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CHARACTERIZATION OF AVIAN ANTISERA AGAINST HANGANUTZIU
AND DEICHER (H-D) ANTIGEN-ACTIVE GLYCOSPHINGOLIPIDS
(GSLs), AND RELATIONSHIP BETWEEN H-D ANTIBODY AND GSLs IN
MAREK'S DISEASE

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The precise specificities of human H-D antibodies and newly obtained avian antisera to H-D antigen-active GSLs, N-glycolylneuraminyl (α 2-3) lactosyl ceramide (hematoside) and N-glycolylneuraminyl (α 2-3) lactoneotetraosyl ceramide (sialosylparagloboside) were compared by gel precipitation and hemagglutination inhibition using other gangliosides with a related structure and chemically modified hematoside derivatives, and oligosaccharides from both the antigenic GSLs. The two avian antibodies and the human H-D antibodies were found to have the similar affinity for both antigenic GSLs. In detail, however, the former showed a higher affinity for the homologous antigen, and were directed more specifically to the whole structure of the homologous antigen, whereas the latter were directed more exactly toward the terminal sialic acid residue, and more roughly to the hydrophobic portion of both GSLs.

An enzyme-linked immunosorbent assay using both GSL antigens demonstrated specific elevation of H-D antibodies in chicken sera by immunization with MD lymphoma-derived cell lines. GSL compositions of three different chicken lymphoid cell lines: five MD lymphoma-derived cell lines (group I), two JMV (a nonproducer MD transplant)-derived cell lines (group II) and two avian leukosis lymphoma-derived cell lines (group III) were compared by thin layer chromatography and antigenic analyses. Each group showed a specific pattern of GSLs. The presences of H-D antigen and Forssman antigen were immunologically detected in group I and groups II and III GSLs, respectively.