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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
13 July 2006 (13.07.2006)

PCT

(10) International Publication Number
WO 2006/072620 A1

(51) International Patent Classification:
C07K 16/00 (2006.01) *C07K 19/00* (2006.01)
C12N 15/62 (2006.01)

(21) International Application Number:
PCT/EP2006/050059

(22) International Filing Date: 5 January 2006 (05.01.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/641,144 5 January 2005 (05.01.2005) US

(71) Applicant and
(72) Inventor: **RÜKER, Florian** [AT/AT]; Montigasse 6, A-1170 Vienna (AT).

(72) Inventor; and
(75) Inventor/Applicant *(for US only)*: **WOZNIAK-KNOPP, Gordana** [SI/AT]; Peter-jordan-strasse 163/2/1, A-1180 Vienna (AT).

(74) Agent: **Sonn & Partner Patentanwälte**; Riemergasse 14, A-1010 Vienna (AT).

(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, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, 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, LV, 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).

Declaration under Rule 4.17:
— *of inventorship (Rule 4.17(iv))*

Published:
— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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.

WO 2006/072620 A1

(54) **Title:** SYNTHETIC IMMUNOGLOBULIN DOMAINS WITH BINDING PROPERTIES ENGINEERED IN REGIONS OF THE MOLECULE DIFFERENT FROM THE COMPLEMENTARITY DETERMINING REGIONS

(57) **Abstract:** Method for engineering an immunoglobulin comprising at least one modification in a structural loop region of said immunoglobulin and determining the binding of said immunoglobulin to an epitope of an antigen, wherein the unmodified immunoglobulin does not significantly bind to said epitope, comprising the steps of: - providing a nucleic acid encoding an immunoglobulin com- prising at least one structural loop region, - modifying at least one nucleotide residue of at least one of said structural loop regions, - transferring said modified nucleic acid in an expression system, - expressing said modified immunoglobulin, - contacting the expressed modified immunoglobulin with an epitope, and - determining whether said modified immunoglobulin binds to said epitope, as well as modified immunoglobulins.