



Katedry genetiky, biochémie a fyziológie rastlín
Prírodovedeckej fakulty Univerzity Komenského
v spolupráci so
Slovenskou spoločnosťou pre biochémiu a molekulárnu biológiu

Vás pozývajú na 57. prednášku v rámci Kuželových seminárov:

Dr. František Baluška

**Institute of Cellular & Molecular Botany
University of Bonn, Germany**

Plant Neurobiology

ktorá sa uskutoční 6. októbra 2006 (piatok) o 14:00
v miestnosti CH1-2 Prírodovedeckej fakulty UK

<http://www.fns.uniba.sk/~kbi/kuzela>

František Baluška

Education / Employment:

- 2004** DrSc. Slovak Academy of Sciences, Bratislava, Slovakia
2003- Faculty member and member of the 'Vorstand des Institut für Zelluläre & Molekulare Botanik', University of Bonn, Germany
2003- Universitätsdozent, Institute of Botany, University of Bonn, Germany
1999 Habilitation, University of Bonn, Topic: *Morphogenic Shaping of Maize Root Cells via Dynamic Cytoskeleton*.
1995-99 Senior Research Associate, Institute of Botany, University of Bonn, Germany
1991-95 Research Associate, Institute of Botany, Slovak Academy of Sciences, Bratislava, Slovakia
1988 PhD Institute of Botany, Slovak Academy of Sciences, Bratislava, Slovakia
1981-91 Junior Research Associate, Institute of Botany, Slovak Academy of Sciences, Bratislava, Slovakia
1981 BA/Dr, Comenius University, Bratislava, Slovakia



Awards:

- 1994-95** Alexander von Humboldt Fellowship (Bonn), University of Bonn
1991-92 Royal Society Fellowship (London), University of Bristol
1981 Graduated magna cum laude with honors, Comenius University, Bratislava

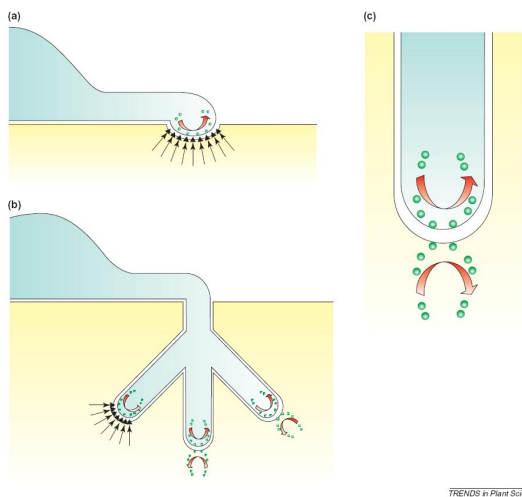


Figure: Immunological plant synapses for cell-to-cell communication between plant host cells and their pathogens, parasites and symbionts. **(a)** Closely apposed plasma membranes of intruder and host cell during a penetration attempt. If the host cell succeeds in effectively forming a papilla then this synaptic cell-to-cell communication is terminated. **(b)** Alternatively, the intruder might penetrate deeply into the host plant cells and then immunological plant synapses support haustorial complexes and mycorrhizal arbuscles. **(c)** During the initiation of a *Rhizobia*-plant symbiosis, bacteria organize infection threads, the tips of which represent immunological plant synapses specialized for transporting bacteria deeply into root tissues (from Baluška *et al.* (2005) *Trends Plant Sci.* **10**: 106-111).

Recent publications:

Baluška F, Menzel D, Barlow PW (2006) Cytokinesis in plant and animal cells: endosomes 'shut the door'. *Dev Biol* **294**: 1-10.

Baluška F, Peter Barlow P, Baskin T, Chen R, Feldman L, Forde BG, Geisler M, Jernstedt J, Menzel D, Muday G, Murphy A, Šamaj J, Volkmann D (2005) What is apical and what is basal in plant root development? *Trends Plant Sci* **10**: 409-411.

Šamaj J, Read ND, Volkmann D, Menzel D, **Baluška F** (2005) The endocytic network in plants. *Trends Cell Biol* **15**: 425-433.

Baluška F, Volkmann D, Menzel D (2005) Plant synapses: actin-based adhesion domains for cell-to-cell communication. *Trends Plant Sci* **10**: 106-111.

Brenner E, Stahlberg R, Mancuso S, Vivanco J, **Baluška F**, Van Volkenburgh E (2006) Plant neurobiology: an integrated view of plant signaling. *Trends Plant Sci* **11**: 413-419.

Chen Y, Chen T, Shen S, Zheng M, Guo Y, Lin J, **Baluška F**, Šamaj J (2006) Differential display proteomic analysis of *Picea meyeri* pollen germination and pollen tube growth after actin depolymerization by latrunculin B. *Plant J* **47**: 174-195.

Alvarez-Venegas R, Sadder M, Hlavacka A, **Baluška F**, Xia Y, Lu, G, Firsov A, Sarath G, Moriyama H, Dubrovsky JG, Avramova Z (2006) The Arabidopsis homolog of trithorax, ATX1, binds phosphatidylinositol 5-phosphate, and the two regulate a common set of target genes. *Proc Natl Acad Sci USA* **103**: 6049-6054.

Dhonukshe P, **Baluška F**, Schlicht M, Hlavacka A, Šamaj J, Friml J, Gadella Jr TWJ (2006) Endocytosis of cell surface material mediates cell plate formation during plant cytokinesis. *Dev Cell* **10**: 137-150.

Baluška F, Liners F, Hlavacka A, Schlicht M, Van Cutsem P, McCurdy D, Menzel D (2005) Cell wall pectins and xyloglucans are internalized into dividing root cells and accumulate within cell plates during cytokinesis. *Protoplasma* **225**: 141-155.

Voigt B, Timmers A, Šamaj J, Hlavacka A, Ueda T, Preuss M, Nielsen E, Mathur J, Emans N, Stenmark H, Nakano A, **Baluška F**, Menzel D (2005) Actin-based motility of endosomes is linked to polar tip-growth of root hairs. *Eur J Cell Biol* **84**: 609-621.

Voigt B, Timmers T, Šamaj J, Müller J, **Baluška F**, Menzel D (2005) GFP-FABD2 fusion construct allows *in vivo* visualization of the dynamic actin cytoskeleton in all cells of Arabidopsis seedlings. *Eur J Cell Biol* **84**: 595-608.

Baluška F, Volkmann D, Barlow PW (2004) Cell bodies in a cage. *Nature* **428**: 371.