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New leads on the causes of alcoholism

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In order to develop new medications for alcoholism, researchers need to understand how alcohol acts on the brain's reward system. A previously unknown mechanism has been shown to block the rewarding effects of alcohol on the brain, reveals a thesis from the University of Gothenburg, Sweden.

Research has shown that the glycine receptor in the brain's reward system plays a role in the development of alcoholism. This receptor normally acts as a brake on the brain's communication, and has previously been shown to be heavily implicated in the transmission of pain and in epilepsy. However, this thesis and previous results from the research group at the Department of Psychiatry and Neurochemistry have shown that the glycine receptor also plays a major role in alcoholism.

Acamprosate is found in an existing medicine for reducing relapses in alcoholics. Unfortunately, this type of medicine works for some patients only and there is a real need for new, more effective medication.

"We've chosen to clarify the role of acamprosate in the process and to find out whether this can help us understand how alcohol functions in the brain's reward system," says researcher PeiPei Chau from the Sahlgrenska Academy's Department of Psychiatry and Neurochemistry.

In animal trials with rats, the researchers have seen that acamprosate activates the glycine receptors, so inhibiting the rewarding effects of alcohol, and that it is through this mechanism that acamprosate reduces

alcohol consumption.

"We've identified a brand new mode of action in an existing medicine, and this helps us to understand better why alcohol dependency can arise in the brain," says Chau. "Our results also consolidate the group's previous results which showed that glycine receptors can play a major role in the development of new medicines to treat alcohol dependency."

Provided by University of Gothenburg

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