

# Activated mesenchymal stem cell administration inhibits chronic alcohol drinking and suppresses relapse-like drinking in high-alcohol drinker rats

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© 2017 Society for the Study of Addiction Neuroinflammation has been reported to follow chronic ethanol intake and may perpetuate alcohol consumption. Present studies determined the effect of human mesenchymal stem cells (hMSCs), known for their anti-inflammatory action, on chronic ethanol intake and relapse-like ethanol intake in a post-deprivation condition. Rats were allowed 12-17 weeks of chronic voluntary ethanol (10% and 20% v/v) intake, after which a single dose of activated hMSCs ( $5 \times 10^5$ ) was injected into a brain lateral ventricle. Control animals were administered vehicle. After assessing the effect of hMSCs on chronic ethanol intake for 1 week, animals were deprived of ethanol for 2 weeks and thereafter an ethanol re-access of 60 min was allowed to determine relapse-like intake. A single administration of activated hMSCs inhibited chronic alcohol consumption by 70% ( $P < 0.001$ ), an effect seen within the first 24 hours of hMSCs administration, and reduced relapse-like drinking.