

## Concentration of soluble form of hepatocyte growth factor receptor in cerebrospinal fluid and serum of patients with bacterial and viral meningitis

### Khoshdel Rad N (BSc)

Master student, Department of Biology,  
Faculty of Sciences, University of Guilan,  
Rasht, Iran.

### Mashayekhi F (PhD)

Associate Professor Department of Biology,  
Faculty of Sciences, University of Guilan,  
Rasht, Iran.

### Mirzajani E (PhD)

Assistant Professor of Cellular and  
Molecular Research Center, Faculty of  
Medicine, Guilan University of Medical  
Sciences, Rasht, Iran.

Corresponding Author: Mashayekhi F

E-mail: [mashayekhi@guilan.ac.ir](mailto:mashayekhi@guilan.ac.ir)

### Abstract

**Background and objectives:** C-Met is a proto-oncogene that encodes a protein known as hepatocyte growth factor receptor (HGFR). The HGF receptor possesses tyrosine -kinase activity and it is essential for embryonic development, wound healing and cancer. Many proteins are proteolytically released from the surface by a process known as ectodomain shedding. Shedding occurs under normal physiologic conditions and can be increased in certain pathologies. C-Met can be seen among many receptors for which ectodomain shedding has been shown. The aim of this study was to determine the concentration of soluble c-Met in the cerebrospinal fluid (CSF) and serum samples of patients with viral and bacterial meningitis.

**Material and Methods:** in this study, 75 CSF and serum samples of patients with bacterial meningitis, 71 with viral meningitis and 82 normal controls were investigated. The soluble c-Met concentration was determined by enzyme linked immunosorbent assay (ELISA).

**Result:** the amount of soluble c-met in CSF of patients with bacterial meningitis ( $83.91 \pm 5.50$ ), viral meningitis ( $80.41 \pm 4.71$ ) and control group ( $22.66 \pm 3.39$ ) are compared with that in serum of patients with bacterial meningitis ( $561.58 \pm 25.87$ ), viral meningitis ( $550.50 \pm 34.34$ ) and control group ( $256.25 \pm 18.55$ ). There is significant increase in the CSF and serum's soluble c-Met expression in the patients with meningitis, in comparison with control group.

**Conclusion:** The data presented here indicate that soluble c-Met is a constant component of human serum and CSF, but it can not be used for differentiating bacterial meningitis from viral meningitis.

**Key words:** Soluble c-Met, concentration, cerebrospinal fluid, serum, meningitis