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The role of the green tea in chemoprevention

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Abstract

Tea is one of the most consumed beverages worldwide, second only to water. There are three major tea types, green, oolong and black teas which are all processed from the buds of the *Camellia sinensis* plant. It is estimated that 78% of the world's tea production is black tea and green tea production constitutes about 20%. Green tea is the least processed and contains less caffeine than both oolong and black teas. The major catechins, a group of polyphenols, in green tea include: (-)-epigallocatechin- 3-gallate (EGCG); (-)-epigallocatecin (EGC); (-)-epicatechin (EC); and (-)-epicatechin gallate (ECG). The synthesis of catechins by tea leaves occurs during the day and is temperature dependent. The most abundant catechin component of green tea is (-)-epigallocatechin-3-gallate (EGCG), which has been the focus of numerous *in vitro* and *in vivo* experiments. Cell culture, animal and clinical trials indicate that EGCG possesses antiproliferative, antimutagenic, antioxidant and chemopreventive effects. We will briefly summarize the mechanism of action(s) green tea exerts on cell proliferation. Additionally, we will provide an overview green tea as a chemopreventive agent in mouse cancer models.

Biography

Laura Schramm received her Ph.D. from SUNY at Stony Brook in Molecular and Cellular Pharmacology and completed postdoctoral training at Cold Spring Harbor Laboratory. Currently, she is an Associate Professor and Associate Dean in St. John's College of Arts and Sciences at St. John's University. Her research group focuses on the regulation of RNA polymerase III transcription by polyphenols including green tea and soy. Her research is funded by the National Institutes of Health and serves on the editorial board of several journals including the Journal of Carcinogenesis and Mutagenesis (OMICS).