

Phytohormones are central players in diverse plant physiological events, such as plant growth, development, and environmental stress and defense responses. The elucidation of their regulatory mechanisms through phytohormone receptors could facilitate the generation of transgenic crops with cultivation advantages and the rational design of growth control chemicals. During the last decade, accumulated structural data on phytohormone receptors have provided critical insights into the molecular mechanisms of phytohormone perception and signal transduction. Here, we review the structural bases of phytohormone recognition and receptor activation. As a common feature, phytohormones regulate the interaction between the receptors and their respective target proteins (also called co-receptors) by two types of regulatory mechanisms, acting as either “molecular glue” or an “allosteric regulator.” However, individual phytohormone receptors adopt specific structural features that are essential for activation. In addition, recent studies have focused on the molecular diversity of redundant phytohormone receptors.

Phytohormones regulate the interaction between the receptors and their respective target proteins by two types of action mechanisms.

