# Compounds found in Green Tea

The extract of green tea leaves contains a variety of compounds with many biological activities. Originally isolated and studied as antioxidants, these compounds have since displayed additional anticancer, antiviral, and anti-inflammatory activities.

The primary active ingredients in green tea extracts are catechins such as **Epigallocatechin Gallate (EGCG, E6234), (-)-Epigallocatechin (EGC, E6233), (-)-Epicatechin Gallate (ECG, E6232)**, and **(-)-Epicatechin (E6231)**. These polyphenols exhibit excellent chemopreventive and chemotherapeutic potential, suppressing cell growth in several different in vitro models of cancer by altering MAPK signaling, CDK expression, topoisomerse I activity, and NF-κB activation[1]. Green tea catechin EGCG suppresses activation of EGFR, IGF-1R, and VEGFR2, inducing apoptosis and inhibiting proliferation of colorectal cancer cells and hepatocellular carcinoma cells[2].

Green tea catechins also display other biological activities. Epicatechin inhibits replication of hepatitis C virus and downregulates expression of COX-2, iNOS, TNF-α, and IL-1β in vitro[3]. In erythrocytes, these compounds prevent t-BHP-induced increases in malondialdehyde and decreases in glutathione[4].

Additional components of green tea extract include flavonoids such as **Quercetin (Q8016), Myricetin (M9367)**, and **L-Theanine (T2816)**. In animal models of subarachnoid hemorrhage, quercetin ameliorates vehavioral deficits by enhancing activity of superoxide dismutase and glutathione peroxidase and decreases levels of malondialdehyde[5]. Myricetin induces ROS-dependent apoptosis in leukemia cells[6]. In spontaneously hypertensive animal models, administration of L-theanine significantly decreases blood pressure[7].

LKT Laboratories carries additional catechins and flavonoids as well as mixtures of the above compounds, such as **Green Tea Polyphenols (G6817)** and a high purity **Catechin Mixture (99%, C0278)**.


References:
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