Special Issue

Legume-Rhizobia Symbiosis: From Early Signaling to Nodule Functioning

Message from the Guest Editor

The mutualistic association between legumes and rhizobia has been historically studied due to its relevant contribution to biological nitrogen fixation in ecosystems and crops. The symbiotic relationship that occurs in the rhizosphere requires a complex chemical dialogue between both partners for the development and functioning of the root nodule, where the atmospheric nitrogen is converted to ammonia by the bacteroids. This process is influenced by (a)biotic factors and requires complex molecular reprogramming by both symbionts to have a successful mutualistic interaction and promote legume growth. With the growing demand for food, coupled with the negative impacts on the environment due to the use of chemical fertilizers on crops, the understanding and use of the nitrogen-fixing symbiosis offer an alternative for sustainable agriculture. This Special Issue addresses and welcomes relevant discoveries on the molecular components and responses recruited by legumes and rhizobial partners from the early signaling responses to nodule functioning.

Guest Editor

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