Azurin:50-77 Cell Penetrating Peptide p28

National Cancer Institute

Source

National Cancer Institute. Azurin:50-77 Cell Penetrating Peptide p28. NCI Thesaurus. Code C85480.

A water-soluble, amphipathic, 28 amino acid (amino acids 50-77), 2.9 kD fragment peptide (p28) derived from the protein azurin with potential antineoplastic and antiangiogenic activities. Although the mechanism has yet to be fully elucidated, the preferential cellular uptake of azurin-derived cell-penetrating peptide p28 by tumor cells and endothelial cells is likely via caveolae-mediated endocytosis; the C-terminal 18 amino acid residues (50-67) appear to be responsible for this preferential uptake. After cell entry, the first 12 amino acid residues interact with tumor suppressor p53 and form a p28:p53 complex, which may result in a reduction of proteasomal degradation of p53, increased p53 levels, and p53-mediated cell cycle inhibition and apoptosis. Azurin is a cupredoxin secreted by the bacterium Pseudomonas aeruginosa. Cell penetrating peptides (CPPs) are cationic and/or amphipathic peptides, typically less than 30 amino acids in length, that can penetrate cell membranes easily and may transport molecular cargo.