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Immune Response Following Traumatic Brain Injury

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Traumatic brain injury (TBI) has emerged as a leading area of concern for the healthcare system. A single blow to the head can manifest as a simple self-resolving headache, to long-term cognitive and motor disabilities, or in some severe cases, death. Lacking appropriate methods of effective diagnosis and treatment, it is imperative to expand our understanding of the underlying pathophysiologies of TBIs. In our research, we study the activity of three types of cells that participate in the neuroinflammatory response following brain injury. This includes resident microglia, astrocytes, and infiltrating hematogenous myeloid cells. Our aim is to understand the change in cellular activity over time post-injury. With this information, an effective novel antibody therapeutic will be developed in hopes to treat acute TBI patients.