

Auxin biosynthesis in Arabidopsis

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It has been proposed that auxin is synthesized from both Trp-dependent and Trp-independent pathways. Whereas the understanding of Trp-independent pathway is still very limited, much progress has been made in Trp-dependent pathway. It is generally recognized that the TAA/YUC pathway, in which Trp is first converted into Indole-3-pyruvate (IPA) by the TAA family of aminotransferases and IPA is subsequently converted to IAA by the YUC family of monooxygenases, is a main auxin biosynthetic pathway and plays essential roles in all major developmental processes. Here I will discuss our recent progress in regulation of the TAA/YUC pathway. I will also discuss whether there exist other Trp-dependent pathways and whether the other proposed Trp-dependent pathways play important roles in plant growth and development. Furthermore, I will report the new tools we have developed in manipulating auxin biosynthesis in Arabidopsis.