EVERYTHING YOU EVER WANTED TO KNOW ABOUT L-Cysteine BUT WERE AFRAID TO ASK

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Did you know that L-cysteine—a common dough conditioner, flavor enhancer in human and pet foods, and precursor in some dietary supplements—is most often derived from human hair or duck feathers and to a lesser extent from pigs’ bristles and hooves? We reported the human and animal origins of L-cysteine in The Vegetarian Resource Group’s Guide to Food Ingredients ten years ago. At that time, the most common source was human hair found on the floors of Chinese barbershops. Today, it is derived from Chinese duck feathers approximately 80 percent of the time (estimation based on values given by several companies that manufacture and sell L-cysteine).

At least two forms of synthetic L-cysteine that were not readily available in 1997, when we first reported on L-cysteine, are manufactured today. They are produced by Ajinomoto and Wacker Biochem. Ajinomoto stated that it uses industrial chemicals that undergo a biochemical transformation brought about by non-animal enzymes. Previously selling both the ‘natural’ (i.e., animal- or human-derived L-cysteine) and synthetic forms, Ajinomoto completely switched in 2000 to selling only the synthetic form of L-cysteine. Wacker Biochem informed us that they produce L-cysteine through a microbial fermentation process developed in 2001 using corn sugar as the growth medium. Since both forms are expensive, they are not commonly used. According to both companies, the synthetic forms of L-cysteine are certified kosher and halal. L-cysteine derived from human hair or duck feathers may or may not be certified kosher and/or halal.

The use of synthetic L-cysteine could increase over time. Doug Hackett of Premium Ingredients, a major supplier of L-cysteine derived from human hair or duck feathers, told us that he’s recently had to turn away several potential customers looking for synthetic L-cysteine because Premium sells only the non-synthetic variety. Requests from customers concerned about human- or animal-derived ingredients in their foods could also accelerate the use of synthetic L-cysteine in foods over feather- or human hair-derived L-cysteine.

L-cysteine is considered a substance that is generally recognized as safe by the Food and Drug Administration (FDA). It must be labeled by its “common and usual name” (i.e., “L-cysteine”) on food packages, even if present in very small amounts, as long as it has a functional effect in foods. In other cases, such as when it is used to make flavors that are in foods, it does not have to be labeled. When L-cysteine does have to be labeled, its source does not have to be specified, according to the FDA.

While researching L-cysteine, The VRG asked several fast food chains and a major vegetarian food company about the sources of L-cysteine in their products. McDonald’s told us that L-cysteine derived from duck feathers is in their Honey Wheat Roll, the Deluxe Warm Cinnamon Roll, and the Baked Apple Pie. The L-cysteine in several items offered at Dunkin’ Donuts is also derived from duck feathers. Burger King told us in June 2007 that it “could not guarantee” the source of L-cysteine in its products.

On the other hand, Subway announced, in March 2007, that it has removed the L-cysteine from its otherwise animal product-free Carb Conscious Wrap. When asked about the source of L-cysteine in several of Domino’s Pizza products, the company told us that L-cysteine is “microbially derived” in its Hand-Tossed Crust and informed us that the L-cysteine in Domino’s Breadsticks, Cheesy Bread, and Cinna Stix® is “vegetable-derived.” The public relations firm for Morningstar Farms told us that the L-cysteine in their Veggie Bites Country Scramble, Veggie Bites Spinach Artichoke, and Veggie Bites Eggs Florentine was a “microbial fermentation product.”

For more information about ingredients in foods, see The VRG’s Guide to Food Ingredients at <www.vrg.org/catalog/fmg.htm>.