Interactions between the budding yeast IQGAP homologue Iqg1p and its targets revealed by a split-EGFP bimolecular fluorescence complementation assay

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Abstract

. A split-EGFP based bimolecular fluorescence complementation (BiFC) assay has been used to detect interactions between the *Saccharomyces cerevisiae* cytoskeletal scaffolding protein Iqg1p and three targets: myosin essential light chain (Mlc1p), calmodulin (Cmd1p) and the small GTPase Cdc42p. The format of the BiFC assay used ensures that the proteins are expressed at wild type levels thereby avoiding artefacts due to overexpression. This is the first direct *in vivo* detection of these interactions; in each case, the complex is localised to discrete regions of the yeast cytoplasm. The labelling with EGFP fragments results in changes in growth kinetics, cell size and budding frequency. This is partly due to the reassembled EGFP locking the complexes into essentially permanent interactions. The consequences of this for Iqg1p interactions and BiFC assays in general are discussed.