

Krassimira Hristova Angelova

Education:

Year	Degree	Institution
1972	M.S.	University of Sofia, Bulgaria
1981	Ph.D.	Institute of Molecular Biology, Sofia, Bulgaria

Academic positions held:

Research Assistant, Institute of Plant Physiology, Sofia, Bulgaria, 1972-1974.

Graduate Fellow, Institute of Molecular Biology, Sofia, Bulgaria, 1974-1981.

Research Scientist, Institute of Plant physiology, Sofia Bulgaria, 1981-1982.

Research Scientist, University of Georgia, Athens, GA, 1984 - present.

Research interests:

My recent work has focused on the following studies:

1. Elucidation of determinants for functional LHR-G-protein coupling. To identify sequences in ICL2 and ICL3 that may be important in LHR signaling, all the amino acid residues in ICL2 from V459 to H482 and from K548 to K563 in ICL3 will be mutated to Ala individually and in a stretch of amino acid residues. The mutant receptors will be characterized for their binding and signaling properties through cAMP or IP pathways. Stable lines will be generated of mutants that exhibit good cell surface expression and demonstrate a decrease or loss in signaling by either pathway, and their coupling to different G-proteins will be determined. The inactivating mutations will be coupled with a constitutively active mutant to determine if the sequences having the mutation/s are part of the G-protein binding site.

2. The role of transmembrane helices (TMH) 6 and 7 of LHR in receptor activation and transmembrane signaling. The combination of molecular modeling and site-directed mutagenesis has been used as a powerful approach in elucidating the structure-function relationships this G-protein coupled receptor. We have utilized site-directed mutagenesis on TMH 6 and 7 of rat LHR to prepare and characterize a number of single, double and triple mutants. Molecular Dynamics simulations of the wild type LHR and its mutants have been done on a new LHR model built by comparative modeling, using the crystal structure of rhodopsin as a template. The results from this study will provide new insight into the structural features of LHR associated with mutation-induced activation.

3. To conduct a comparative study of the relative importance of Asp and Glu in the conserved region, FNPCEIDIMGY, in the extracellular domain (ECD) of the three glycoprotein hormone receptors, LHR, FSHR and TSHR, in ligand-mediated signaling under two commonly used assay conditions with particular emphasis on the role of ionic strength.

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