Hokkaido University granted the degree of Master of Veterinary Medicine to the following ten graduates of the Graduate School of Veterinary Medicine on 25 March, 1980.

The authors' summaries of their theses are as follows:

ANTIGEN OF "SERUM SICKNESS" TYPE OF HETEROPHILE ANTIBODIES IN PATHOLOGIC HUMAN SERA — IDENTIFICATION AS GANGLIOSIDES WITH N-GLYCOLYLNEURAMINIC ACID AND STUDIES ON THE ANTIGENIC DETERMINANT STRUCTURE —

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Antigen of "serum sickness" type of heterophile antibodies (Hanganutziu and Deicher antibodies, H-D antibodies.) in pathologic human sera was purified from equine and bovine erythrocyte stroma, and its antigenic determinant group was studied.

The chemical nature of this antigen was glycosphingolipids with N-glycolylneuraminic acid. The antigen of equine erythrocytes was identified as hematoside with n-glycolylneuraminic acid; GcNeu (α, 2→3) Gal (β, 1→4) Glc (β, 1→1) ceramide, and the antigen of bovine erythrocytes was N-glycolylneuraminyl paragloboside; GcNeu (α, 2→3) Gal (β, 1→4) GlcNAc (β, 1→3) Gal (β, 1→4) Glc (β, 1→1) ceramide.

As compared with other kinds of glycosphingolipids, it was ascertained that N-glycolylneuraminic acid was the immunodominant group of the antigen.

The H-D antigenicity of the hematoside antigen was abolished not only by amidation to the carboxy group of the N-glycolylneuraminic acid residue but also by oxidation of its polyhydroxy side chain.

By comparing the oligosaccharide parts of the antigenic compounds with the smaller size of sugar moieties in antigenic activity, it was suggested that H-D antibodies probably recognized the terminal trisaccharide moiety including a common part of the third glucose or N-acetylglucosamine residue rather than only the nonreducing terminal disaccharide; N-glycolylneuraminyl (α, 2→3) galactosyl residue.

On the other hand, the oligosaccharides were very weak in the antigenic activity in comparison with the native antigens. It suggests that a hydrophobic region of H-D antigen is also important for the reaction with antibody.

A part of this thesis appeared in "Biochemical and Biophysical Research Communications" Vol. **79**, 388-395 (1977).