
Selective transport of blood-borne interleukin-1 alpha into the posterior division of the septum of the mouse brain.

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Film autoradiography was used to demonstrate the transport and sites of accumulation of blood-borne radioiodinated interleukin-1 alpha (IL-1 alpha) and other cytokines into the brain after intravenous administration. [¹²⁵I]IL-1 alpha, [¹²⁵I]IL-1 beta, [¹²⁵I]interleukin-1 receptor antagonist (IL-1ra), and [¹²⁵I]tumor necrosis factor-alpha (TNF alpha) labeled the choroid plexus and the capillary network 30 min after injection into the blood, suggesting that these areas may serve as sites of blood-to-brain transport. [¹²⁵I]IL-1alpha, but not [¹²⁵I]IL-1beta, [¹²⁵I]IL-1ra, [¹²⁵I]TNF alpha, or [¹²⁵I]interleukin-2 (IL-2), was also found localized to the caudal region of the septal nuclei. Only unlabeled IL-1 alpha was able to inhibit this accumulation. These findings provide further evidence for the passage of select cytokines across the blood-brain barrier (BBB) and are the first to identify a target site within the central nervous system (CNS) for a transported cytokine.