

A tryptic hydrolysate from bovine milk α_{S1} -casein improves sleep in rats subjected to chronic mild stress

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ABSTRACT

The putative effects of a tryptic bovine α_{S1} -casein hydrolysate on stress-induced sleep disorders were investigated and their possible link with typical blood stress parameters such as plasma corticosterone concentrations and glycaemia was assessed. Rats were subjected to chronic stress in the form of environmental disturbances, while receiving an oral administration of the α_{S1} -casein hydrolysate (CH). Chronic stress significantly reduced sleep duration in control rats during the first 2 days of the stress period, but stress-induced sleep disturbance was prevented in CH-treated rats. Indeed, CH administration allowed the maintenance of slow wave sleep (SWS) duration and even a slight increase in paradoxical sleep (PS) duration in treated rats. Results on plasma corticosterone concentrations and on glycemia values were inconclusive with respect to the implication of the HPA axis in this study. However, the protective effect of the α_{S1} -casein hydrolysate on sleep during exposure to our chronic mild stress conditions may be mediated by modulation of the central adrenergic response.