

Purification and partial characterization of a novel lectin from elder (*Sambucus nigra* L.) fruit.

Biochem J. 1991 Sep 15;278 (Pt 3):667-71

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A previously unknown haemagglutinin, named *Sambucus nigra* agglutinin-III (SNA-III), has been purified from the fruit of the elder (*Sambucus nigra*). Whereas elder bark agglutinin I (SNA-I) is highly specific for terminal alpha 2,6-linked sialic acid residues, SNA-III displays a high affinity for oligosaccharides containing exposed N-acetylgalactosamine and galactose residues. Different N-terminal sequences and the amino acid composition distinguish the fruit lectin from elder bark agglutinin II (SNA-II), which shows a similar carbohydrate specificity. The 40-fold higher affinity of SNA-III for asialofetuin than for human asialo-alpha 1-acid glycoprotein and human asialotransferrin respectively suggests a preference for O-linked glycans. SNA-III occurs mainly as a monomeric glycoprotein, but tends to form di- and oligomeric aggregates. This aggregation seems to mediate the multivalent interaction, leading to agglutination. SDS/PAGE revealed two major polypeptides with apparent molecular masses of 32 and 33 kDa respectively. This heterogeneity is probably a result of proteolysis in the C-terminal region. Binding to concanavalin A and susceptibility to peptide: N-glycosidase F indicated the presence of N-glycosidically linked oligosaccharides.