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Oligosaccharides of the Glycoprotein of Rabies Virus

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The number of oligosaccharide side chains on rabies virus glycoprotein (G-protein) was investigated. Analysis of glycopeptides obtained by protease digestion of desialated G-protein revealed three discrete glycopeptides. Comparison of the protease digestion products from desialated and from untreated G-protein indicated a heterogeneity among the glycopeptides in the sialic acid content.

Two major tryptic glycopeptides were isolated from desialated rabies virus G-protein and analyzed after protease digestion; one contained two oligosaccharide

2 μg/ml, and the solution was incubated at 37°C for 1 h.

Preparation of tryptic glycopeptides. Tryptic digestion of rabies virus G-protein was carried out essentially as described by Cooper et al. (4). Isolated G-protein was suspended in NTE buffer (0.1 M NaCl–0.05 M Tris-hydrochloride [pH 7.5]–0.001 M EDTA), 0.5 mg of bovine serum albumin was added, and the suspension was heated at 100°C for 1 min with 1/1,000 volume of a mixture of 2-hydroxyethyldisulfide and 2-mercaptoethanol (50:1) and then dialyzed against 1,000 volumes of 0.05 M

following glycopeptides of known molecular weights: thyroglobulin glycopeptide (molecular weight 4,100) (15), fetuin glycopeptide (molecular weight 4,400) (2), and ovalbumin glycopeptide (molecular weight 1,500) (17). Furthermore, raffinose and stachyose were used as standards. Ovalbumin, raffinose, and stachyose were detected by the phenol-sulfuric acid assay (16), and thyroglobulin was detected by the thiobarbituric acid assay (19).

RESULTS

labeled amino acids or [^{3}H]glucosamine. A single major viral G-protein and a smaller minor G-protein were labeled with [^{3}H]glucosamine.

rus grown at 33 and 37°C were exactly the same size (data not shown). These results suggest that the amount of sialic acid per glycopep-

mogeneous with respect to size. Each of the

when tryptic glycopeptide I (Fig. 6b) was di-

cannot exclude the possibility that protease

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