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FOOD SCIENCE

Green tea belittles cancer

Nutritionists have been touting green tea's anticancer benefits for years. Studies have shown that people who drink it tend to develop fewer cancers and that animals administered the brew derive similar benefits (SN: 8/31/91, p. 133). How this tea works its magic, however, has remained an open question.

Researchers at Purdue University in West Lafayette, Ind., now think they've stumbled upon at least part of the answer.

Green tea contains a potent antioxidant with the unwieldy name of epigallocatechin gallate, or EGCg. Biochemist D. James Morré and his colleagues find that this compound shuts down quinol-oxidase, an enzyme that cancer cells need to divide and reproduce. While normal cells also rely on this enzyme to grow and proliferate, EGCg's enzyme-inhibiting effect appears to be restricted to tumor cells.

The tea constituent seems to thwart a cancer by halting the enlargement of its cells—something that "is clearly not an antioxidant function," Morré notes. Many cancer-fighting nutrients studied so far have proved capable of disabling oxidants. In the test tube, when EGCg-stunted cells fail to reach a critical size needed to divide, they succumb to a programmed cell death. Ordinarily, tumor cells live indefinitely.

But what about black tea, the brew consumed by about 80 percent of tea drinkers around the world? It also contains EGCg, though in far smaller concentrations than green tea. Both teas are prepared from leaves of the same plant. Morré suspects that black tea's paucity of EGCg explains why it's only one-tenth to one-hundredth as potent as green tea at inhibiting the quinol-oxidase reaction in test-tube-grown cancer cells.

However, "there's no reason why you shouldn't derive some benefit from drinking black tea"—especially if it's sipped regularly through the day to ensure that at least a little EGCg is usually present in the body, concludes Morré, himself a heavy consumer of this more popular brew.

He and Dorothy M. Morré reported their team's findings in San Francisco last month at the American Society for Cell Biology annual meeting.

—*J.R.*