



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : C12Q 1/70, 1/68, C12P 21/06, C07H 21/04, A61K 39/00, 39/12, 39/21, 39/17	A1	(11) International Publication Number: WO 00/15853 (43) International Publication Date: 23 March 2000 (23.03.00)
(21) International Application Number: PCT/US99/21081 (22) International Filing Date: 14 September 1999 (14.09.99) (30) Priority Data: 09/152,845 14 September 1998 (14.09.98) US (71) Applicant: MOUNT SINAI SCHOOL OF MEDICINE OF THE CITY, UNIVERSITY OF NEW YORK [US/US]; One Gustave Levy Place, New York, NY 10029-6574 (US). (72) Inventors: GARCIA-SASTRE, Adolfo; 1249 Park Avenue #8D, New York, NY 10029 (US). PALESE, Peter; 414 Highwood Avenue, Leonia, NJ 07605 (US). (74) Agents: CORUZZI, Laura, A. et al.; Pennie & Edmonds LLP, 1155 Avenue of the Americas, New York, NY 10036 (US).		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>

(54) Title: RECOMBINANT NEWCASTLE DISEASE VIRUS RNA EXPRESSION SYSTEMS AND VACCINES**(57) Abstract**

This invention relates to genetically engineered Newcastle disease viruses and viral vectors which express heterologous genes or mutated Newcastle disease viral genes or a combination of viral genes derived from different strains of Newcastle disease virus. The invention relates to the construction and use of recombinant negative strand NDV viral RNA templates which may be used with viral RNA-directed RNA polymerase to express heterologous gene products in appropriate host cells and/or to rescue the heterologous gene in virus particles. In a specific embodiment of the invention, the heterologous gene product is a peptide or protein derived from the genome of a human immunodeficiency virus. The RNA templates of the present invention may be prepared by transcription of appropriate DNA sequences using any DNA-directed RNA polymerase such as bacteriophage T7, T3, SP6 polymerase, or eukaryotic polymerase I.