

NEUROSCIENCE

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~~The Addictive~~ behavior ~~of addiction~~ and ~~the firing~~ pattern ~~of firing~~ of ~~the VTA~~ dopamine (DA)-~~secreting~~ neurons ~~in the ventral tegmental area (VTA)~~ are thought to ~~be control~~ ~~controlled~~ by glutamatergic synaptic input from ~~the~~ prefrontal cortex (PFC). ~~Disturbed~~ ~~Interruption of~~ functional input from ~~the~~ PFC to ~~the~~ VTA ~~was has been~~ shown ~~as to~~ decrease the ~~addictive~~ effects of ~~the drugs on the~~ ~~addiction process~~. All ~~abusive~~ drugs ~~of abuse~~, including nicotine, activate ~~the~~ mesocorticolimbic system, ~~that which~~ plays ~~critic~~ ~~critical~~ roles in nicotine reward and reinforcement development ~~plus and engendering triggers~~ glutamatergic synaptic plasticity ~~on in~~ the DA-~~secretion~~ ~~secreting~~ neurons in ~~the~~ VTA. Nicotine ~~intake treatment, may could enhance~~ increase the  $\alpha$ -amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid (AMPA)/~~N-methyl-D-aspartate~~ (NMDA) ratio in ~~VTA-DA-~~ ~~secreting~~ neurons ~~in the VTA, and this is commonly considered~~ ~~which is thought as~~ ~~a common~~ ~~the addiction~~ mechanism of nicotine addiction. Therefore, ~~in~~ this ~~paper study~~, we investigated whether ~~or not~~ the lack of glutamate transmission from ~~the~~ PFC to ~~the~~ VTA ~~could make any change in~~ ~~can modulate~~ the effects of nicotine.

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