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The association between romantic relationship status and 5-HT1A gene in young adults

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What factors determine whether or not a young adult will fall in love? Sociological surveys and psychological studies have shown that non-genetic factors, such as socioeconomic status, external appearance, and personality attributes, are crucial components in romantic relationship formation. Here we demonstrate that genetic variants also contribute to romantic relationship formation. As love-related behaviors are associated with serotonin levels in the brain, this study investigated to what extent a polymorphism (C-1019G, rs6295) of *5-HT1A* gene is related to relationship status in 579 Chinese Han people. We found that 50.4% of individuals with the CC genotype and 39.0% with CG/GG genotype were in romantic relationship. Logistic regression analysis indicated that the C-1019G polymorphism was significantly associated with the odds of being single both before and after controlling for socioeconomic status, external appearance, religious beliefs, parenting style, and depressive symptoms. These findings provide, for the first time, direct evidence for the genetic contribution to romantic relationship formation.

5-HT1A ... *5-HT1A*

Results

$p >$ ... *Supplementary Materials* ... % ... % ... % ... $=$ ... %, $=$ ... $\chi =$ ... $p =$

Table 1 | The effect of C-1019G (rs6295) polymorphism on the distribution of romantic relationship status

	Genotype frequency			
	CC	CG	GG	Total
In a relationship	182 (50.4%)	72 (38.9%)	13 (39.4%)	267 (46.1%)
Single	179 (49.6%)	113 (61.1%)	20 (60.6%)	312 (53.9%)

Note. N = number of individuals being in a relationship (single). The percentages were computed by dividing the number of individuals in a relationship (single) with the number of individuals having a particular genotype.

Supplementary Materials … $\chi =$ … $df =$ $p =$ … $B =$ $SE =$ $df =$ $\chi^2 =$ $p =$ … $=$ … R … % … $ps >$ …

Supplementary Materials … t $=$ $p <$

Discussion

…

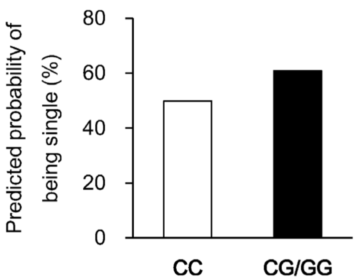

Figure 1 | Impact of the *5-HT1A* C-1019G polymorphism on the predicted probability of being single after controlling for socioeconomic status, external appearance, religious belief, parenting style, and depression. Individuals with the CG/GG genotype were more likely to be single than individuals with the CC genotype.

… *5-HT1A* … *5-HT1A* … *5-HT1A* …

Methods

… % … $=$ $\pm$ … *Supplementary Materials* …

… *Quant. Mark. Econ.* **8** …
… *Pers. Relatsh.* **17** …
… *J. Pers. Soc. Psychol.* **93** …
… *et al* … *Am. J. Psychiatry* **155** …
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et al *J. Neurosci.* **23**

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et al *Proc. Natl. Acad. Sci. U. S. A.* **105**

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Additional information

Supplementary information

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