

Prunus mume mixture mediates suppression of mouse colon inflammation induced by dextran sodium sulfate

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Objectives

This study was conducted to investigate the anti-inflammatory effects of *Prunus mume* mixture (PM) treatment on colitis induced in mice by dextran sodium sulfate (DSS) treatment. A total of 25 male BALB/c mice (average weight 20.7±1.6g) were divided into 5 treatment groups and fed a commercial diet (A), commercial diet+induced colitis by DSS (B), PM administration (C), PM administration+induced colitis by DSS (D) and sulfasalazine+induced colitis by DSS (E). We found that PM treatment (C and D) decreased the expression of TNF- α and COX-2 compared to the DSS-induced colitis group (B). The expression of IL-4 and STAT6 was decreased in group D compared to the colitis group (B). The serum IgE levels decreased in the PM treatment groups (C and D) compared to the non-PM treatment groups (A and B) although there was no significant difference between the PM treatment groups. It is notable that after therapeutic application of the PM extract same alleviated DSS-induced colitis in mice.

Materials and Methods

○ **Materials**

Sulfasalazine, dextran sulfate sodium (DSS) was purchased from Sigma (St. Louis, MO, USA). Monoclonal antibodies and cytokines were purchased from ID Labs Inc. (Ontario, Canada). IgA related antibodies were purchased from Zymed Laboratories, Inc. (San Francisco, CA, USA). IgE related antibodies were purchased from Biosource International (Camarillo, CA, USA). Dulbecco's Modified Eagle's medium (DMEM), and 3-(4,5 dimethylthiazol-2-yl)-2,5-diphenyltetrazolium (MTT) were obtained from Wako Chemical Co. (Tokyo, Japan). Fetal bovine serum (FBS) and antibiotics were purchased from Gibco-BRL (Gaithersburg, MD, USA).

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○ **Methods**

1. Enzyme-linked immunosorbent assay of mice antibodies.
2. Flow cytometry analysis
3. Histological preparation
4. Western blot analysis

Results

Table 1A. Food intake and body weight of mice fed PM mixture for 15 days.

	initial weight(g)	body Final weight(g)	Food intake(g)
A	21.80±0.84	24.20±0.84	17.40±1.52
B	22.20±0.84	25.60±1.14	19.20±1.64
C	21.67±1.21	20.00±0.98 ^c	11.00±1.10 ^a
D	21.40±0.55	24.40±1.14 ^a	15.50±2.06 ^b
E	21.80±0.84	23.40±1.14 ^b	14.60±1.82 ^b

A: Control B: PM C: DSS D: DSS+PM E: DSS+Sulfasalazine

Values are the means±SD (n=7). Those with different superscript letters are significantly at p<0.05.

Table 1B. Effect of PM mixture on organs weight.

	spleen(g)	liver(g)
A	0.0768±0.0036	0.9292±0.1069
B	0.0856±0.0035	0.9340±0.0804
C	0.1005±0.0141	0.9932±0.0814
D	0.0830±0.0048 ^a	0.9484±0.1042
E	0.0870±0.0050	0.9660±0.0700

A: Control B: PM C: DSS D: DSS+PM E: DSS+Sulfasalazine

Values are the means±SD (n=7). Those with different superscript letters are significantly at p<0.05.