

P014 The role of auxin transport in root hair development
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Root hairs are tubular projections produced by single epidermal cells through a process of polarised growth. The position on the apical-basal axis of the cell from which the hair emerges shows remarkable consistency both within and between species, with hairs being produced almost exclusively within two hair's widths from the transverse cell wall closest to the root apex. The transport of the plant hormone auxin from cell to cell through the epidermal cell layer in an apical to basal direction has the potential to produce the co-ordinated polarisation of the epidermal cells which is apparent in the consistent positioning of root hairs. Observation of an increased frequency of basally positioned hairs by certain auxin transport mutants in comparison to wild-type provides support for this theory, but there has been no mechanistic explanation of the link between auxin transport and the establishment of the new growth axis. We are using mutants with hair positioning phenotypes to investigate the relationship between auxin and root hair initiation.