

TREATMENT FOR CHRONIC MIGRAINES

[Cao, Yu-Qing](#), [Cloud, Megan](#), [Hu, Rong](#), [Zhang, Jintao](#), [Zhang, Zhiyu](#)
[Richards, Jennifer](#)

T-018942

Technology Description

Researchers at Washington University in St. Louis (WUSTL) have developed two methods for treating chronic migraine and post-traumatic headache. Chronic migraine and post-traumatic headache are highly prevalent and debilitating with limited treatment options. Further, for many patients the existing therapeutics are not sufficient as they do not respond to the treatment or cannot tolerate the side effects. Thus, there is a great need for new therapeutics that are safer and more effective. To help meet this need the inventors have identified two methods that can be used to treat chronic migraine and post-traumatic headache. The first uses daily, low-dose IL-2 to treat migraines (WUSTL technology T-018942). Here, IL-2 modulates the immune system to increase the number of regulatory T (Treg) cells to restore immune homeostasis and thus treat the migraine. The second method uses adoptive transfer of Treg cells to treat the migraines (WUSTL technology T-019087). These technologies offer promising, much-needed new therapeutic methods to treat chronic migraine and post-traumatic headache.

Stage of Research

In validation studies using mouse models of chronic migraine, administration of low dose IL-2 prevented development of nitroglycerin-induced persistent sensitization and reversed the associated facial skin hypersensitivity.

In validation studies using mouse models of mild traumatic brain injury (mTBI), administration of low dose IL-2 prevented and reversed acute and chronic post-traumatic-related behavioral sensitization.

Publications

Zhang J, Czerpaniak K, Huang L, et al. [Low-dose interleukin-2 reverses behavioral sensitization in multiple mouse models of headache disorders](#). *Pain*. 2020;161(6):1381-1398.

Applications

- Chronic migraine and post-traumatic headache treatment

Key Advantages

- New therapeutic options with different mechanisms of action than existing therapeutics
- Non-addictive
- Doesn't cause overuse headaches

Patents

- Patent application has been filed

Related Web Links

- [Dr. Cao profile](#)