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Diverse role of CBL-interacting protein kinases in plant

Most of the extracellular and intrinsic signals elicit changes in cellular calcium ion (Ca²+) in plants and animals. Ca²+ sensor proteins transmit signals in Ca²+-dependent manner. In addition to several such Ca²+ sensors, a new family of Ca²+ sensors, similar to regulatory B-subunit of calcineurin and the neuronal Ca²+ sensor in animals, has been isolated in plants and named as calcineurin B-like proteins (CBL). A family of CBL-interacting proteins kinases (CIPKs) have been identified that regulate signalling networks. All the CIPKs studied so far were shown to regulate activities triggered by external signals like stresses. We have identified two CIPKs from the model plant Arabidopsis that show involvement in plant development in addition to their role in stress signalling. Their role in transport of plant hormone auxin and mechanism of action in stress response shed new light on diverse role of CIPKs in plants.