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CONFERENCIA

Root growth and signalling: the role of calcium channels

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Jueves, 20 de abril de 2017; 12:00
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"Root growth and signalling; the role of calcium channels".

Roots acquire calcium not only as a macronutrient but also to serve as a second messenger in signalling and a component of exocytosis for growth. Plasma membrane channels are sufficient to deliver calcium from the apoplast to the cytosol to enable its participation in nutrition, adaptation and development. The identity and regulatory mechanisms of these channels are central to our understanding of how calcium manages to "do it all". By studying *Arabidopsis* roots, it's been possible to discover plasma membrane channels involved in growth and signalling, allied to the finding that plants utilise the most damaging reactive oxygen species, the hydroxyl radical, constructively. As an overarching regulator, roots utilise extracellular purine nucleotides in a calcium-based signalling system that differs substantially from that of animals.