Article

6 **Proline cis-trans isomerization controls autoinhibition of a signaling protein.**

Sarkar P, Reichman C, ..., Birge RB, Kalodimos CG
Mol Cell. 2007 Feb 9; 25(3):413-26

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Evaluations

Evaluated by Dorothee Kern

This is an interesting paper because it provides evidence that proline cis/trans isomerization is used as a structural feature to modulate autoinhibition in the Crk adaptor protein.

Crk, composed of two SH3 domains connected by a flexible linker, mediates formation of protein complexes to regulate signaling.

Crk exists in an equilibrium between 90% in a closed autoinhibited state with both SH3 domains bound to each other, and 10% in an open conformation with the polyproline binding sites of the SH3 domains available for binding. This conformational heterogeneity is caused by the cis/trans isomerization of Pro238 in the linker. The authors propose that binding of downstream partners of Crk bind to the 10% available open conformation.

Competing interests: None declared

Cite this evaluation

Evaluated by:
Dorothee Kern
Brandeis University, USA
Structural Biology
25 Mar 2008

Rating 6
Recommended

Classification Key: Changes Clinical Practice | Novel Drug Target | Technique | Clinical Trial | Review

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