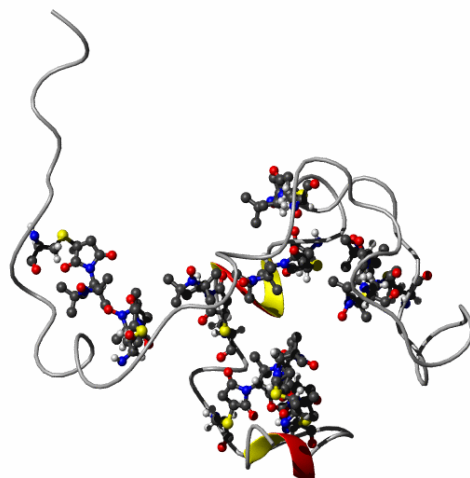




Target ID	GO.81782	
Source Organism	<i>Bos taurus</i>	
Target Name	PDEgamma	
PDB Entry	2JU4	Deposition: 14-Aug-2007
BMRB Entry	15430	Deposition: 16-Oct-2007
Function	gamma subunit of cGMP phosphodiesterase	
Produced From	<i>E. coli</i>	
Structure by NMR	Restraints/Residue: N/A	Subunits/Molecule: 1
	No. of Residues: 87	Molecular Weight: 9.5 kDa
	Backbone RMSD: N/A (Disordered protein)	All Heavy Atoms RMSD: N/A (Disordered protein)
Data Collected At	Nuclear Magnetic Resonance Facility at Madison (NMRFAM)	
Authors	Song, J., Guo, L., Ruoho, A.E., Markley, J.L.	



Structural Features

The retinal phosphodiesterase (PDE6) inhibitory gamma-subunit (PDEgamma) plays a central role in vertebrate phototransduction through alternate interactions with the catalytic alphabeta-subunits of PDE6 and the alpha-subunit of transducin (alpha(t)). Detailed structural analysis of PDEgamma has been hampered by its intrinsic disorder. We present here the NMR solution structure of PDEgamma, which reveals a loose fold with transient structural features resembling those seen previously in the x-ray structure of PDEgamma(46-87) when bound to alpha(t) in the transition-state complex. NMR mapping of the interaction between PDEgamma(46-87) and the chimeric PDE5/6 catalytic domain confirmed that C-terminal residues 74-87 of PDEgamma are involved in the association and demonstrated that its W70 indole group, which is critical for subsequent binding to alpha(t), is left free at this stage. These results indicate that the interaction between PDEgamma and alpha(t) during the phototransduction cascade involves the selection of preconfigured transient conformations.

References: (1) Song, J., Guo, L.W., Muradov, H., Artemyev, N.O., Ruoho, A.E., Markley, J.L. (2008) Intrinsically disordered gamma-subunit of cGMP phosphodiesterase encodes functionally relevant transient secondary and tertiary structure. *PNAS* 105(5):1505-10.

Percent Identity with Nearest PDB Structure at Time Solved	46% coverage (1FQJ)
Pfam Cluster	PDE6
Sequence Family Size	57

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