

Polylysine-containing peptides, including the carboxyl-terminal segment of the human c-Ki-ras 2 protein, affect the activity of some key membrane enzymes

Gatica,

Allende,

Antonelli,

Allende,

Polylysine-containing peptides are found to affect membrane protein kinases, phosphatidylinositol kinases, and adenylate cyclase. Poly(L-lysine), poly(D-lysine), random copolymers of lysine and serine or lysine and alanine, and poly(L-ornithine) produced large increases in the in vitro phosphorylation of some membrane proteins present in *Xenopus laevis* oocyte membranes. Poly(L-arginine) did not cause a similar stimulation. In these membranes the phosphorylation of polydisperse protein of approximately 25 kDa was also greatly increased by 1 mM spermine spermidine, by 10 μ M histone H1, or by 200 μ M peptide containing the 14-residue sequence at the carboxyl terminus of the human c-Ki-ras 2 gene product, which has eight lysines. Similar specific stimulation of protein phosphorylation was observed with membranes of NG-108-15 nerve cells in culture. Polylysine peptides, including the c-Ki-ras 2 segment, also stimulate the in vitro phosphorylation of membrane inositolphospholipids, to produce