Grape seeds extract attenuates pathological process of Experimental Autoimmune Encephalomyelitis Mice

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**RESULTS**

Figure 1. The Mean clinical score of GSE. GSE delays onset, and ameliorates severity of EAE. The grooming of normal saline was set up as control (EAE control, n=10) in a similar manner. *p<0.05.

Figure 2. GSE (n=8) inhibits inflammation and improves myelination in spinal cords. Left) Inflammation stained with H&E. Right) Demyelination stained with Luxol Fast Blue. Quantitative results are analyzed for 6 mice in each group and are representative of 3 experiments with similar results. *p<0.05, **p<0.01.

Figure 3. GSE inhibits inflammatory molecules. The levels of IL-1β, TNF-α and IL-6 (A)secreted by macrophage, and IL-17 (B) secreted by T-cells were measured by ELISA kits. **p<0.01, ***p<0.001.

Figure 4. GSE inhibits chemotactic factor of spinal cords and chemotactic receptor of spleen cells. The levels of MIP-1a and MCP-1 were measured by Real-time PCR(A). The expression of CCR2, CCR5 and CCR6 were measured by Western Blot. *p<0.05, **p<0.01, ***p<0.001.

Figure 5. GSE improves the function of BBB by inhibiting the expression of ICAM-1 and VCAM-1, and increasing the level of Occludin and ZO-1. *p<0.05, **p<0.01, ***p<0.001.

**CONCLUSIONS**

In alignment with known anti-inflammatory and neuroprotection effects of GSE, here, we demonstrated GSE supplementation attenuated inflammatory responses and BBB disruption in EAE mice. Therefore, dietary GSE supplementation might be an alternative approach for preventive or therapeutic treatments of MS.

**REFERENCES**


