

## Klotho protein and pathogenesis of MS

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**Backgrounds:** Recent investigations support that an anti-aging protein, namely Klotho, protects neurons against the oxidative stress and demyelination. There are two forms of Klotho including transmembrane and secretory which are mainly produced in the kidneys and brain. Accordingly, we aimed to evaluate the concentration of Klotho and total anti-oxidant capacity (TAC) in the serum and cerebrospinal fluid (CSF) of patients with relapsing-remitting MS (RRMS).

**Methods:** Twenty two patients with RRMS along with 22 individuals without history of inflammatory and demyelinating diseases were enrolled. After collection of serum and CSF samples, serum and CSF Klotho concentrations were measured by ELISA method. The TAC was quantified by ferric-reducing anti-oxidant power assay (FRAP).

**Results:** CSF values of Klotho were significantly lower in patients as compared to controls (P 0.05). CSF concentration of Klotho showed a significant negative correlation with expanded disability status scale (EDSS) of the patients (r = - 0.568, P 0.05).

**Conclusion:** To our knowledge, this is the first report demonstrating the status of serum and CSF Klotho concentrations in MS patients. In Conclusion, Klotho may play an important role in the pathogenesis of MS, at least in part, through the regulation of redox system.

**Keywords :** Klotho, Multiple sclerosis, Oxidative stress, FRAP assay.