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Grass seed (technically referred to as grain) are borne on axillary branches whose branching patterns dictate most of the variation in grass inflorescence architecture. Normal maize ears are unbranched, and tassels have long branches only at their base. The ramosa2 (ra2) mutant of maize has increased branching, with short branches replaced by long, indeterminate ones. Bortiri et al. (pages 574–585) cloned ra2 and report that it encodes a LOB domain transcription factor. The mutant phenotype and early expression pattern of ra2 indicate that it functions in the patterning of stem cells in axillary meristems. The ra2 expression pattern is conserved in rice, barley, sorghum, and maize, suggesting that ra2 is critical for shaping the initial steps of grass inflorescence architecture. On the cover, a scanning electron microscopy image of a ra2 mutant ear (right) compared to a normal ear (left) shows the loss of determinacy and branching in the ra2 mutant.
The Arabidopsis SOMATIC EMBRYOGENESIS RECEPTOR-LIKE KINASE1 Protein
Complex Includes BRASSINOSTEROID-INSENSITIVE1
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The Arabidopsis Aux/IAA Protein Family Has Diversified in Degradation and Auxin Responsiveness
Kate A. Dreher, Jessica Brown, Robert E. Saw, and Judy Callis

Vacular H+-ATPase Activity Is Required for Endocytic and Secretory Trafficking in Arabidopsis
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Arabidopsis PENA/PDR8, an ATP Binding Cassette Transporter, Contributes to Nonhost Resistance to Inappropriate Pathogens That Enter by Direct Penetration
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Wenxian Sun, F. Mark Dunning, Christine Pfund, Rebecca Weingarten, and Andrew F. Bent

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