

GS6-2 Proteomic identification and characterization of the new functional proteins in the EGF receptor-mediated signaling pathway

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To identify proteins acting downstream of the EGF receptor, we isolated proteins by phospho-proteomics from the EGF-stimulated A431 cells. Over 150 proteins were detected including well-studied proteins and also several previously unidentified ones. The functions of the following four unique proteins have been reported. 1) CFBP interacts with CD2AP family proteins and functions as a key component in EGF receptor downregulation. 2) Ymer is found to be phosphorylated and ubiquitinated upon EGF stimulation, and functions as an inhibitor for the downregulation of the EGF receptor. 3) CLPABP binds to mitochondria-specific phospholipids, cardiolipin through its PH domain, and its complex includes various proteins related to mRNA metabolism. 4) GAREM is associated with Grb2 and Shp2 and has a regulatory effect on the Erk activity. In this symposium, I will report the functional analysis of these proteins and these possibilities as the novel marker protein for cancer and other diseases.