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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
24 November 2005 (24.11.2005)

PCT

(10) International Publication Number
WO 2005/111201 A1

(51) International Patent Classification[7]: C12N 7/04, A61K 39/00, 39/187

(21) International Application Number: PCT/EP2005/005377

(22) International Filing Date: 18 May 2005 (18.05.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10 2004 025 452.4 19 May 2004 (19.05.2004) DE

(71) Applicant *(for all designated States except US)*: **BOEHRINGER INGELHEIM VETMEDICA GMBH** [DE/DE]; Binger Str. 173, 55216 Ingelheim (DE).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **MEYERS, Gregor** [DE/DE]; Albstrasse 1, 72141 Walddorfhaeslach (DE). **EGE, Andreas** [DE/DE]; Gottlieb Olpp Str. 37, 72076 Tübingen (DE). **MEYER, Christiane** [DE/DE]; Treschowstrasse 31, 48163 Münster (DE). **VON FREYBURG, Martina** [DE/DE]; Schickhardtstr. 15, 74076 Heilbronn (DE).

(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, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, 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, 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*
— *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.

(54) Title: VACCINE COMPRISING AN ATTENUATED PESTIVIRUS

(57) Abstract: The present invention relates to attenuated pestivurses, in particular to attenuated BVDV, wherein at least one mutation is in the coding sequence for glycoprotein Erns and at least another mutation in the coding sequence for Npro which preferably leads to combined inactivation of the RNase activity residing in glycoprotein Erns in addition to the inactivation of the (hypothesized) immunemodulating activity residing in Npro.The invention also relates to methods for attenuating pestiviruses such as BVDV, nucleic acids encoding said pestiviruses, in particular BVDV, compositions and vaccines comprising the attenuated pestiviruses, in particular BVDV of the invention.

WO 2005/111201 A1