

## 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).

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### Guest Editor

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