عنوان مقاله:

Kalirin-۷ plays the neuroprotective role in Neuro-۲A cells injured by oxygen-glucose deprivation and reperfusion through Rac۱ activation

محل انتشار:

مجله علوم پایه پزشکی ایران, دوره 21, شماره 10 (سال: 1397)

تعداد صفحات اصل مقاله: 6

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خلاصه مقاله:

Objective(s): The study explored the neuroprotective role of Kalirin-۷ (Kal-۷) in Neuro-۲A cells after oxygen-glucose deprivation and reperfusion (OGD/R) treatment.Materials and Methods: The study used an OGD/R model of mouse Neuro-۲A neuroblastoma cells in vitro. Cells were transfected with pCAGGS-Kal-۷ to up-regulating kal-۷. Then cell proliferation and apoptosis were respectively analyzed by Trypan blue exclusion method and flow cytometry. To examine the involvement of Rac۱, cells were treated with Rac۱-GTP inhibitor NSC۲۳۷۶۶ before treatment with OGD/R. Expressions of Bax, Bcl-۲, Rac۱, and down-stream targets of Rac۱ were analyzed by Western blot.Results: Kal-۷ significantly decreased OGD/R induced cell apoptosis (P<۰.۰۱), but no significant effects were observed on cell proliferation. Kal-۷ increased the expressions of apoptosis-related protein of Bcl-۲ and Rac۱, but decreased the expression of Bax in Neuro-۲A cells stimulated to OGD/R. Rac۱ was activated by Kal-۷ due to the increased levels of its down-stream targets, p-p۳۸ and p-PAK۱. NSC۲۳۷۶۶ reduced the anti-apoptotic effect of Kal-۷ as the enhanced apoptotic cell rate and increased Bax/Bcl-۲ ratio. Conclusion: These findings suggest that the protective effects of Kal-۷ against OGD/R injury in Neuro-۲A cells were dependent in a Rac۱ activation signaling.

کلمات کلیدی:

Anti-apoptosis, Kalirin-۷, Neuroprotection, OGD/R, Rac۱

لینک ثابت مقاله در پایگاه سیویلیکا: