

MCB PLANT BIOLOGY SEMINAR

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"Plant lectins in biotechnology:
Novel applications for academic, medical and commercial use"

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ABSTRACT:

Lectins are a class of carbohydrate-binding proteins found in plants. First identified in Castor beans for their ability to induce the agglutination, or clumping, of blood cells, lectins have been used in a variety of biomedical applications, including separation of cancerous leukemic cells from healthy t-cell populations and cancer cell determination. The ability to differentially bind to cells is due to differences in surface glycoproteins and the highly specific ligand binding for each lectin. Soybean agglutinin (SBA), found in high concentrations in the seeds of soybean, is a lectin that binds specifically with N-acetyl-D-galactosamine and can be isolated rapidly and with high efficiency using one-step affinity chromatography. I will discuss our labs development of a recombinant SBA as a novel affinity tag for the purification of recombinant proteins, as well as a variety of novel applications for the purified products including lower cost tagging of cancer cells and a novel oral delivery system.