

Crystal Structures of a Formin Homology-2 Domain Reveal a Tethered Dimer Architecture

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Scientists are still sorting out how the shape and motility of cells are governed by their actin cytoskeletons. Recently, formin proteins have been found to play a role in a wide range of cytoskeletal processes involving actin. Found in all eukaryotes cells, formins molecules have a highly conserved region called the **Formin Homology-2 (FH2)** domain. Built from some 400 residues, the FH2 domain has been found to nucleate actin filaments and to attach to the barbed end of the filaments to achieve movement. The Eck group has determined the first crystal structure of an FH2 domain from the yeast formin Bni1p.

A speculative model showing how the tethered dimer architecture of the FH2 domain could alternate dissociation, displacement, and rebinding of one half of the formin dimer to allow elongation by addition of actin monomers to the barbed end of the filament

