71 Expression of fimbrial lectins on the surface of Salmonella
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Detection of Salmonella in the gut and determining the fimbrial lectins which they express in vivo are important steps in the study of Salmonella pathogenicity. In our studies polyclonal antibodies to Salmonella enteritidis and S. typhimurium were prepared in rabbits and monoclonal antibodies to fimbrial lectins (SEF 21, SEF 14) of S. enteritidis was prepared in mice. Using immunofluorescence techniques Salmonella expressing these fimbrin could be identified. In a rat model of Salmonella infection use of these antibodies has established that SEF 21 bearing Salmonella associate with the small intestine epithelium.

72 The Structure of Novel Phosphosaccharide Glycans of Trypanosoma cruzi
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The protozoan parasite Trypanosoma cruzi is the aetiological agent of Chagas’ disease in South and Central America. The insect stage (epimastigote) of T. cruzi expresses a novel and immunodominant carbohydrate epitope on several glycoproteins (e.g. GP72). When the carbohydrate structure is ligated with the mouse monoclonal antibody WIC29.26 the differentiation of the epimastigote to the infective metacyclic form is blocked (1). This suggests a role for the epitope in the development of the parasite within the insect vector, perhaps through interaction with insect gut wall lectins.

A previous study on the the WIC29.26 epitope has shown it to be a novel phosphoglycan containing galactofuranose, rhamnose, xylose and fucose (2). In this study we present data on the linkage of the carbohydrates in the structure and attempts to elucidate possible functions.

References
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73 The major surface glycoprotein of the procyclic form of Trypanosoma brucei is phosphorylated: a MALDI-TOF study.
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The African trypanosomes of the Trypanosoma brucei group are the causative agents of nagana in cattle and African sleeping sickness in humans. In the mammalian host, the parasites are protected by a dense surface coat of variant surface glycoprotein (VSG), but upon ingestion by the tsetse fly vector, the parasites swiftly differentiate to procyclic forms and lose this coat. The procyclic trypanosomes have a more diffuse coat of procyclin or procyclic acid repetitive proteins (PARP). The T. brucei PARPs contain either Glu-Pro repeats (EP-PARP) or Gly-Pro-Glu-Glu-Thr repeats (GEPET-PARP). The latter form is often the most abundant macromolecule on the surface of procyclic forms. Analysis of purified GEPET-PARP by negative-ion matrix assisted laser desorption-time of flight (MALDI-TOF) mass spectrometry revealed extreme mass heterogeneity (11 - 20 kDa), due to the heterogeneous sialylated and branched poly lactosamine side chains attached to their glycosylphosphatidylinositol (GPI) anchors. However MALDI-TOF analysis after mixed exoglycosidase treatment, and/or partial or complete dephosphorylation with aqueous hydrogen fluoride, revealed that this protein is phosphorylated on six out of seven of its threonine residues.

74 RAPID LECTIN METHODS FOR INVESTIGATING THE CARBOHYDRATE PROFILE OF THERAPEUTIC RECOMBINANT PLASMINOGEN: DIFFERENCES IN CULTURING CONDITIONS RESULT IN DIFFERENT GLYOSYLATION PATTERNS
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The glycosylation of recombinant proteins is affected by the host cell, the media composition and the culture conditions. Glycosylation may influence glycoprotein properties such as thermal stability, clearance rate and enzyme activity. When a glycoprotein is made for therapeutic purposes it is important to define the carbohydrate profile of different batches and to investigate the effects of different methods used to culture cells. In this study, different batches of recombinant plasminogen were used as a model for comparing various methods for rapidly determining glycosylation profiles. A lectin/ELISA and a surface plasmon resonance method using lectins were compared with monosaccharide measurements performed with HPAECPAD. The lectin/ELISA was found to be very useful for rapidly investigating the glycosylation of recombinant plasminogen.