Correlation between bovine calpastatin mRNA transcripts and protein isoforms.

Calpastatin is a specific calpain protease inhibitor: calpains are a family of calcium-activated neutral proteases, which have been implicated in various processes. Despite all the available data concerning calpastatin, little is known about how this gene is regulated, particularly in bovine. The existence of four types of transcripts differing at their 5' ends (Type I, II, III, and IV) has been demonstrated. Here, we show that the Type I, II, and III transcripts are ubiquitous while Type IV is testis-specific. In addition, a Northern blot analysis revealed that the Type III transcript may have three different 3' termini. Using specific anti-peptide anti-sera, a correspondence between a 145 and a 125 kDa isoforms, and Type I and/or II and III transcripts, respectively, has been established. Finally, we discuss the origin of a 70 kDa isoform, recognized by anti-sera directed against the N-terminal region.