Perispinal etanercept (PSE) for treatment of Traumatic Brain Injury

SCIENTIFIC BACKGROUND

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BACKGROUND INFORMATION

Brain injury from stroke and traumatic brain injury (TBI) may result in a persistent neuroinflammatory response in the injury penumbra[1, 2]. This response may include microglial activation and excess levels of TNF[2, 3]. Excess levels of TNF may impair brain function[4, 5]. Previous experimental data suggest that etanercept, a selective TNF inhibitor, has the ability to ameliorate microglial activation and modulate the adverse synaptic effects of excess TNF[1, 6]. Perispinal administration may enhance etanercept delivery across the blood-cerebrospinal fluid barrier[7-9].

Excess TNF contributes to chronic neurological, neuropsychiatric and clinical impairment after stroke and TBI[10-12]. Perispinal administration of etanercept produces clinical improvement in patients with chronic neurological dysfunction following stroke and TBI. The therapeutic window extends beyond a decade after stroke and TBI[10, 12].
References