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# Inhibition of microRNA-34a protects against propofol anesthesia-induced neurotoxicity and cognitive dysfunction via the MAPK/ERK signaling pathway

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## Highlights

- Protective effect of microRNA-34a (miR-34a) on propofol-induced neurotoxicity and cognitive dysfunction was studied.
- Propofol anesthesia had an adverse effect on cell survival due to the increased expression of apoptosis-related genes
- MicroRNA-34a could improve anesthesia-induced cognitive dysfunction

## Abstract

**Aim:** To investigate the protective effect of microRNA-34a (miR-34a) on propofol-induced neurotoxicity and cognitive dysfunction. **Methods:** After SH-SY5Y cells were treated with propofol to induce neurotoxicity, microRNA-34a mimics and inhibitors were transfected into the cells. The expression of apoptosis-related genes and the proteins were measured by quantitative

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