

# Tuning cocaine addiction

July 19 2010

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small bits of genetic material that influence gene expression - reduces the urge for a cocaine fix in mice, according to a paper published online on July 19 in the *Journal of Experimental Medicine*.

As mice become addicted to cocaine, characteristic changes in [gene expression](#) occur in the brain. To determine if this process is influenced by microRNAs, a team led by Anne Schaefer and Paul Greengard at Rockefeller University offered cocaine to mice whose neurons lack Ago2, a [protein](#) essential for the production and function of certain microRNAs.

Ago2-deficient mice consumed less cocaine. Among the 23 Ago2-dependent microRNAs whose expression increased after cocaine administration in normal mice, several regulate the expression of [genes](#) known to be involved in drug addiction.

Additional work is needed to determine which of these microRNAs control cocaine addiction in mice and whether similar pathways operate in the human brain.

**More information:** Schaefer, A., et al. 2010. *J. Exp. Med.*  
[doi:10.1084/jem.20100451](https://doi.org/10.1084/jem.20100451)

Provided by Rockefeller University

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