

## Heterologous Hepatitis B Virus Challenge in a Chronically Antigenemic Gibbon

Principal Investigators : Rapin Snitbhan, M.D.  
Donald S. Burke, MAJ, MC  
Markpol Tingpalapongse, DVM

Assistant Investigators : Choompun Manomuth, B.Sc  
Sumitda Narupiti, B.Sc

**OBJECTIVE :** To investigate the hypothesis that monodeterminant antibody may be produced by infecting a chronic HBsAg carrier gibbon with a heterologous HBV subtype.

**BACKGROUND :** Monodeterminant antibody has been produced in a chronic HBsAg carrier chimpanzee by immunization of the animal with heterologous HBsAg in Freund's adjuvant (1). One possible explanation for this phenomenon is that the chronic carrier may be immunotolerant to the carried antigen so that immunization with a different subtype may elicit an immune response only against the unique sub-determinant of the second type (2). We sought to extend this line of reasoning by producing monodeterminant antibody in a chronic carrier gibbon by infecting, rather than immunizing the animal with a heterologous virus type.

**DESCRIPTION :** Gibbon DZ-2, a chronic HBsAg/ayw carrier held at the Department of Veterinary Medicine, was bled weekly for SGOT and SGPT control determinations for one month. Ten ml of human blood from the donor, D-2697, known to be HBsAg/adw positive with e antigen positive, were inoculated intravenously to the gibbon on day 0, day 2 and day 4. The animal was examined by a veterinarian once a week for evidence of fever or abnormal signs, and 10 ml of blood were drawn each week for complete blood count, biochemistry, and serology. SGOT and SGPT levels were determined on fresh serum. All sera were tested for presence of anti-HBs by RIA (AUSAB) (R) and for presence of HBsAg subtypes by immunodiffusion.

**RESULTS :** The gibbon was inoculated with HBsAg/adw and observed for 29 weeks without clear evidence of elevations of SGOT or SGPT (Figure 1). Study by immunodiffusion of all sera obtained before and after experimental inoculation of hepatitis B antigen revealed no changes of subtype. No anti-HBs was detected by radioimmunoassay through the 29th week.

### REFERENCES

1. Tabor, E., Gerety, R.J., Smallwood, L.A., Barker, L.F. Induction of Antibody to the "y" Determinant of HBsAg in a Chimpanzee Carrier of HBsAg Subtype "adw." J. Immunol. 117:2038-2040, 1976.
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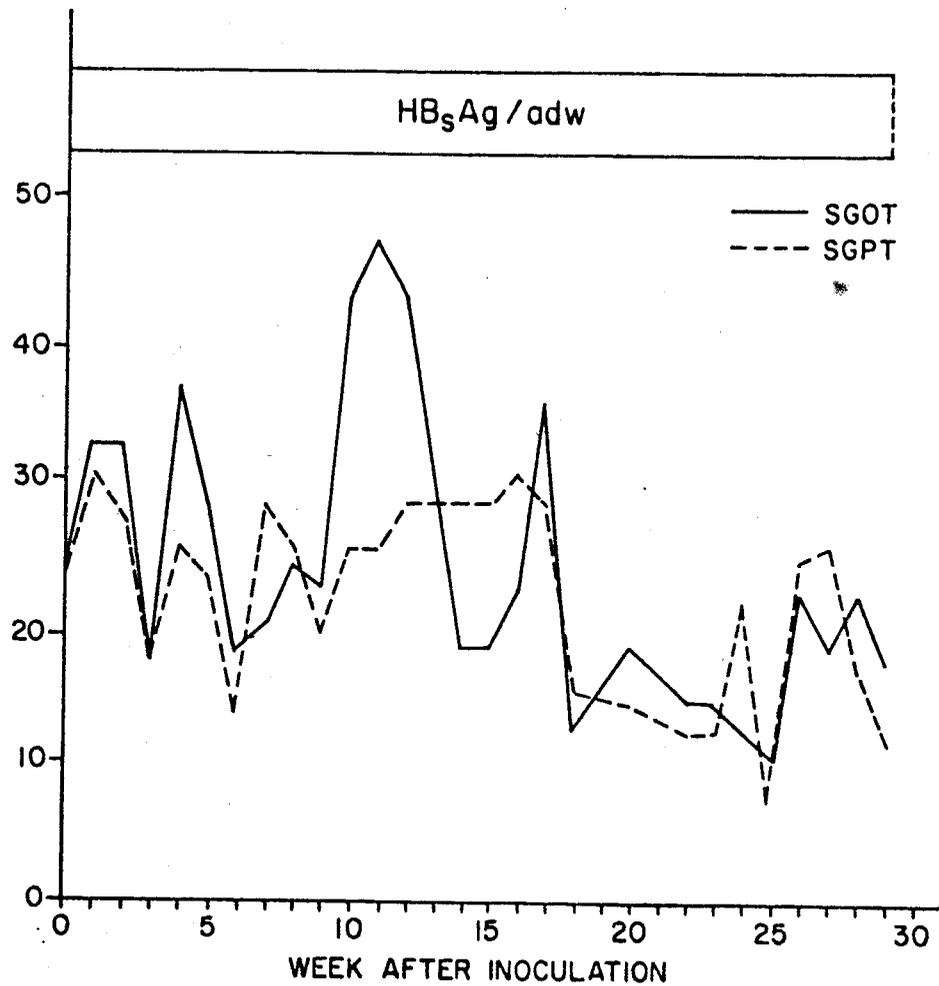


Figure 1. Response of gibbon DZ-2 to the intravenous injection of HB<sub>s</sub>Ag/adw