Synopsis of Original Research Paper

Anti-inflammatory effects of Procyanidin B2 on dermatitis in mouse model

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Psoriasis is a chronic, immune-mediated inflammatory skin disease characterized by cutaneous parakeratosis and hyperproliferation of epidermal cells. Psoriasis is a disease caused by infiltration of immune cells into the epidermis and dermis and increased production of inflammatory cytokines. Imiquimod is a low-molecular-weight compound with immunostimulatory activity, and is known to be able to induce psoriasis by applying a cream containing imiquimod to the skin of mice. In this study, we established an imiquimod-induced psoriasis model mouse and verified the preventive effect of EGCG and Procyanidin B2 gallate (PCB2DG) on psoriasis.

When the mouse back skin was treated with imiquimod cream, psoriasis symptom including erythema, thickening and scales were observed on the mouse back skin. These psoriasis symptoms were reduced by administration of EGCG. In addition, histological analysis of the skin showed that hypertrophy of the spinous layer of the epidermis due to the development of psoriasis was reduced by the administration of EGCG. Mouse spleen cells were increased by imiquimod treatment, but decreased by administration of EGCG. Furthermore, the administration of PCB2DG also reduced the symptoms of psoriasis.

These results suggested that we could establish an imiquimod-induced psoriasis model mouse and showed that administration of EGCG or PCB2DG reduced the symptoms of psoriasis. In the future, we would like to evaluate the psoriasis prevention effect of other food-derived polyphenols using imiquimod-induced psoriasis model mice.