

Better butter? This one may fight cancer

Butter could become something of a health food, a new study suggests.

In recent years, nutritionists have been haranguing adults to cut their intake of red meats and dairy products because of the artery-clogging fats these foods bring to the dinner table. Lost in this campaign has been an emerging wealth of data on the benefits of an unusual animal fat—conjugated linoleic acid (CLA)—in the meat and milk of ruminants.

Identified first in hamburgers (SN: 1/9/88, p. 24) and later in dairy products (SN: 2/11/89, p. 87), some types of CLA are potent anticancer agents, at least in animals (SN: 2/15/92, p. 104). Another type, in mice, seems to melt away fat, researchers have just learned.

Amounts of CLA in the people's diets typically fall well below those that have proved beneficial in animal studies. So, Dale E. Bauman and his colleagues at Cornell University have worked out a way to naturally augment CLA in milk.

They supplement a cow's diet with sunflower oil. CLA then accounts for some 4.5 percent of the fat in butter made from this milk—eight times the normal amount.

Clement Ip of the Roswell Park Cancer Institute in Buffalo, N.Y., and his colleagues incorporated fat from this Cornell butter into the diets of young rats. They fed other rats a diet augmented with the same amount of butterfat but containing the usual proportion of CLA.

One month later, the scientists injected the animals with a chemical carcinogen. Cancer developed in 93 percent of the rats on the normal diet but in only half of those given the CLA-enriched diet. The researchers report their results in the December *JOURNAL OF NUTRITION*. The finding "demonstrates for the first time that the natural CLA in foods is biologically active" and that its levels can be naturally enhanced, concludes Bauman.

Ip has found that a high-CLA diet in rats reduces the number of terminal end buds, the structures in which mammary tumors form. CLA seems to target rapidly dividing cells and "increases programmed cell death," he says, stopping would-be cancers in their tracks.

This research, while "important and well done," focuses on only the predominant CLA, observes Michael W. Pariza, a nutritional biochemist at the University of Wisconsin-Madison. He notes that the fat comes in several forms, or isomers, possessing differing benefits.

Depending on the type of bonds linking its string of 18 carbon atoms, CLA can assume different shapes and functions. In the butter, Bauman's team increased the most abundant isomer, known as *cis-9, trans-11*, which is the form most strongly linked to anticancer benefits.

Pariza's group recently showed that in mice, another CLA—*trans-10, cis-12*—"reduces body fat and enhances lean body mass." He says, "This CLA makes big fat cells get little and stay that way."

On Dec. 1, Tilak R. Dhiman's team at Utah State University in Logan filed a patent for a new ruminant feeding regimen to increase 10-fold this slimming concentration in meat of this CLA. "We can't yet do that for the milk," he told *SCIENCE NEWS*, "but we're working on it."

—J. Raloff