

**P050** The Effects of IL-1ra on Beta Amyloid mediated Depression of LTP in the Rat CA1 In Vivo

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A $\beta$  attenuates LTP and increases Interleukin-1beta (IL-1 $\beta$ ) in the rat CA1 *in vivo*. We have investigated the effects of IL-1ra on A $\beta$ -mediated depression of LTP. EPSPs were recorded in the CA1 of adult anaesthetised rats. A $\beta$ (1-40, 5  $\mu$ l, 1nmol) and IL-1ra (5  $\mu$ l, 350ng/ml) were injected icv. 1h. prior to high frequency stimulation (HFS; 200Hz). IL-1ra had no effect on LTP compared to controls and failed to reverse the A $\beta$ -mediated depression of LTP when co-injected with A $\beta$ . Hippocampal tissue from animals injected with IL-1ra had increased levels of IL-1 $\beta$ , suggesting the possible presence of endotoxin due to the IL-1ra E. coli source. Consistent with this observation, heat-treated IL-1ra attenuated LTP. Purified IL-1ra, also significantly depressed LTP compared to controls. Animals co-injected with A $\beta$  and purified IL-1ra, however, exhibited attenuation of the A $\beta$  mediated depression of LTP up to 10min post-HFS. However, consistent with the short (15 min) half-life of IL-1ra, LTP subsequently declined to levels observed in rats treated with A $\beta$  alone. Our data draw attention to the source of experimental recombinant proteins, especially those prepared from E-coli.

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