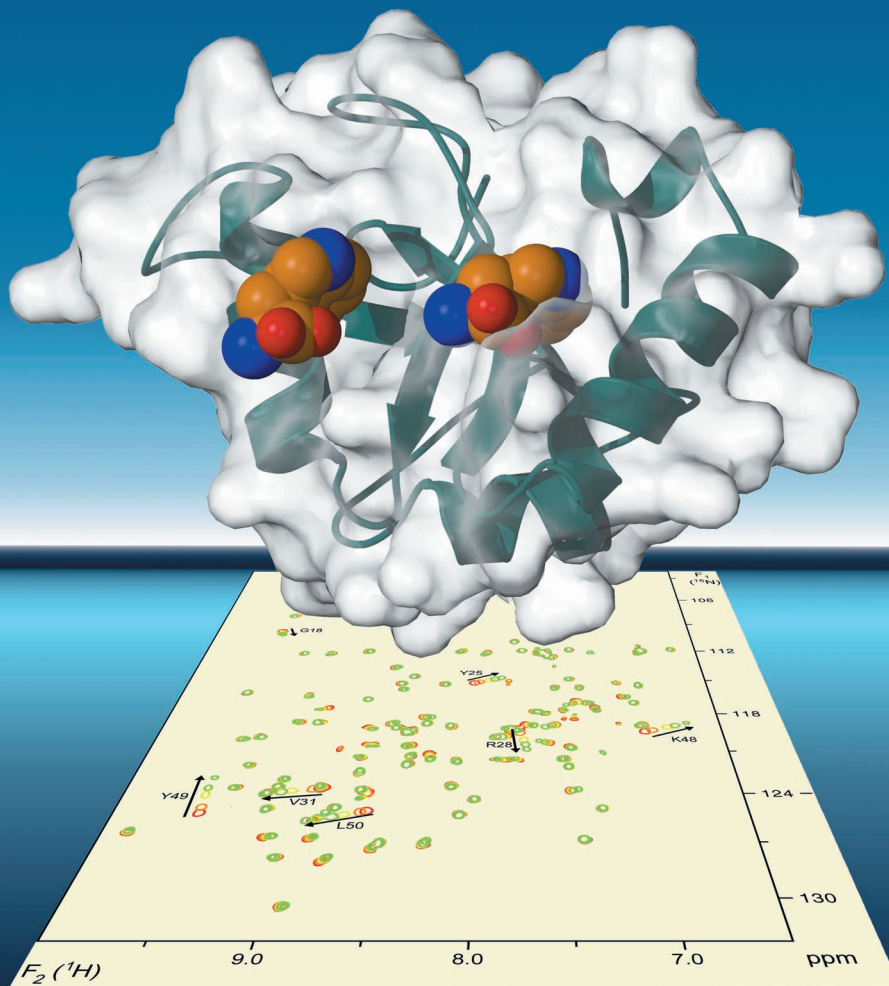


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GABARAP displays two tryptophan binding sites



Binding site mapping by two-dimensional NMR

11/2008

Chemistry & Life Sciences

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(M. Evans)

Highlight: A New Organometallic Interaction in Biology
(O. Kühn, W. Hinrichs)

Plus Original Contributions



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Cover Picture

Yvonne Thielmann, Jeannine Mohrlüder, Bernd W. Koenig*, Thomas Stangler, Rudolf Hartmann, Karin Becker, Hans-Dieter Höltje, and Dieter Willbold*

The cover picture shows the NMR structure of the GABA_A receptor associated protein (GABARAP) in a ribbon and surface representation with two bound tryptophans located in hydrophobic pockets on the surface of GABARAP. NMR spectroscopy allowed the mapping of the indole binding sites onto the surface of the protein and provided a quantitative estimate of the binding affinity. A subset of amide ¹H–¹⁵N correlation peaks of GABARAP in the two-dimensional NMR spectrum show gradual positional shifts upon titration with tryptophan and other indole derivatives. This behavior is indicative of rapid ligand exchange on and off the binding site. Biological relevance of the indole binding sites for various GABARAP ligand interactions is indicated by the presence of conserved tryptophan residues in GABARAP ligands. Further details can be found in the article by D. Willbold, B. W. Koenig et al. on p. 1767 ff.

