The roles of chemokine CXCL12 in embryonic and brain tumor angiogenesis.

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The formation of blood vessels in embryos and tumors are different processes but under the control of common molecular mechanisms. Chemokine CXCL12 involved in both embryonic and tumor angiogenesis. In this review, we summarize recent advances in understanding the roles of CXCL12 in brain tumor angiogenesis/vasculogenesis. CXCL12 and its cognate receptors are abnormally induced in brain tumors, in particular in tumor cells and endothelium. Pathologically enhanced CXCL12 signaling may promote the formation of new vessels through recruiting circulating endothelial progenitor cells or directly enhancing the migration/growth of endothelial cells. Therefore, CXCL12 signaling represents an important mechanism that regulates brain tumor angiogenesis/vasculogenesis and may provide potential targets for anti-angiogenic therapy in malignant gliomas.

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