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Prostaglandin D Synthase Concentration in Cerebrospinal Fluid and Serum of Patients with Neurological Disorders

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Prostaglandin D synthase (PGD synthase) or β-trace protein is a major constituent of human cerebrospinal fluid (CSF) representing ~3% of the total CSF protein. We have recently developed a highly specific immunofluorometric assay for PGD synthase, which enabled us to quantify the presence of PGD synthase in fluids and tissues not associated with the CNS. In this report we provide quantitative data of the presence of PGD synthase in CSF and serum from 302 subjects with various neurological diseases and symptoms. PGD synthase levels in CSF are approximately 35-fold higher than those of serum, with a median concentration of 11299 μg/L. A statistically significant association of PGD synthase concentration in CSF was observed with both patient age and gender. There was no correlation between PGD synthase concentration in serum and patient age or gender. To evaluate the clinical utility of PGD synthase in diagnosing neurological diseases, the distribution pattern of PGD synthase in CSF and serum was examined for each neuropathology of 268 patients whose diagnosis was known. No statistical difference was observed between PGD synthase concentration in the CSF (129 cases) or the serum (94 cases) of multiple sclerosis afflicted subjects in comparison to all other patients studied. The distribution pattern was also not different for PGD synthase levels in CSF of patients with HIV/AIDS related neuropathies, viral meningitis and

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