

Webinar « Cell biology & signal transduction »

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Junpei Takano, Osaka Prefecture University

jtakano@plant.osakafu-u.ac.jp

<https://saibaiseirigaku.wixsite.com/en-cropecophysiology>

Arabidopsis BOR1 is a borate transceptor that senses the boron concentration and promotes its own ubiquitination and degradation.

Abstract

Plants take up and translocate nutrients through transporters. In *Arabidopsis thaliana*, the borate exporter BOR1 acts as a key transporter under boron (B) limitation in the soil. Upon sufficient-B supply, BOR1 undergoes polyubiquitination and is transported from the plasma membrane to the vacuole for degradation, to avoid overaccumulation of B. Our study to elucidate the B sensing mechanism suggests that polyubiquitination of BOR1 relies on its conformational transition during the transport cycle. We propose that BOR1 is a transporter-receptor, “transceptor”, directly senses the B concentration and promotes its own polyubiquitination and vacuolar sorting for quick and precise maintenance of B homeostasis.

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