# treatment of Traumatic Brain Injury

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## Technology description

Treatment of traumatic brain injury is limited to medications to limit secondary damage to the brain, surgery to relieve pressure on the brain, and rehabilitation. The OHSU discovery uses a proprietary construct comprised of the human leukocyte antigen (HLA)-DRα1 domain linked covalently to mouse (m)MOG-35-55 peptide (DRα1-MOG-35-55 construct) to reduce CNS inflammation and tissue injury in animal models of multiple sclerosis and ischemic stroke. Daily injections of DRα1-MOG-35-55 significantly reduced numbers of infiltrating CD74+ and CD86+ macrophages and increased numbers of CD206+ microglia in the brain concomitant with smaller lesion sizes and improvement in neurodeficits. Conversely, DRα1-MOG-35-55 treatment of TBI increased numbers of circulating CD11b+ monocytes and their expression of CD74 but had no detectable effect on cell numbers or marker expression in the spleen. These results demonstrate that DRα1-MOG-35-55 therapy can reduce CNS inflammation and significantly improve histological and clinical outcomes after TBI. Future studies will further examine the potential of DRα1-MOG-35-55 for treatment of TBI.

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