Verma, D.P.S. (ed.): **Signal Transduction in Plant Growth and Development**. - Springer-Verlag, Wien - New York 1996. 318 pp. DM 189.00. ISBN 3-211- 82745-5.

This book is devoted to one of the hottest fields of plant physiology, to signal transduction pathways. It summarizes knowledge in different areas of this broad field and brings a very useful comparison of signaling in various metabolic and developmental processes. The field is introduced by the chapter by Z. Yang, in which all possible transduction pathways are mentioned. This chapter itself represents an excellent short overview. The other chapters deal with individual components of the signaling pathways (G-proteins, phosphorylations, *etc.*), with some specific plant signaling issues like salicylic acid or self-incompatibility problem and with signaling in keeping C/N balance.

G-proteins are discussed namely in correlation to ion channels (A.S. Assmann), especially potassium channels, summarizing results from patch clamping experiments. The chapters on regulation of C and N metabolism and their interaction (G.-H. Miao, S.C. Huber and W.M. Kaiser) deal with control of both C and N metabolism individually and with C/N interactions. Attention is concentrated to compartmentation of the processes and on the regulation of key enzymes, like reversible phosphorylation of phosphoenolpyruvate carboxylase, sucrose phosphate synthase or nitrate reductase. To regulatory phosphorylation of phosphoenolpyruvate carboxylase is devoted a special chapter by J. Vidal, J.-N. Pierre and C. Echevarria. Phosphorylation seems to be to be very important in cytoskeleton organization (S.M. Ritchie and N.H. Battey). Possible modulation of protein kinases by biologically active lipids is described by G.F.E. Scherer. Salicylic acid is described (K.K. Wobbe and D.F. Klessig) both as an agent in thermogenesis and as a signal in plant defense. Self-incompatibility system of *Brassica napus* is described on molecular biological level (D.R. Goring, S.J. Rothstein): the reaction is started by receptor tyrosine kinase and transduced *via* phosphoinositide pathway and MAP kinases. Final three chapters deal with circadian transduction pathways, especially with interaction of photoreceptors and clocks (I. Carré and S.A. Kay), role of plasmodesmata in spread of plant viruses (C.A. Fenczik, B.L. Epel and R.N. Beachy) and signals in legume-*Rhizobium* interaction (Z. Hong and D.P.S. Verma).

The book represents to my knowledge one of the best in the field, namely due to well selected items to be covered. The reader not only gets the information on cellular transduction mechanisms, but also an idea what signal transduction at whole plant level might mean. The book can be recommended to any researcher or advanced student in the field of plant growth regulation.

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