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Autore	Mei Yu, Dr.
Titolo	Functional Characterization of Arabidopsis Phosphatidylinositol Monophosphate 5-kinase 2 in Lateral Root Development, Gravitropism and Salt Tolerance // by Yu Mei
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Nota di contenuto	Review of Phosphatidylinositol Phosphate Kinase in Phosphatidylinositol Signaling Pathway -- Structure and Expression Pattern Analysis of Arabidopsis PIP5K2 -- Arabidopsis PIP5K2 Is Involved in Lateral Root Development Through Regulating Auxin Accumulation -- Arabidopsis PIP5K2 Is Involved in Root Gravitropism Through Regulation of Polar Auxin Transport -- Arabidopsis PIP5K2 Is Involved in Salt Tolerance.
Sommario/riassunto	The functional characterization of a key enzyme in the

phosphatidylinositol (PI) signaling pathway in the model plant *Arabidopsis thaliana* is the focus of this thesis. Moreover, a particular focus is the exploration of the biological functions of *Arabidopsis* phosphatidylinositol monophosphate 5-kinase 2 (PIP5K2), which catalyzes the synthesis of phosphatidylinositol (4,5) bisphosphate, the precursor of two important second messengers (inositol 1,4,5-trisphosphate and diacylglycerol). Employing molecular and genetic approaches, the author isolates and characterizes the expression pattern, physiological functions and underlying mechanism of *Arabidopsis* PIP5K2. In doing so, he reveals that PIP5K2 is involved in regulating lateral root formation and root gravity response through modulating auxin accumulation and polar auxin transport, and also plays a critical part in salt tolerance. These findings shed new light on the crosstalk between PI signaling and auxin response, both of which fulfill crucial regulatory roles in plant development.
