

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
12 April 2007 (12.04.2007)

PCT

(10) International Publication Number
WO 2007/039552 A1

(51) International Patent Classification:

A61K 39/385 (2006.01) C07K 14/545 (2006.01)
C12N 7/04 (2006.01)

(21) International Application Number:

PCT/EP2006/066866

(22) International Filing Date:

28 September 2006 (28.09.2006)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/721,106 28 September 2005 (28.09.2005) US

CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, 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.

(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).

(71) Applicant (for all designated States except US): CYTOS BIOTECHNOLOGY AG [CH/CH]; Wagistrasse 25, CH-8952 Schlieren (CH).

(72) Inventors; and

(75) Inventors/Applicants (for US only): BACHMANN, Martin [CH/CH]; Cytos Biotechnology AG, Goldackerweg 8, CH-8472 Seuzach (CH). SPOHN, Gunther [DE/CH]; Michelstrasse 15, CH-8049 Zürich (CH).

(74) Agent: PETER, Stefan; Cytos Biotechnology AG, Wagistrasse 25, CH-8952 Schlieren (CH).

(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,

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))
- of inventorship (Rule 4.17(iv))

Published:

- with international search report
- with sequence listing part of description published separately in electronic form and available upon request from the International Bureau

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.

(54) Title: INTERLEUKIN-1 CONJUGATES AND USES THEREOF

(57) Abstract: The present invention is related to the fields of molecular biology, virology, immunology and medicine. The invention provides a composition comprising an ordered and repetitive antigen array, wherein the antigen is an IL-1 protein, an IL-1 mutein or an IL-1 fragment. More specifically, the invention provides a composition comprising a virus-like particle, and at least one IL-1 protein, IL-1 mutein or at least one IL-1 fragment linked thereto. The invention also provides a process for producing the composition. The compositions of the invention are useful in the production of vaccines for the treatment of inflammatory diseases, and chronic autoimmune diseases, genetic diseases and cardiovascular diseases. The composition of the invention efficiently induces immune responses, in particular antibody responses. Furthermore, the compositions of the invention are particularly useful to efficiently induce self-specific immune responses within the indicated context.

WO 2007/039552 A1