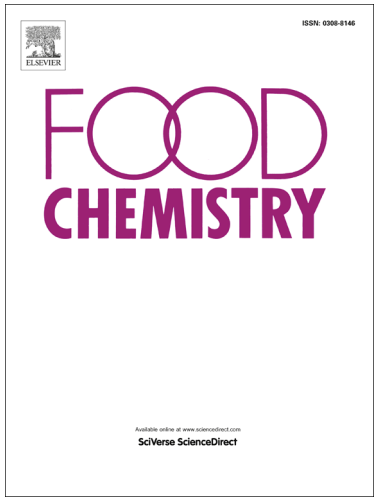


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# LC-MS study of the heat degradation of veterinary antibiotics in raw milk after boiling

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## Abstract

The aim of our study was to examine the degradation of veterinary antibiotics in milk during boiling. Raw cow milk samples were fortified with the target compounds and boiled for various short time-intervals prevailing in household practice. Antibiotic concentrations were determined by LC-MS/MS measurements. Degradation rate constants, half-lives and degradation percentages were calculated. Cefoperazone and cloxacillin proved to be the less and the most heat-stable substance, with 78.3 % and 9.6% degradation in 300 sec respectively. Aminoglicosides exhibited intermediate (33.8-43.6 %), tetracycline (30.4 %) and trimethoprim (22.6 %) intermediate to high heat stability. The results demonstrate that antibiotic residues possibly present in raw milk exhibit high heat stability when treated for few seconds at around 100 ºC. Keeping the milk at this temperature for at least two minutes would allow varying decrease in the amount of some compounds, but does not totally eliminate the potential risks to the consumer's health.