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# Resveratrol prevents cognitive deficits induced by chronic unpredictable mild stress: Sirt1/miR-134 signalling pathway regulates CREB/BDNF expression in hippocampus in vivo and in vitro

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## Highlights

- 1.Resveratrol prevents cognitive impairment induced by chronic unpredictable mild stress.
- 2.Resveratrol treatment increases Sirt1, p-CREB, CREB, BDNF expression and decreases miR134 levels in hippocampus.
- 3.The effects of resveratrol are mediated by activating Sirt1/miR134 pathway.

## Abstract

Chronic unpredictable mild stress (CUMS) leads to neuropsychiatric disorders, such as depression, anxiety and cognitive impairment. Resveratrol is a natural polyphenol existed in polygonum cuspidatum and has been demonstrated to be a potent activator of Sirtuin 1 (Sirt1). Previous studies reported that resveratrol treatment ameliorated CUMS-induced depressive-like behavior and cognitive deficits through upregulating cAMP response element-binding protein (CREB) and brain derived neurotrophic factor (BDNF) expression. However, the upstream signalling pathway mediating CREB/BDNF expression and then exerting a protective role on cognitive function remains unclear. The present study aims to investigate the possible mechanism of resveratrol on CUMS-induced