicells to specific, non-phagocytic mammalian cells and causing endocytosis of minicells by non-phagocytic cells.

WO 2005/056749 A3

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.