



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : C12N 15/51, 7/01, C07K 14/02, 16/08, C12Q 1/68, A61K 39/29	A1	(11) International Publication Number: WO 99/66047 (43) International Publication Date: 23 December 1999 (23.12.99)
(21) International Application Number: PCT/SG98/00045 (22) International Filing Date: 19 June 1998 (19.06.98) (71) Applicant (for all designated States except US): GOVERNMENT OF THE REPUBLIC OF SINGAPORE [SG/SG]; Ministry of Health, College of Medicine Building, 18 College Road, Singapore 169854 (SG). (72) Inventors; and (75) Inventors/Applicants (for US only): OON, Chong, Jin [SG/SG]; 14A Princess of Wales Road, Singapore 266 914 (SG). LIM, Gek, Keow [SG/SG]; 16 Telok Kurau, Lorong G, Singapore 426180 (SG). LEONG, Ai, Lin [SG/SG]; Block 263, Yishun Street 22 #12-161, Singapore 760263 (SG). ZHAO, Yi [SG/SG]; Block 345, Bukit Batok Street 34 #12-270, Singapore 650345 (SG). CHEN, Wei, Ning [SG/SG]; Block 104, Spottiswoode Park Road #22-114, Singapore 080104 (SG). (74) Agent: DREW & NAPIER; 20 Raffles Place, #17-00 Ocean Towers, Singapore 048620 (SG).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, 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, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, 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, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>
(54) Title: A VACCINE-INDUCED HEPATITIS B VIRAL STRAIN AND USES THEREOF (57) Abstract This invention provides an isolated strain of Hepatitis B virus designated Human Hepatitis B Virus Surface Antigen-δ-145 Singapore Strain (Glycine to Arginine) which constituent viral genome is deposited under Accession Nos. P97121504, P97121505 and P97121506 with the European Collection of Cell Culture on 15th December 1997. This invention also provides an isolated nucleic acid encoding a polypeptide which is a mutant major surface antigen of a strain of hepatitis B virus, such polypeptide having an amino acid sequence which differs from the amino acid sequence of a major surface antigen of a wild type hepatitis B virus in that the amino acid at position number 145 of such polypeptide is an arginine rather than a glycine, and the purified peptide. This invention further provides an isolated nucleic acid which encodes a peptide, wherein the peptide is encoded by a nucleic acid molecule comprising nucleotides 527 through 595 of SEQ. ID. No. 1, and the purified peptide. This invention also provides various methods using the disclosed isolated nucleic acids and polypeptides. This invention also provides various uses of the viral strain and its proteins.		