Commentary

A comment on 'Endogenous fusicoccin-like ligand revealed in higher plants by radioreceptor and radioimmunoassays', by Aleksei V. Babakov et al. (1994) FEBS Lett. 351, 243–245

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Received 26 October 1994

The above paper from a Russian team led by G.S. Muromtsev deals with a subject which has interested my group for the last 15 years. As the paper greatly neglects, or at best heavily underestimates our contribution, I felt compelled to remind the role we played in the search for endogenous compounds competing with fusicoccin (FC) at the level of its receptors. Interest for these compounds originates from their likely role in the physiological regulation of the plasma membrane H^+-ATPase, an enzyme which is ubiquitous in plant tissues and represents the main target of FC action [Marrè, E. (1979) Annu. Rev. Plant Physiol. 30, 273–288]. Babakov et al. recall that in 1980 they 'obtained the first evidence for the existence of endogenous FC in higher plants' [Muromtsev, G.S. et al. (1980) Izv. AN SSSR, Ser Biol. 6, 896–902], a finding further extended by later publications from their group, but not confirmed by us [Aducci, P. et al. (1985) Phytochem. 24, 1097–1099]. They maintain that 'later, the presence of an endogenous fusicoccin-like ligand in plants was confirmed by Ballio et al.' and quote a poster abstract which has nothing to do with that subject [Marra, M. et al. (1990) Physiol. Plant. 79, 184]. Rather, they have forgotten that in 1980 we published a paper entitled 'Fusicoccin Receptors Evidence for Endogenous Ligand' [Aducci, P. et al. (1980) Planta 148, 208–210] which contains the first results on plant metabolites interacting with FC receptors. We abstained to call them 'fusicoccin-like ligands' since their covalent structure was (and still is) unknown and their binding to FC receptors is not necessarily conditioned by a strict relatedness with FC. The evidence for endogenous ligands reported in our paper was obtained by measuring the competition of plant extracts with [^{3}H]dihydroFC in a binding test to FC receptors. Babakov et al. use the same method, called by them 'radioreceptor assay (RRA)', and the same tritiated FC-derivative for revealing endogenous 'FC-like ligands', but, as in the previous papers from their group, they ignore our papers which reported for the first time the preparation of the radiolabeled FC-derivative [Ballio, A. et al. (1980) Plant Sci. Lett. 18, 39–44] and its use to detect and localize FC-binding sites in higher plants [Dohrmann, U. et al. (1977) Plant Sci. Lett., 9, 291–299].

The Russian authors also omit to mention in their paper our contribution to the development of a radioimmunoassay (RIA) for FC, the second technique they have used for revealing 'FC-like ligands' in higher plants. Our group has been the first to prepare anti-FC antibodies [Pini, C. et al. (1979) Plant Sci. Lett. 16, 343–353] and to use them for setting up a RIA procedure [Federico R. et al. (1981) Z. Pflanzenphysiol. 104, 275–279], and an immunoaffinity phase suitable for the isolation of plant ligands for FC receptors [Marra, M., Ballio, A. and Aducci, P. (1988) J. Chromatogr. 440, 47–51].

The scanty attention payed by Babakov et al. to the results of our work on the search of endogenous ligands interacting with FC receptors is difficult to justify. Our reports were published in journals of high repute, and consequently of ample distribution, many years before the appearance of their papers on the same subject.

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SSDI 0014-5793(95)00117-4