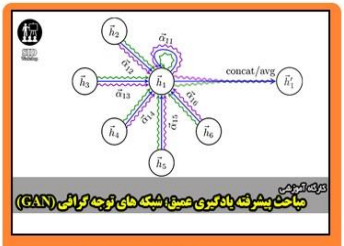
SID

فیلم های آموزشی | عضویت در خبرنامه | بلاگ مرکز اطلاعات علمی | کارگاه های آموزشی | سرویس ترجمه تخصصی | سرویس های ویژه

کارگاه های آموزشی مرکز اطلاعات علمی جهاد دانشگاهی

کارگاه آنلاین آشنایی با پایگاه های اطلاعات علمی
بین المللی و
ترفند های جستجو



مباحث پیشرفته یادگیری عمیق؛
شبکه های توجه گرافی
(Graph Attention Networks)

کارگاه آنلاین مقاله نویسی IEEE و ISI
ویژه فنی و مهندسی

Archive of SID

P-23

Hespiridin alleviates Experimental autoimmune encephalomyelitis in C57BL/6 mice via regulating Treg and T helper 2 polarizations

Mohammad Bagher Mahmoudi[1], Dariush Haghmorad[1], Abbas Ali Amini[1], Ehsan Farashahi Yazd[2], Ensieh Shahvazian[3], Mahmoud Mahmoudi[1].

1. Immunology Research Center, Bouali institute, Mashhad University of Medical Sciences, Mashhad, Iran.
2. Department of Genetics, Shahid Sadoughi University of Medical Sciences, Yazd, Iran.
3. Department of Science, Ferdowsi University, Mashhad, Iran.

Abstract

Introduction: Multiple sclerosis (MS) is the most abundant central nervous system inflammatory disease, which is due to the reaction of auto reactive T cells with own myelin proteins, leading to physical disorder and paralysis among people suffering from disease. Experimental autoimmune encephalomyelitis (EAE) is used as an animal model of this disease, causing demyelination and inflammatory disease in CNS of the animal. Hesperidin acts as an anti oxidant via inhibitory effect on HMG-CoA reductase and Cyclo-oxygenase and through increasing the expression of apoptotic genes. We studied effects of Hesperidin on immune responses in EAE mice.

Materials and Methods: 24 C57/BL6 female mice, aging 8-10 weeks and weighting 20 gr were used in this project. The mice were divided into 3 groups as follows: 1. Normal group 2. Control group 3.Treatment group. EAE was induced in group 2 and 3. A mixture of Myelin Oligodedrocyte Glycoprotein peptide (MOG) and freund's complete adjuvant (FCA) were injected subcutaneously; an intrapertoneal injection of pertusis toxin were followed, after 48 hours the injection of pertussis toxin were repeated to complete EAE induction. The treatment group was treated with 200 mg/kg Hesperidin using IP injection every day. The disease was scored and the mice were examined for the disease symptoms and their weight was recorded till the twenty first day, on day 21 they were anesthetized and then sacrificed. Histological study was performed by staining the brain sections using hematoxilin eosin. FoxP3, CD4, IL-4, IL-10, IL17, IL23 and IFN-γ expression were analyzed in splencytes using real-time PCR. The validation of their protein production was measured using flow cytometery, and the secretion of IL-4, IL-10, IL-17, IL-23 and IFN-γ were validated using ELIZA of the cultured splenocyte's supernatant.

Results: Our results showed mean weight on day21 had an increase ($p<0.05$) in group 3 mice (19.01±1.63g) compared to mice in group 2 (17.67±0.51g). Clinical scores showed a decrease ($p<0.01$) in group 3 (1.86±0.9) in comparison to group 2 (3.71±0.5). Histological studies revealed significant lower lymphocytic infiltration and demyelination in group3 compared to group2. Splenocytes proliferation showed reduction in group3 in comparison to group 2 ($p<0.1$). Cytokines and transcription factors related to Th2 and Treg showed significant increase, while cytokines related to th1 showed significant decrease in all levels. On the other hand cytokines of Th17 did not show significant change.

Conclusion: Our results indicate that Hesperidin can alleviate Experimental autoimmune Encephalomyelitis, which acts at least in part through driving the polarization of Treg, and also triggering a shift from Th1 to Th2 subsets. These findings introduce Hesperidin as a potential compound for future studies on Multiple Sclerosis and its animal models.

Key words: *EAE, Hespiridinr, Th1, TH2, Th17, Treg.*

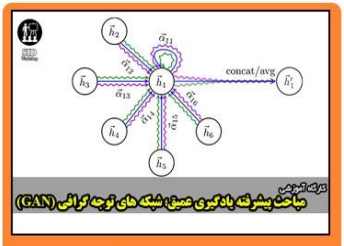
www.SID.ir

SID

فیلم های آموزشی | عضویت در خبرنامه | بلاگ مرکز اطلاعات علمی | کارگاه های آموزشی | سرویس ترجمه تخصصی | سرویس های ویژه

کارگاه های آموزشی مرکز اطلاعات علمی جهاد دانشگاهی

کارگاه آنلاین آشنایی با پایگاه های اطلاعات علمی
بین المللی و
ترفند های جستجو



مباحث پیشرفته یادگیری عمیق؛
شبکه های توجه گرافی
(Graph Attention Networks)

کارگاه آنلاین مقاله نویسی IEEE و ISI
ویژه فنی و مهندسی