Recent advances on amelioration of angiogenic molecules and metastasis through phyto-analogs

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Abstract

Cancer in the broader sense refers to more than 277 different types of cancer disease. Cancer; is the second leading cause of death, affecting the health of all human societies. Elevated proliferation, angiogenesis, invasion, and metastasis are the hallmarks of cancer. Angiogenesis is a double-edged sword; it is a mechanism that defines the edge between health and disease. Despite its central role in physiological homeostasis, it provides the oxygen and nutrition needed by tumor cells to proceed from dormancy if pro-angiogenic factors tip the balance in favor of tumor angiogenesis. vascular endothelial growth factor (VEGF) is a prominent target among pro-angiogenic factors, in therapeutic methods due to its strategic involvement in the formation of anomalous tumor vasculature. Manipulation in effector molecules like VEGF, PDGF, Integrin $\alpha v\beta 3$, FGF, and Eph-B4/ephrin-B2 have played an important role in inhibiting angiogenesis followed by reduced tumor growth and it's spread. Secondary metabolites such as baicalin, capsaicin, quercetin, EGCG, and lycopene have been found to disrupt angiogenic mechanisms. This work is an attempt to put up a comprehensive approach to understanding the impact of angiogenesis in cancer invasion and their amelioration through phyto-analogs.

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