

CK2 Is Acting Upstream of MEK3/6 as a Part of the Signal Control of ERK1/2 and p38 MAPK during Keratinocytes Autocrine Differentiation

Antonia R. Isaeva* and Vanio I. Mitev

Department of Medical Chemistry and Biochemistry, Medical University of Sofia,
2 Zdrave Str., 1431 Sofia, Bulgaria. Fax: +3592-9172 771. E-mail: antonia_isaeva@yahoo.com

* Author for correspondence and reprint requests

Z. Naturforsch. **66c**, 83–86 (2011); received May 31/September 15, 2010

Protein kinase CK2 (formerly termed “casein kinase II”) is a ubiquitously in mammalian cells distributed Ser/Thr kinase, with global role in cell regulation. Although, the involvement of CK2 in cell signalling is vast-investigated, virtually nothing is known about its contribution to signal control of keratinocytes differentiation. Here we show that, in autocrine differentiating keratinocytes, inhibition of the CK2 activity induced by 4,5,6,7-tetrabromobenzotriazole (TBB) causes reciprocal changes in the activities of major signal transduction regulators of keratinocytes differentiation, *i.e.* ERK1/2 and p38 MAPK, without affecting their protein levels. The ERK1/2 activity is strongly suppressed, while the activity of p38 is increased. We have also found that the activity of upstream and specific for p38 MAPK kinase MEK3/6 is also stimulated by TBB. These original results clearly demonstrate the participation of CK2 in the signal transduction pathway controlling MEK3/6, p38 MAPK, and ERK1/2 in the used model system.

Key words: CK2, MAPK, Keratinocytes Differentiation