

**P029** Bovine brain matrix metalloproteinases; detection and inhibition

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Matrix metalloproteinases (MMPs) are zinc-dependent endopeptidases, that degrade both matrix and non-matrix proteins. They have been implicated in several CNS diseases, but play also an important role in morphogenesis, and in a wide range of processes including tissue repair and remodeling. In order to better understand the complexity of their functions, in the present work we studied MMPs activity in the protein fractions separated by Sephadex G-100 chromatography of normal bovine brain homogenate.

The gelatinolytic activity estimated by SDS-PAGE indicated lytic bands of various molecular weights, the 72KDa band corresponding to MMP2, which was confirmed by Western Blot analysis using anti-MMP2 antibodies. MMPs and their endogenous inhibitors (TIMPs) are involved in both physiological and malignant processes, the imbalance between them resulting in various disorders. As the therapeutic use of TIMPs is limited, and because only few synthetic inhibitors remained in trial, the synthesis of new inhibitors is very important. In this work the effect of small hydroxamate-based molecules, synthesized by our group was studied on MMPs separated from brain homogenate. Our results showed a specific inhibitory effect of the newly synthesized compounds on MMPs activity, suggesting their possible role as clinical candidates.