

Special Issue

Lectins: Structural Diversity, Molecular Recognition and Emerging Applications

Message from the Guest Editor

Lectins are a diverse group of carbohydrate-binding proteins that are widely distributed across microorganisms, plants, and animals. These proteins are defined by the presence of at least one non-catalytic domain that selectively and reversibly binds to mono-, oligo-, or polysaccharides without chemically modifying the carbohydrate molecules themselves.

Due to their high specificity for carbohydrate moieties, lectins play a central role in numerous physiological and ecological interactions(Agglutination and cell recognition;Anthelmintic effects;Anticancer potential;Antifungal effects;Anti-inflammatory effects;Antimicrobial activity;Antiviral properties;Immunomodulatory activity;Insecticidal activity;Mitogenic effects;Neuromodulatory effects;Wound healing promotion).

Beyond their natural biological functions, lectins hold immense promise in biotechnology and biomedical sciences (Diagnostic tools;Drug delivery systems;Antiviral and antibacterial therapeutics;Agricultural biotechnology;Bioseparation and biosensors;Cancer research and treatment;Vaccine development).

Guest Editor

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