

ELECTROPHORETIC CHARACTERISTICS OF THE LECTIN

FROM GRASSHOPPER ^{MAS}

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Grasshopper lectin (GHA) is a C-type (calcium stabilized) glycoprotein that is purified from the insect's hemolymph by means of affinity chromatography and high performance liquid chromatography procedures. The protein is an immunomolecule and serves to opsonize fungal blastopores and perhaps other pathogens toward hemocytic clearance from the hemocoel. This work contributes to the physicochemical characterization of the molecule. Denaturing polyacrylamide gel electrophoresis (SDS-PAGE) is used to study the molecular weight of the homodimer and the (reduced) monomeric subunits. The amount of carbohydrate is estimated by performing SDS-PAGE on enzymatically deglycosylated GHA. The nature of the carbohydrate is examined with Western blotting and specific lectin probes. Results show GHA to be a 72 kD dimer composed of identical 36 kD monomers. Carbohydrate accounts for about 4% by weight of the molecule and is likely composed of 8-10 hexose units per monomer. The carbohydrate is attached via N-linked asparagine.