PDGFR

PDGFR (Platelet Derived Growth Factor Receptor) is a receptor for the growth factor PDGF. It is encoded in two genes (PDGFRA and PDGFRB), resulting in two receptors designated α and β, which differ in their affinity for individual PDGF isoforms. PDGFR is a type III transmembrane tyrosine kinase, activation occurs by dimerization after ligand binding and subsequent autophosphorylation. The receptors are expressed on a number of cells of mesenchymal origin and on glial cells. Stimulation of receptors plays an important role during embryogenesis as well as during pathological conditions, especially during neovascularization during wound healing or tumor neovascularization. As PDGF signaling is a mitogenic stimulus for a number of cells of mesenchymal origin, impaired PDGFR signaling may itself be an element of pathogenesis. PDGFR mutations appear as one of the possible mechanisms of tumor transformation, for example in GISTomas (PDGFRA mutation leading to excessive signaling), glioblastomas (gene amplification) or in some hematological malignancies (gene fusion).

Links

Related articles

- PDGF
- Molecular mechanisms of neovascularization
- Tumor microenvironment
- Glioblastoma multiforme
- Gastrointestinal stromal tumor

Literature

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