

Membrane Guanylyl Cyclases And Calcium-Sensitive Regulatory Proteins Control Cyclic Gmp Synthesis For Phototransduction.

Dizhoor, A. M., Olshevskaya, E. V., Laura, R., Lowe, D. G., and Hurley, J. B. (1994) The human photoreceptor membrane guanylyl cyclase, RetGC, is regulated by calcium and a soluble activator. *Neuron*. **12**:1345-1352.

Dizhoor, A.M., Olshevskaya, E.V., Henzel, W.J., Wong, S.C., Stults, J.T., Ankoudinova, I. and Hurley, J.B. (1995) Cloning, sequencing and expression of a 24 kDa Ca²⁺-binding protein activating photoreceptor membrane guanylyl cyclase. *J. Biol. Chem.* **270**:25200-25206.

Laura, R.P., Dizhoor, A.M. and Hurley, J.B. (1996) The membrane guanylyl cyclase, RetGC-1, is activated through its intracellular domain by GCAP-2. *J. Biol. Chem.* **271**:11646.

Dizhoor, A.M. and Hurley, J.B. (1996) Inactivation of EF-hands makes GCAP-2 (p24) a constitutive activator of photoreceptor guanylyl cyclase by preventing a Ca²⁺-induced "activator-to-inhibitor" transisition. *J. Biol. Chem.* **271**:19346-19350.

Olshevskaya, E., Hughes, R. E., Hurley, J. B., and Dizhoor, A. M. (1997) Calcium binding, but not a calcium-myristoyl switch, controls the ability of guanylyl cyclase activating protein GCAP-2 to regulate photoreceptor guanylyl cyclase. *J. Biol. Chem.* **272**:14327-14333.

Tucker, C.L., Laura, R.P. and Hurley, J.B. (1997) Domain-specific stabilization of photoreceptor membrane guanylyl cyclase by adenine nucleotides and guanylyl cyclase activation proteins (GCAPs). *Biochemistry* **36**:11995-12000.

Tucker, C.L., Hurley, J.H., Miller, T.R. and Hurley, J.B. (1998) Two amino acid substitutions convert a guanylyl cyclase, RetGC-1, into an adenylyl cyclase. *Proc. Natl. Acad. Sci. USA* **95**:5993-5997.

Laura, R. P. and Hurley, J. B. (1998) The kinase homology domain of retinal guanylyl cyclases 1 and 2 specifies the affinity and cooperativity of interaction with guanylyl cyclase activating protein 2. *Biochemistry* **37**:11264-11271.

Olshevskaya, E. V., Boikov, S., Ermilov, A. Krylov, D., Hurley, J. B., and Dizhoor, A. M. (1999) Mapping functional domains of the guanylate cyclase regulator protein, GCAP-2. *J. Biol. Chem.* **16**:10823-10832.

Krylov, D. M., Niemi, G. A., Dizhoor, A. M., and Hurley, J. B. (1999) Mapping sites in guanylyl cyclase activating protein-1 required for regulation of photoreceptor membrane guanylyl cyclases. *J. Biol. Chem.* **274**:10833-39.

Tucker, C. L. Woodcock, S.C., Kelsell, R.E., Ramammurthy, V., Hunt, D.M. and Hurley, J.B. (1999) Biochemical analysis of a dimerization domain mutation in RetGC-1 associated with dominant cone-rod dystrophy. *Proc Natl Acad Sci U S A.* **96**:9039-44.

Dizhoor, A.M. and Hurley, J.B. 1999. Regulation of photoreceptor membrane guanylyl cyclases by guanylyl cyclase activator proteins. *Methods.* **19**:521-531.

Hurley, J.B. and Dizhoor, A.M. Heterogeneous expression and assays for photoreceptor guanylyl cyclases and guanylyl cyclase activating proteins. *Methods in Enzymology*, **315**:708-717.

Wilkie, S.E., Newbold, R.J., Deery, E., Walker, C.E., Stinton, I., Ramamurthy, V., Hurley, J.B., Bhattacharya, S.S., Warren, M.J. and Hunt, D.M. (2000) Functional characterization of missense mutations at codon 838 in retinal guanylate cyclase correlates with disease severity in patients with autosomal dominant cone-rod dystrophy. *Hum. Mol. Genet.* **9**:3065-73.

Ramamurthy, V., Tucker, C.L., Wilkie, S.E., Daggett, V., Hunt, D.M. and Hurley, J.B. (2001). Interactions within the coiled-coil domain of RetGC-1 guanylyl cyclase are optimized for regulation rather than for high affinity. *J. Biol. Chem.* **276**:26218-26219.

Krylov, D.M. and Hurley, J.B. (2001). Identification of proximate regions in a complex of retinal guanylyl cyclase 1 and guanylyl cyclase activating protein-1 by a novel mass spectrometry based method. *J Biol Chem.* **276**:30648-54,

Tucker, C.L., Ramamurthy, V., Pina. A.L., Loyer, M., Dharmaraj, S., Li, Y., Maumenee, I.H., Hurley, J.B., Koenekoop, R.K. (2004). Functional analyses of mutant recessive GUCY2D alleles identified in Leber congenital amaurosis patients: protein domain comparisons and dominant negative effects. *Mol Vis* **10**:297-303.