

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

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
19 May 2011 (19.05.2011)

(10) International Publication Number
WO 2011/059950 A1

(51) International Patent Classification:
A61K 39/102 (2006.01) *A61P 31/04* (2006.01)

(21) International Application Number:
PCT/US2010/055951

(22) International Filing Date:
9 November 2010 (09.11.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/259,728 10 November 2009 (10.11.2009) US

(71) Applicant (for all designated States except US):
BOEHRINGER INGELHEIM VETMEDICA, INC.
[US/US]; 2621 North Belt Highway, St. Joseph, Missouri
64506 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **JORDAN, Dianna Marie Murphy** [US/US]; Boehringer Ingelheim Vetmedica, Inc., 2621 North Belt Highway, St. Joseph, Missouri 64506 (US). **KROLL, Jeremy J.** [US/US]; Boehringer Ingelheim Vetmedica, Inc., 2621 North Belt Highway, St. Joseph, Missouri 64506 (US). **UTLEY, Philip** [US/US]; 502 8th Avenue, Slater, Iowa 50244 (US).

(74) Agents: **MORRIS, Michael P.** et al.; Boehringer Ingelheim Pharmaceuticals, Inc., 900 Ridgebury Road, P.O. Box 368, Ridgefield, CT 06877-0368 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, 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, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, 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, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) Title: ACTINOBACILLUS SUI ANTIGENS

(57) Abstract: The invention provides immunogenic compositions useful for inhibiting, treating, protecting, or preventing infection by *Actinobacillus suis*. These immunogenic compositions are demonstrated to usefully stimulate immunogenic responses in treated pigs. Some vaccines stimulated reactions sufficient to be protective against *A. suis*. In addition, the invention provides kits comprising the immunogenic compositions; as well as, methods of using the compositions and kits.



WO 2011/059950 A1