

Transglutaminase in Meat Products

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In food processing, the enzyme transglutaminase (TG) is used as a “glue” to combine small pieces of meat into large chunks. Usually, transglutaminase of microbiological origin is used (mTG). In the general public, the enzyme has in the past been discussed in connection with so-called “glue ham”. During that discussion, the question came up whether mTG, when added to food, pose health risks for patients suffering from celiac disease. Research results on mTG in “enzyme glued ham” do not suggest that the enzyme itself (even in its active form) poses a relevant health risk in healthy persons without any impairment of their digestive function. What is known is that mTG can form various protein compounds (“enzymatic cross-linking”). Due to a lack of available data, it is currently not possible to assess these. The BfR has information from experimental studies indicating that mTG can, together with food proteins, form compounds that are structurally similar to gluten, gluten being responsible for the well-known immunological effects found in celiac patients. However, whether this results in health risks for these patients such as the typical effect of causing damage to the intestinal mucosa is not known for certain at present. To the extent that sufficient clinical studies on this are not available, a clinically relevant risk through microbial transglutaminase is possible for celiac disease sufferers. Suitable labelling of foods produced using mTG would enable these patients to avoid the uncertainties that the scientific community has yet to clarify. In addition, such labelling would ensure that all consumers are better informed on the use of “enzyme glue”. One way of inactivating mTG in the food product is thermal treatment. The existing data suggest that a risk for those affected by celiac disease, if it exists at all, could be virtually excluded thereby. The decisive issue continues to be that celiac disease can only be managed successfully, if patients avoid gluten altogether.

The full version of the BfR Information in German is available on <http://www.bfr.bund.de/cm/343/transglutaminase-in-fleischerzeugnissen.pdf>