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논문제목(Title)

[논문]Ammonia-oxidizing archaea in biological interactions

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초록(Abstract)

The third domain Archaea was known to thrive in extreme or anoxic environments based on cultivation studies. Recent metagenomics-based approaches revealed a widespread abundance of archaea, including ammonia-oxidizing archaea (AOA) of Thaumarchaeota in non-extreme and oxic environments. AOA alter nitrogen species availability by mediating the first step of chemolithoautotrophic nitrification, ammonia oxidation to nitrite, and are important primary producers in ecosystems, which affects the distribution and activity of other organisms in ecosystems. Thus, information on the interactions of AOA with other cohabiting organisms is a crucial element in understanding nitrogen and carbon cycles in ecosystems as well as the functioning of whole ecosystems. AOA are self-nourishing, and thus interactions of AOA with other organisms can often be indirect and broad. Besides, there are possibilities of specific and obligate interactions. Mechanisms of interaction are often not clearly identified but only inferred due to limited knowledge on the interaction factors analyzed by current technologies. Here, we overviewed different types of AOA interactions with other cohabiting organisms, which contribute to understanding AOA functions in ecosystems.

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