

Potential of Polyphenolic Nutraceuticals in the Management of Glioblastoma Multiforme

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Glioblastoma Multiforme (GBM) is a malignant central nervous system tumor. GBM is produced by aggressive proliferation of cells and invasion of normal brain tissue. The current conventional therapies for GBM include surgery, chemotherapy, and radiation therapies which are challenging and produce adverse effects. Thus, polyphenolic nutraceuticals are effective natural compounds for preventing and treating GBM due to their chemoprotective activity. Polyphenols are bioactive, non-nutrient plant chemicals structurally sub-divided into 5 groups; among these groups, phenolics and flavonoids are widely studied as they have lesser side effects and a more significant potential to pass the Blood-Brain Barrier (BBB). These polyphenolic nutraceuticals have the potential to advance current GBM treatment options. This review throws light on the anti-cancer efficacy of major polyphenol classes (Phenolic acid, Flavonoids, Stilbenes, Lignans) and discusses their prospective mechanisms of action in GBM.

Keywords: Glioblastoma multiforme, polyphenols, flavonoids, anticancer, phytochemicals, nutraceuticals.