

Inhibitory effects of (-)-epigallocatechin-3-gallate from green tea on the growth of *Babesia* parasites.

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Abstract

(-)-Epigallocatechin-3-gallate (EGCG) is the major tea catechin and accounts for 50-80% of the total catechin in green tea. (-)-Epigallocatechin-3-gallate has antioxidant, anti-inflammatory, anti-microbial, anti-cancer, and anti-trypanocidal activities. This report describes the inhibitory effect of (-)-Epigallocatechin-3-gallate on the in vitro growth of bovine *Babesia* parasites and the in vivo growth of the mouse-adapted rodent *Babesia* *B. microti*. The in vitro growth of the *Babesia* species was significantly ($P < 0.05$) inhibited in the presence of micromolar concentrations of EGCG (IC₅₀ values=18 and 25 μM for *B. bovis*, and *B. bigemina*, respectively). The parasites showed no re-growth at 25 μM for *B. bovis* and *B. bigemina* in the subsequent viability test. The drug significantly ($P < 0.05$) inhibited the growth of *B. microti* at doses of 5 and 10 mg/kg body weight, and the parasites completely cleared on day 14 and 16 post-inoculation in the 5 and 10 mg/kg treated groups, respectively. These findings highlight the potentiality of (-)-Epigallocatechin-3-gallate as a chemotherapeutic drug for the treatment of babesiosis.

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