〔Inf. Immun., **57**, 1427 (1989)〕

Purification and Partial Characterization of a Type-Specific Antigen of *Rickettsia tsutsugamushi*.

NORIO OHASHI, AKIRA TAMURA, MITSUHIRO OHTA, KYOZO HAYASHI*

A type-specific antigen (54-to 56-kilodalton polypeptide) in the envelop of Rickettsia tsutsugamushi was purified from each of three prototype strains (Gilliam, Karp, and Kato) by a combination of mild anionic detergent treatment, gel filtration, and reverse-phase high-performance liquid chromatography. The purified antigens from the three strains were shown to have similar amino acid compositions : primarily aspartic acid, glutamic acid, and glycine, with lesser amounts of cysteins, methionine, and tyrosine. The N-terminal amino acid sequences of the antigens were 74.3% homologous amoung the three strains. But, it is not known whether the N-terminal sequence relates to the strain-specific antigenicity polypeptide.

〔Eur. J. Biochem., **183**, 419 (1989)〕

Intestinal-like Alkaline Phosphatase Expressed in Normal Human Adult Kidney.

KAZUYUKI HIRANO,* KAZUTOMI KUSANO, HIROKAZU MATSUMOTO,
TORGNY STIGBRAND, SHIRO IINO, KYOZO HAYASHI

Human adult kidney was found to contain not only the "tissue-unspecific alkaline phosphatase" but also another alkaline phosphatase isozyme. The structural and kinetic properties of the enzyme were compared with those of the other alkaline phosphatase isozymes. The new kidney isozyme was clearly different from both the tissue-unspecific and the adult intestinal alkaline phosphatase as regards isoelectric point, molecular mass and peptide maps after cyanogen bromide cleavage, but it was found to be identical to the meconial alkaine phosphatase.

〔J. Biol. Chem., **264**, 8537 (1989)〕

Interactions between Human Extracellular Superoxide Dismutase C and Sulfated Polysaccharides.

TETSUO ADACHI,* STEFAN L. MARKLUND

The high heparin affinity subtype C of the secretory enzyme extracellular superoxide dismutase (EC-SOD) exists in the body mainly complexed with extracellular sulfated glycosaminoglycans (SGAGs). Addition of sulfated polysaccharides to EC-SOD C resulted in a prompt partial inhibition of the enzymic activity, in most cases amounting to 10-17%. Studies with amino acid-specific reagents suggested that both lysine and arginine residues are involved in the binding of SGAGs. In particular, modification of only a few lysine residues/subunit resulted in loss of high SGAG affinity, whereas arginine modification resulted in loss of not only SGAG affinity but also enzymic activity.