

# Rice responsible for Asians' alcohol flush reaction

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The mutation responsible for the alcohol flush reaction, an unpleasant response to alcohol that is relatively common in people of Asian descent, may have occurred following the domestication of rice. Researchers writing in the open access journal *BMC Evolutionary Biology* traced the history of the version of the gene responsible, finding that the ADH1B\*47His allele appeared around the same time that rice was first cultivated in southern China.

Bing Su, from the Chinese Academy of Sciences, China, worked with a team of researchers to study 38 populations (2,275 individuals) including Han Chinese, Tibetan and other ethnic populations across China. He said, "Our molecular dating suggests that the emergence of the ADH1B\*47His allele occurred about 10,000-7,000 years ago. The geographic distribution of the allele in East [Asia](#) is also consistent with the unearthed culture relic sites of rice domestication in China, suggesting that distribution of the [alcohol](#) flush mutation can be explained by the origin and expansion of the Neolithic rice culture. This is one of the few cases reported demonstrating the [genetic adaptation](#) of human populations to the dramatic changes in agriculture and diet during Neolithic times".

[Rice](#) was fermented to gain the benefits of ethanol's combined analgesic, disinfectant and profound mind-altering effects. In addition, fermentation can help to preserve and enhance the nutritional value of food and drink. Su and his colleagues believe that the flushing response may be an adaptation to counter the negative effects of alcohol

consumption. They write, "Individuals carrying ADH1B\*47His have a lower risk for alcoholism, as the unpleasant reaction they experience can influence drinking behavior and so protect them from overconsumption. The allele can also protect their organs from the damage caused by alcohol consumption".

**More information:** The ADH1B Arg47His polymorphism in East Asian populations and expansion of rice domestication in history, Yi Peng, Hong Shi, Xue-bin Qi, Chun-jie Xiao, Hua Zhong, Run-lin Z Ma and Bing Su, BMC Evolutionary Biology (in press), [www.biomedcentral.com/bmcevolbiol/](http://www.biomedcentral.com/bmcevolbiol/)

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