

P054 Effects of TNF- α on NMDA inhibition of evoked dopamine release in rat striatum *in vitro*: a study using FCV
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Tumour necrosis factor (TNF- α), a pro-inflammatory cytokine, is now emerging as an important modulator of the function of the CNS. Recent reports indicate that exogenous TNF- α can potentiate striatal dopamine (DA) uptake into synaptosomes. TNF- α has also been shown to attenuate certain excitotoxic effects of NMDA. Using the technique of fast cyclic voltammetry, we have investigated the effects of NMDA and TNF- α on electrically stimulated (0.1ms; 10V) DA release in rat brain slices containing the striatum every 5 min over a 3-4 hr period. 4 pulse stimulation was also carried out at 0.5Hz at 40 min intervals. Perfusion of TNF- α (4.5ng/ml) for 2 hr had no effect on single pulse stimulated DA release or reuptake kinetics ($0.302 \pm 0.026 \mu\text{M}$ controls vs. $0.367 \pm 0.042 \mu\text{M}$ 2 hr post TNF- α ; $P=0.24$, $n=4$) or 4 pulse stimulation (0.534 ± 0.079 versus 0.486 ± 0.034 , 3rd pulse/1st pulse; $P=0.59$; $n=4$). This may indicate that D_2 autoreceptors are unaffected by TNF- α . Application of $5 \mu\text{M}$ NMDA resulted in a reduction of evoked dopamine release to 27% controls within 10 min. Perfusion of TNF- α 30 min prior to NMDA treatment did not attenuate the inhibitory effect of NMDA on dopamine release. These results may have some implications for the acute role of TNF- α in NMDA excitotoxicity. We acknowledge support from the HEA, Ireland.