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EVALUATION OF BOVINE MILK PROCESSING ON THE DIGESTIBILITY AND ALLERGENICITY OF MILK PROTEINS

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ABSTRACT

The objective of this study was to evaluate whether thermal processes applied in milk, such as pasteurization and UHT affect the protein digestibility leading to changes in the allergenic responses. Samples were subjected to a simulation of the human digestion and subsequently evaluated regarding protein cleavages and enzyme immunoassay for caseins and β-lactoglobulin immunogenicity. Among the different samples, protein digestibility was mainly affected in the gastric phase. α-lactalbumin and caseins showed high susceptibility to gastrointestinal enzymes, while a partial β-lactoglobulin resistance to pepsin was observed. Concerning *in vitro* allergenicity, a tendency of reduction was demonstrated in UHT and powdered milk samples after digestion in the stomach. Following the intestinal digestion, all milk samples presented low allergenicity, over 96% reduction of antibody binding. These data corroborates to the understanding of the effects of the world´s most used heat treatments in cow's milk protein digestibility and allergenicity.