

Structure of actin cross-linked with α -actinin: a network of bundles

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Filamentous (F)-actin networks are involved in muscle function, cell shape, motility, and division. The elucidation of structures formed from F-actin and associated biological molecules (like α -actinin) is a necessary step towards a fundamental understanding of the mechanical and rheological properties of cells.

Cover image shows an illustration of a proposed structure of a F-actin bundle at a branching site, showing how the protein α -actinin (red) induces a network-like structure in the F-actin protein by forming cross links between its filaments. **This structure revealing nanoscale ordering is based on a synchrotron x-ray scattering study performed at the Stanford Synchrotron Radiation Laboratory, which indicates that α -actinin induces the formation of a disordered quasi-square lattice within the Bundle.** (O. Pelletier, E. Pokidysheva, L. S. Hirst, N. Boussein, Y. Li and C. R. Safinya, *Physical Review Letters*, **91**(14) 148102 2003). **Supported by NSF, NIH, and DOE.**

