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MiR-155 Promotes Ischemic Stroke by Inhibiting mTOR Protein Expression

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ABSTRACT The researchers aimed to determine the serum miR-155 expression in ischemic stroke (IS) patients. Serum samples were obtained to detect miR-155 expression. National Institute of Health Stroke Scale (NIHSS) was applied to assess neurological deficits. An oxygen-glucose deprivation (OGD) model of mouse microglial BV2 cells was established. Transfection of BV2 cells with miR-155-mimic/mimic-negative control (NC) or miR-155-inhibitor/inhibitor-NC was conducted. Markedly elevated miR-155 expression in serum of IS patients was detected in comparison with that in healthy individuals ($P<0.001$). NIHSS score declined progressively on 1st, 7th and 14th days after onset ($P<0.005$). The survival rate of BV2 cells after OGD treatment decreased evidently ($P<0.001$). Moreover, miR-155 expression was significantly reduced, but the protein expression of mTOR increased in OGD group ($P<0.05$). The downregulation of miR-155 facilitated mTOR mRNA and protein expressions ($P<0.005$). Elevated miR-155 is associated with the pathogenesis of IS and negatively correlated with prognosis. MiR-155 suppresses mTOR protein expression in mouse microglial BV2 cells and facilitates OGD-induced stress response.