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BIObrief

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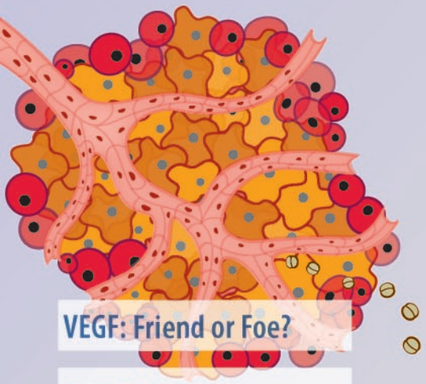

VEGF: Friend or Foe?

Effects of VEGF Signaling

The vascular endothelial growth factor (VEGF) family of ligands and its receptors play a critical role in the regulation of angiogenesis. While VEGF is required for blood vessel formation during embryogenesis and wound repair, upregulation of VEGF in response to tumor hypoxia stimulates pathological angiogenesis that allows tumor growth. In contrast, enhanced expression of VEGF under hypoxic conditions has been shown to have a protective effect on neurons, neural stem cells, and glial cells such as astrocytes and Schwann cells, suggesting that it may have a therapeutic potential for the prevention of neurodegenerative diseases. Further characterization of the effects of VEGF signaling in vascular and neural cell types is critical to our understanding of whether VEGF itself, or inhibitors of VEGF, can be used to treat diseases without adversely affecting other cell types in the body.

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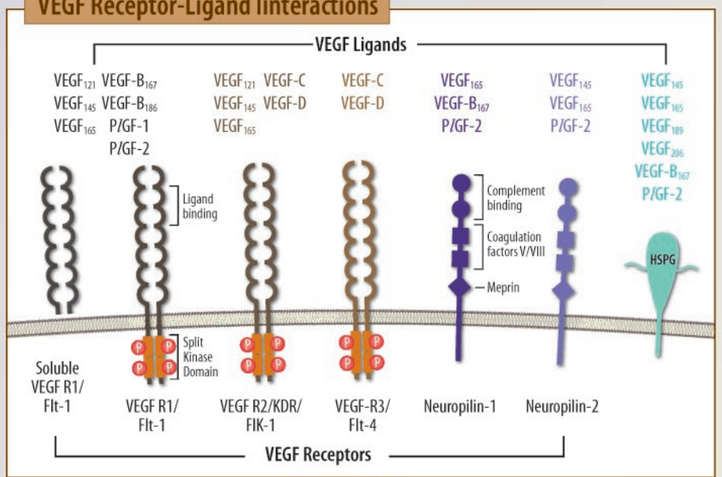
Neuroprotective & Pathogenic Effects of VEGF Signaling

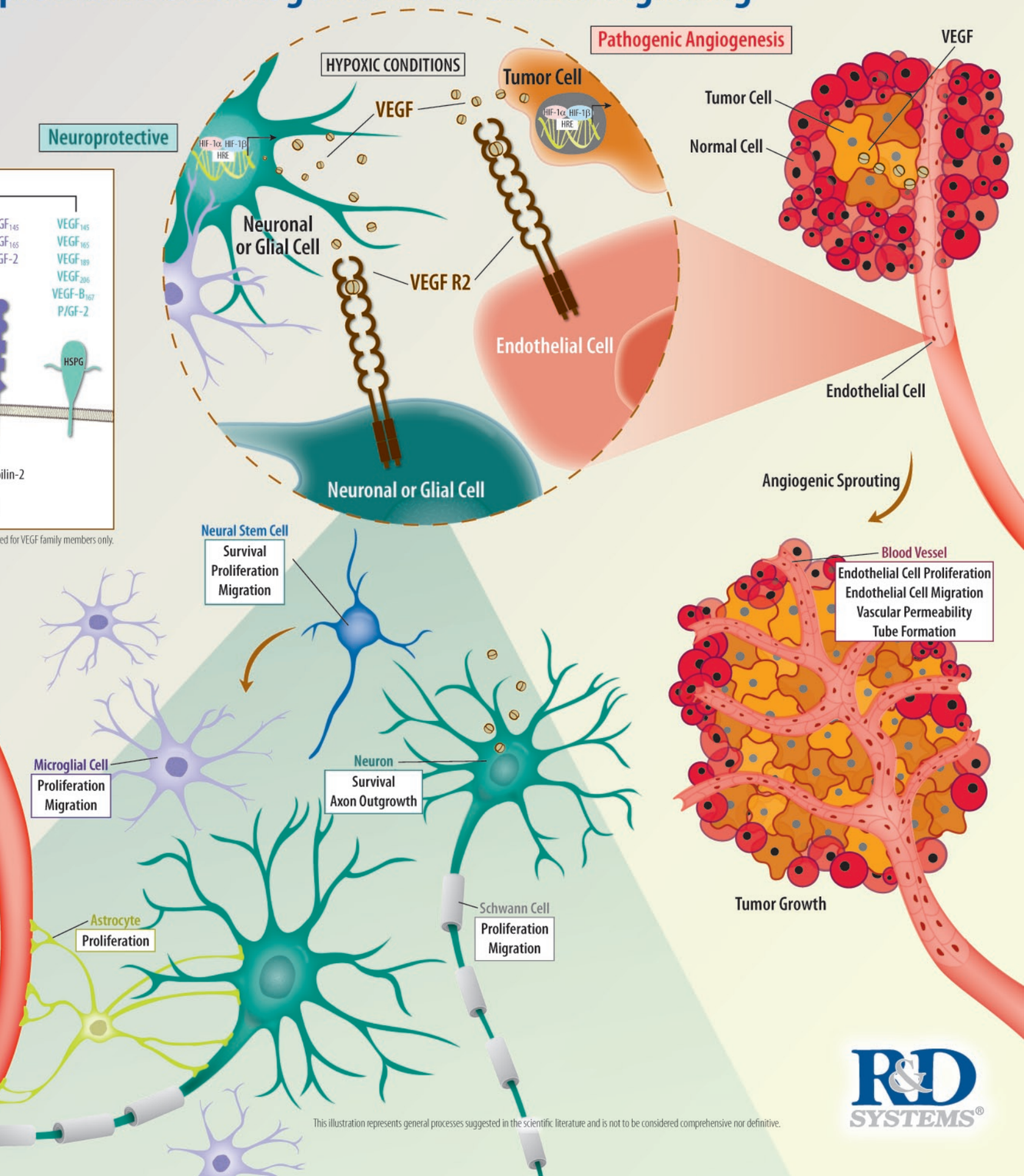
VEGF Receptor-Ligand linteractions



The interactions depicted are those that have been identified for VEGF family members only.

Human VEGF Ligands

The $VEGF_{148}$, $VEGF_{162}$, $VEGF_{165b}$, $VEGF_{183}$ splice variants, viral VEGF-E, and P/GF-3, P/GF-4 family members are not shown.



This illustration represents general processes suggested in the scientific literature and is not to be considered comprehensive nor definitive.

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