

Abstract of Presentation

Presentation Title:

ALPHA-1-ADRENOCEPTOR PHOSPHORYLATION AND
DESENSITIZATION

Abstract

G protein-coupled receptors are integral membrane proteins that transmit signals to cells in response to agents as varied as light, ions, lipids, amino acids, nucleotides, peptides and proteins. Many hormones, neurotransmitters and autacoids exert their actions through these receptors. They comprise about 5% of human genome and are the largest family of integral membrane proteins. In addition these receptors are important pharmacological targets and it is estimated that 40-50% of currently used drugs target these receptors.

Modulation of receptor sensitivity participates in cell adaptation to changes in the internal milieu and it has been observed that receptor phosphorylation is a key initial event in such modulation. Our laboratory has studied the alpha-1-adrenoceptor subtypes and the role(s) of phosphorylation in their actions. These receptors mediate many of the actions of adrenaline and noradrenaline. Our results indicate that the three subtypes, i. e., alpha-1A, B and D are regulated by phosphorylation/dephosphorylation cycles and there are significant differences among them.