UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

BERKELEY • DAVIS • IRVINE • LOS ANGELES • RIVERSIDE • SAN DIEGO • SAN FRANCISCO

SANTA BARBARA • SANTA CRUZ

SCHOOL OF MEDICINE
Department of Microbiology
and Immunology

SAN FRANCISCO, CALIFORNIA 94143

October 3, 1983

Dr. Richard Lerner
Department of Immunopathology
Scripps Clinic and Research
Foundation
La Jolla, California 92037

Dear Richard:

I am writing to provide you with specific information about the ground squirrel hepatitis virus (GSHV) peptides that might be useful for our studies of viral replication and pathogenesis. The sequences we propose below are based mainly upon a high degree of homology with woodchuck and human viruses (regions of homology underlined) and upon distribution of the sequences within the coding domains. I also enclose a translated nucleotide sequence, as determined by Christoph Seeger here, and I encourage you and your colleagues to make suggestions about sequences that would be either easier to synthesize or more likely to elicit an antibody response.

(A) From the putative polymerase coding domain:

(1) From the 5' portion of the domain: GPLTTNEKRRLK.

(2) From the region homologous with the polymerase domain of other hepatitis B and retroviruses: YMDDLVLGARS. (In this region, the pol frame overlaps the sAg frame.)

(3) From the 3' portion: VFADATPTGWG or ANWILRGTSFCYVPSA.

(B) From the so-called B (or X) domain:

(1) From the 5' portion: MAARLCCQLDSSRDVLLLRP.

(2) From the 3' portion: IDPRLKLFVLGGCRHK.

(C) From the pre-surface open reading frame:

(1) From the region that should be present in P31, the protein read from the first AUG preceding the coding region for mature surface antigen: PPLTIGDPVLSTE.

(2) From the region preceding the P31 domain: PPQTPSNRDQRRKPTK.

(3) From the amino terminus of the pre-S frame: MGNNIWVTFDPNW.

We would be interested in any peptides already on hand that come from the pre-S domain of human HBV, particularly from the region expected to be in P31; there is one region that has homology with the GSHV sequence: SSISARTGDPVTN.

(D) From the core domain: CPTVQASKLCLGWLW or LVSFGVWIRTPAP.

Is it possible you have human HBV core peptides that would cross-react?

As I mentioned on the phone, we would be extremely pleased if you were able to make peptides from the coding sequence from the int-1 domain, the gene activated by insertions of mouse mammary tumor virus DNA (see preprint). I will be in touch with you when we are sufficiently secure about the correct open reading frame, based upon sequencing of cDNA clones derived from mammary tumor mRNA.

Best regards,

Harold E. Varmus, M.D.
Professor

HEV/jm
Enclosures