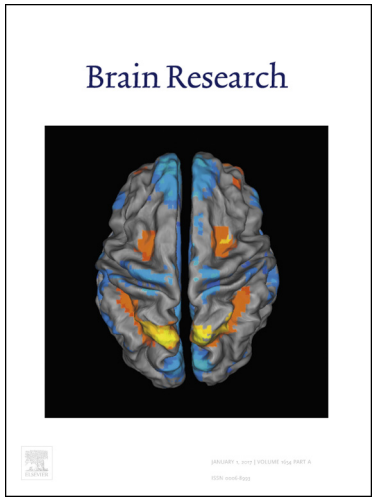

Research report

Serum concentrations of the axonal injury marker neurofilament light protein are not influenced by blood-brain barrier permeability

Marie Kalm, Martina Boström, Åsa Sandelius, Yohanna Eriksson, C. Joakim Ek, Kaj Blennow, Thomas Björk-Eriksson, Henrik Zetterberg

PII: S0006-8993(17)30207-X
DOI: http://dx.doi.org/10.1016/j.brainres.2017.05.011
Reference: BRES 45360

To appear in: *Brain Research*

Received Date: 31 January 2017
Revised Date: 31 March 2017
Accepted Date: 10 May 2017

Please cite this article as: M. Kalm, M. Boström, a. Sandelius, Y. Eriksson, C. Joakim Ek, K. Blennow, T. Björk-Eriksson, H. Zetterberg, Serum concentrations of the axonal injury marker neurofilament light protein are not influenced by blood-brain barrier permeability, *Brain Research* (2017), doi: http://dx.doi.org/10.1016/j.brainres.2017.05.011

Serum concentrations of the axonal injury marker neurofilament light protein are not influenced by blood-brain barrier permeability

Authors: *Marie Kalm[a]*, Martina Boström[b]*, Åsa Sandelius[c], Yohanna Eriksson[a], C. Joakim Ek[d], Kaj Blennow[c,e], Thomas Björk-Eriksson[b] and Henrik Zetterberg[c,e,f]*

**equal contribution*

[a]Department of Pharmacology, Institute of Neuroscience and Physiology, [b]Department of Oncology, Institute of Clinical Sciences, [c]Department of Psychiatry and Neurochemistry, Institute of Neuroscience and Physiology, [d]Department of Physiology, Institute of Neuroscience and Physiology, Sahlgrenska Academy at the University of Gothenburg, Gothenburg, Sweden, [e]Clinical Neurochemistry Laboratory, Sahlgrenska University Hospital, Mölndal, Sweden, and the [f]Department of Molecular Neuroscience, UCL Institute of Neurology, Queen Square, London, United Kingdom

Corresponding author:
Marie Kalm, PhD, The Sahlgrenska Academy at the University of Gothenburg, Institute of Neuroscience and Physiology, Department of Pharmacology, S-405 30 Gothenburg, Sweden. Tel: (+46) 31-786 3425. E-mail: marie.kalm@neuro.gu.se

Highlights

- There is an acute increase of serum neurofilament light protein (NFL) following both cranial irradiation and anesthesia in mice.
- The levels of serum NFL do not correlate with an acute opening of the blood-brain barrier in a mouse model of cranial irradiation.
- Human data show that the levels of NFL in serum mirror the levels in cerebrospinal fluid independently of the degree of blood-brain barrier integrity.