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Oncogene SIS

National Cancer Institute

Source

National Cancer Institute. *Oncogene SIS*. NCI Thesaurus. Code C17135.

Human Oncogene SIS is a mutated variant of PDGFB Gene (PDGF/VEGF Family), which encodes 2 alternative isoforms of 241-aa 27-kDa (precursor) Platelet-Derived Growth Factor-Beta Chain, a potent mitogenic factor for mesenchymal cells characterized by a motif of eight cysteines and released by platelets upon wounding to stimulate adjacent cell growth; PDGF activates a RAS/PIK3/AKT 1/IKK/NFKB1 pathway. PDGFB can exist as a disulfide-linked homodimer or heterodimer with Platelet-Derived Growth Factor Alpha. AA, BB, and AB, dimers bind to PDGF receptor and elicit a variety of cellular responses. A and B homodimers are implicated in transformation. PDGFB mutations are associated with meningioma. Reciprocal t(17;22)(q22;q13) translocations with COL1A1 result in unregulated growth factor expression and are associated with DFSP. Oncogene SIS disrupts normal cell function.