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Reduction of Tetrazolium Salt XTT with UHT-Treat Relationship with the Extent of Heat-Treatment and Conditions

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UHT-treated milk reduced 3'-{1-[(phenylamino)-carbonyl]-3,4-te methoxy-6-nitro)benzenesulfonic acid hydrate (XTT). The reducibi Maillard reaction intermediate between milk protein and lactose. F of the XTT reduction was optimized using the heated model solutio lactose and UHT-treated milk. When the XTT reduction assay wa

UHT-treated milks under optimum conditions, the ability of each m
XTT significantly reflected the extent of the heat treatment as well a
using the hydroxymethylfurfural (HMF) value. In contrast to the HM
UHT-treated milk gradually decreased depending upon the storage
temperature. These results suggest not only that the present XTT as
estimate the extent of heat treatment but also that the reducibility of
treated under a given condition can serve to estimate the storage pe
temperature is known or *vice versa*. The method is much simpler (
solution containing menadione with milk sample) and quicker (abou
satisfactory reproducibility than the conventional methods to estima
Maillard reaction such as the lactulose or HMF determination.

Keywords: UHT-treated milk, Maillard reaction, tetrazolium salt

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