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ITGα4 Inhibition by miR-30d as a Potential Target in Relapsing Form of MS Therapy

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ABSTRACT Multiple sclerosis (MS) is caused by demyelination of neurons. Dysfunction of α4-integrin (*ITGα4*) in lymphocyte surface is associated with neuron demyelination. Herein, inhibitory effect of hsa-miR-30d on *ITGα4* gene expression in HEK293T cells has been evaluated. Bioinformatics approaches were used to identify the miRNAs that can potentially target *ITGα4*. miR-30d was transfected into HEK293T cells using TurboFect reagent. Flow cytometry analysis was performed to evaluate *ITGα4* and miRNAs transfection. *ITGα4* expression level was surveyed in the transfected cells using Q-RT-PCR. MTT assay was carried out in the HEK293T cells. *In silico* analysis predicted that the miR-30 family targets *ITGα4*. Flow cytometry analysis showed that *ITGα4* expression in HEK293T cell surface decreased after miR-30d transfection. The expression of *ITGα4* decreased in transfected cells by miR-30d. Thus, miR-30d can down regulate *ITGα4* in the HEK293T cells. It can be considered as a silencing approach to decrease *ITGα4* expression in MS patients and cancers.