

LONG NONCODINGRNA-CCR2-5AS AND THRIL AS A POSSIBLE DIAGNOSTIC BIOMARKERS IN MULTIPLE SCLEROSIS

Thesis

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالَ

لَسْبِحَانَكَ لَا يَهْتَمُّ لَنَا
إِلَّا مَا هَلَمْتَنَا إِنَّكَ أَنْتَ
الْعَلِيمُ الْعَظِيمُ

صدق الله العظيم

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Abstract

Aims: Long non-coding RNAs (lncRNAs) were believed to play a role in the pathogenesis of many neurological disorders. We investigated the expression of two lncRNAs; lincR Ccr2-5'As and THRIL in patients with multiple sclerosis (MS) to clarify their role in MS pathogenesis and their impact on clinical course of the disease.

Methods: This case-control study was conducted on 134 subjects; 74 patients with MS fulfilling the revised McDonald criteria and 60 healthy ages- and sex-matched control. The clinical disability was evaluated using the expanded disability status scale (EDSS). lncRNAs expression was performed using Quantitative RT-PCR for the two lncRNAs; Ccr2-5'As and THRIL.

Results: LincR Ccr2-5'As was found to be significantly down-regulated in MS patients (fold change was 0.34, $p = 0.03$). The expression level was significantly low in patients with motor weakness and optic neuritis, patients with $EDSS \geq 5.5$ and treatment naive patients. THRIL was found to be significantly up-regulated in MS patients (fold change was 6.18, $p = 0.02$). THRIL expression was significantly higher in patients with relapsing remitting multiple sclerosis ($p=0.04$), patients who presented initially with motor weakness, patients with $EDSS < 5$ and patients who are receiving interferon.

Conclusion: Our results demonstrated the down regulation of lncRNA Ccr2-5'As and the up-regulation of Lnc-RNA THRIL in MS. This differential expression of both lncRNAs may have an important role in MS pathogenesis. Further studies are required to clarify the molecular pathways through which these lncRNAs may influence MS pathogenesis and clinical presentation.

Key words;

(Multiple sclerosis, lncRNA Ccr2-5'As, Lnc-RNA THRIL.)

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