

球囊霉素相关土壤蛋白根际环境功能研究进展

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摘要 球囊霉素(glomalin)是从枝菌根真菌产生的一种含有金属离子的耐热糖蛋白,能够改善土壤结构,固定土壤中的重金属,近期被更名为球囊霉素相关土壤蛋白(glomalin-related soil protein)。该文从球囊霉素的定义、性质与环境功能等方面对相关文献进行了综述,认为目前对球囊霉素的共识仍停留在理论假设蛋白的程度上,包括:1)该蛋白可能是热激蛋白60 (HSP 60)的同系物;2)该蛋白所携带的阳离子可能随着土壤性质的改变而不同。目前还没有清楚确切地定义球囊霉素的真实分子结构与理化性质。今后需从分子层面对球囊霉素予以深入研究。同时,需要不断改进球囊霉素的提取和测定方法,以便进一步探讨球囊霉素固定重金属离子的机理,提高植物的重金属抗性。

关键词: 从枝菌根真菌 球囊霉素 球囊霉素相关土壤蛋白 重金属

Abstract: Glomalin (or glomalin-related soil protein) is thought to be produced by arbuscular mycorrhizal fungi. It is a thermotolerant glycoprotein that contains metal ions and has special physical and chemical characteristics. The structure and function of glomalin have been intensively studied. We review progress in the characterization and properties of glomalin as well as its environmental functions in the rhizosphere (especially its chelation of heavy metals). Research has shown that glomalin is a putative homolog of heat shock protein 60 and can carry different metal ions because of different kinds of soil. Further research on methods for its measurement is urgently needed.

Keywords: arbuscular mycorrhizal fungi, glomalin, glomalin-related soil protein, heavy metals

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