

Atomic-level characterization of the effects of alcohol on a major player of the central nervous system

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Scientists at the Institut Pasteur, the CNRS and the University of Texas have been able to observe at atomic-level the effects of ethanol (the alcohol present in alcoholic beverages) on central nervous system receptors.

They have identified five ethanol binding sites in a mutant of a bacterial analog of [nicotinic receptors](#), and have determined how the binding of ethanol stimulates receptor activity.

These findings can be directly extrapolated to human GABA receptors (the primary inhibitory neurotransmitters in the human brain), which are ethanol's main target in the [central nervous system](#).

This work is being published online on April 16, on the *Nature Communications* website.

It paves the way for the synthesis of ethanol antagonist compounds that could limit the [effect of alcohol](#) on the brain.

More information: Sauguet, L. et al. Structural basis for potentiation by alcohols and anesthetics in a ligand-gated ion channel, *Nature Communications*, April 16, 2013.

Provided by CNRS

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