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Receptor ligands as targets and targeting agents for novel therapeutics

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Abstract

Receptor binding by ligands at the cell surface constitutes a mean for the cell to sense changes in the extracellular environment and the first step towards eliciting an appropriate response to those changes. However, long ago it was also recognized that the exquisite ligand-receptor specificity is the ultimate tool for cell targeting and the delivery of therapeutics. Further, the ligand-receptor binding event and the ligands themselves (growth factors, cytokines, etc) become the targets of signaling regulatory strategies.

During this talk I will discuss our work using different natural and artificial ligands as targeting agents in cancer therapeutics (with special emphasis in bladder cancer). I will also address our recent advances on ligand/receptor binding- and internalization-modulation strategies to control cell sensitivity and downstream signaling using antibodies and manipulating the endocytic machinery.

Biography

R. Claudio Aguilar obtained his Ph.D. from the University of Buenos Aires in Immunochemistry and Molecular Endocrinology. In 1996, he moved to Bethesda, MD to pursue a Post-Doctoral position in Cell Biology at the National Institutes Health (NIH). From 2001 to 2005, Dr. Aguilar served as Associate Research Scientist in the Department of Biology, The Johns Hopkins University. During this period he studied different aspects of protein transport in human cells and in *Saccharomyces cerevisiae* using biochemical, cell biological and genetic approaches. In 2005, Dr. Aguilar accepted a position as Assistant Professor, and currently serves as Associate Professor and Assistant Head, in the Department of Biological Sciences, Purdue University. He has published more than 40 papers in reputed journals that have been cited more than 3000 times. In addition, he serves in several editorial boards and study sections. Dr. Aguilar's research is oriented towards understanding and developing therapeutic strategies against cancer metastasis and developmental diseases.