

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
13 December 2007 (13.12.2007)

PCT

(10) International Publication Number
WO 2007/143711 A2

(51) International Patent Classification: **Not classified**

P. [US/US]; 1019 Milton Street, Apt. 204, Madison, WI 53715 (US).

(21) International Application Number:
PCT/US2007/070587

(74) Agents: **LEECK, Charles, L.** et al.; Quarles & Brady, LLP, 411 East Wisconsin Avenue, Milwaukee, Wisconsin 53202-4497 (US).

(22) International Filing Date: 7 June 2007 (07.06.2007)

(25) Filing Language: English

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, 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, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(26) Publication Language: English

(30) Priority Data:
60/811,618 7 June 2006 (07.06.2006) US

(71) Applicant (for all designated States except US): **WISCONSIN ALUMNI RESEARCH FOUNDATION** [US/US]; 614 Walnut Street, 13th Floor, Madison, Wisconsin 53726 (US).

(72) Inventors; and

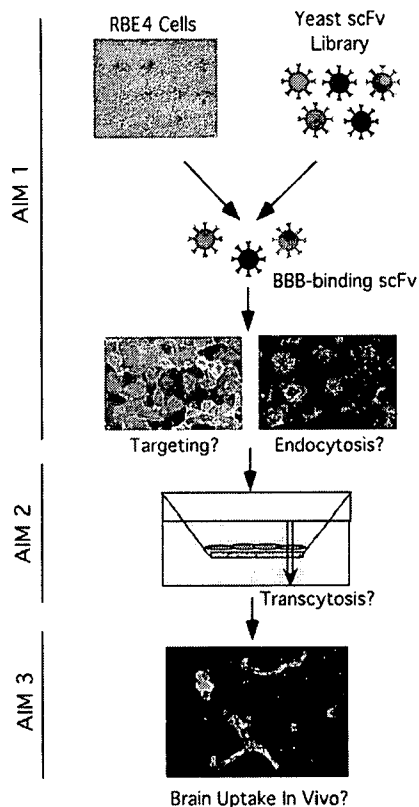
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,

(75) Inventors/Applicants (for US only): **SHUSTA, Eric, V.** [US/US]; 1023 Chandler Street, Madison, WI 53715 (US). **WANG, Xin, X.** [CN/US]; 348 Market Street East, Apt. 382, Gaithersburg, MD 20878 (US). **CHO, Yongku,**

[Continued on next page]

(54) Title: BLOOD-BRAIN BARRIER TARGETING ANTIBODIES

(57) Abstract: This invention provides antibodies that bind brain endothelial cell receptors resulting in endocytosis/transcytosis of the receptor and bound ligands. In some embodiments, the ligand comprises the antibody in combination with a pharmaceutically active compound and the antibody directs delivery of the compound across the blood brain barrier (BBB). The invention also provides methods of identifying endothelial cell specific antibodies by panning the library against cultured cell monolayers. The invention further allows for identifying endothelial cell receptors that bind the antibody thereby providing target receptors against which to isolate further cognate ligands and their associated transport systems and by which to identify transcytosis transporters targeted by the antibodies.





FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, 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).

— *with sequence listing part of description published sepa-
rately in electronic form and available upon request from
the International Bureau*

Published:

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

*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*