2010 International Conference

27 Oct. 2010 9:00~18:30
Audiovisual Room, 1st Floor,
Central Library, Kyung hee University

HOST: The Korean Society Of Oriental Pathology,
Cancer Preventive Material Development Research Center

Immunoativation and Rdaioprotection Effect by *Enterococcus Faecalis* 2001

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Abstract

Radiation protection from immune-recovery by oral administrations consecutively of *Enterococcus Faecalis* 2001, 200 mg/kg b.w., once a day, before whole-body x-rays irradiation was confirmed by tests with C3H mice, meanwhile, its radioprotective effects compared to immunological enhancement. The survival of irradiated mice protected by β-D-glucan was significantly increased and statistically higher than that of mice pre-treated with oral administration. After administration of β-D-glucan, enhanced CD4 cells, CD8 and CD16 cells in mice were found and lymphocytes numbers was higher than in irradiated control group. Stimulated recovery of leukocyte, lymphocytes, and NK cells counts were observed in mice pre-treated with EF 2001. This effect of β-D-glucan may have some therapeutic implications for radiation-induced injuries. We can analyze a result of this study than this thing as follows. We think that CD 4 and CD 8 did immunological enhancement of β-D-glucan than helper T cells and suppressor T cell activation from their having been a rise. In addition, we think that indicating the activation of cell-mediated immune responses.

Immune Activity and radioprotection effect for *Enterococcus Faecalis* (EF 2001)

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Material & Methods1

- Anti-cancer effects

➲ Seven-weeks-old male ICR (Crj) mice

- Cancer cells: sarcoma 180 (2 X 10^6)
- EF 2001 5mg/kg of heat-killed EF2001 (EF2001) were injected interpretational(endoceliac) each for 2 weeks every other day

➲ Statistical methods: t- test

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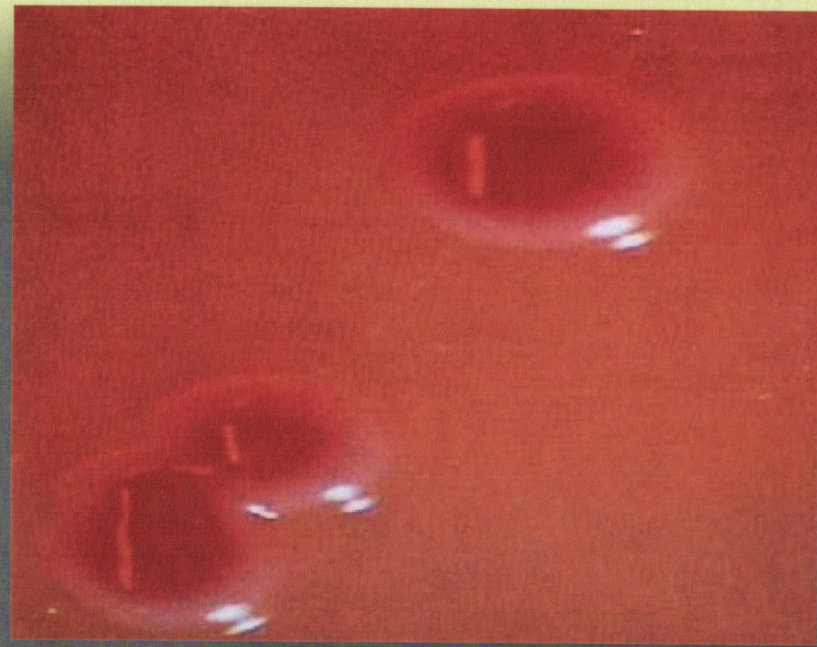

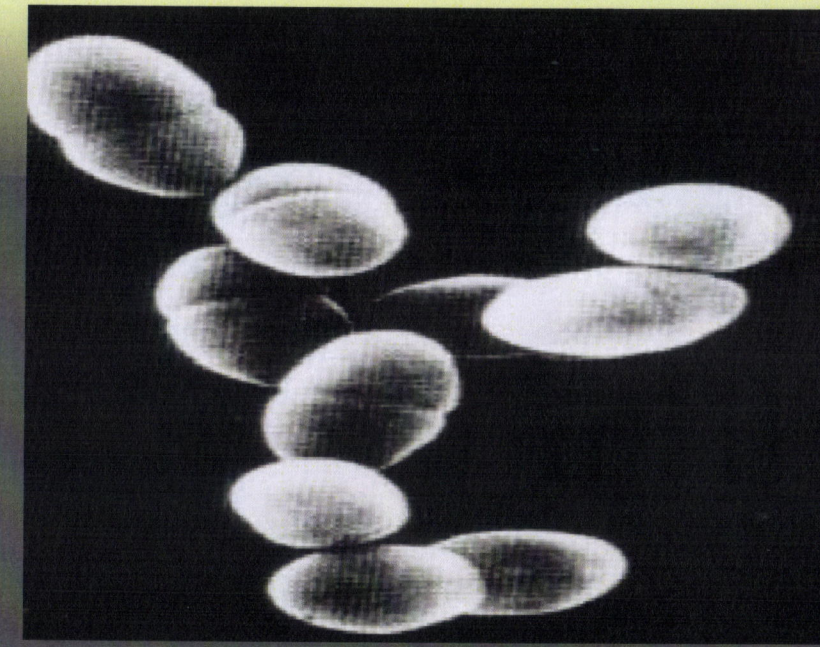

Enterococcus Faecalis under microscope (left) × 20, (right) × 12900

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Materials and Methods2

1.Radiation protection effects

Seven-weeks-old male C3H mice

12mg/Kg 24mg/Kg of heat-killed EF2001 (EF2001) were injected interpretational each for 2 weeks every other day

⬇

8Gy of whole body irradiation (Philips co. 200kV)

⬇

Change of body weight Survival after irradiation

⬇

Sections of the large and small intestines with a microscope

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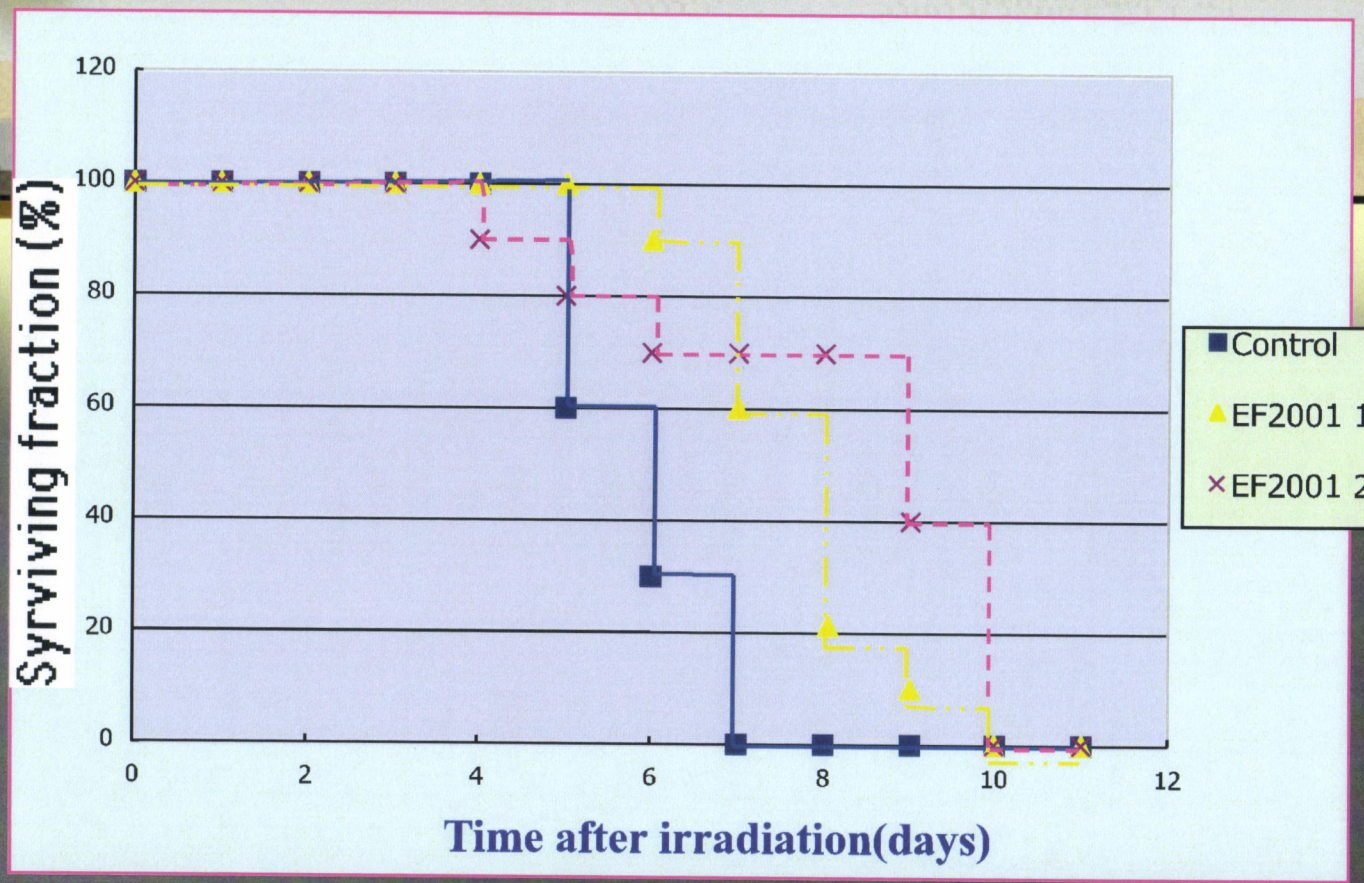

Survival after irradiation

Surviving fraction was increased after injection of EF2001.

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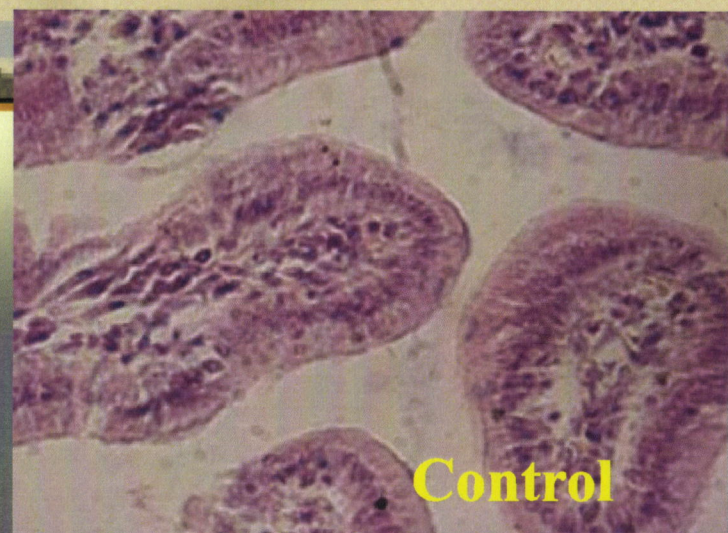
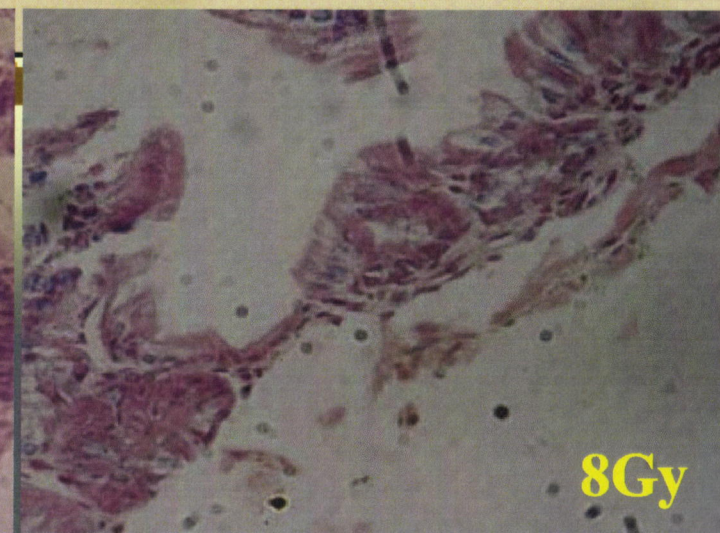
Small intestines with a microscope





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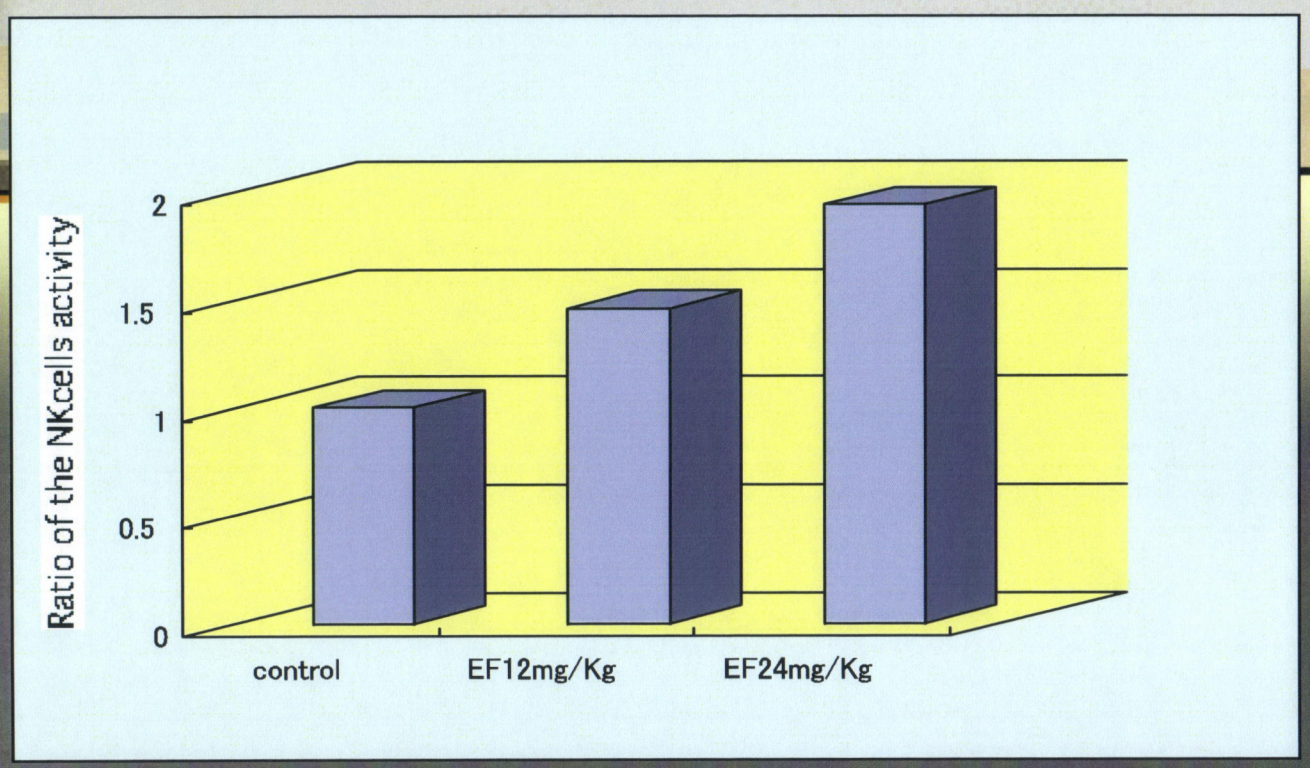

NK cells activity

Activities of NK cells are enhanced 1.46 and 1.94 times in EF 12mg and EF 24mg groups respectively.

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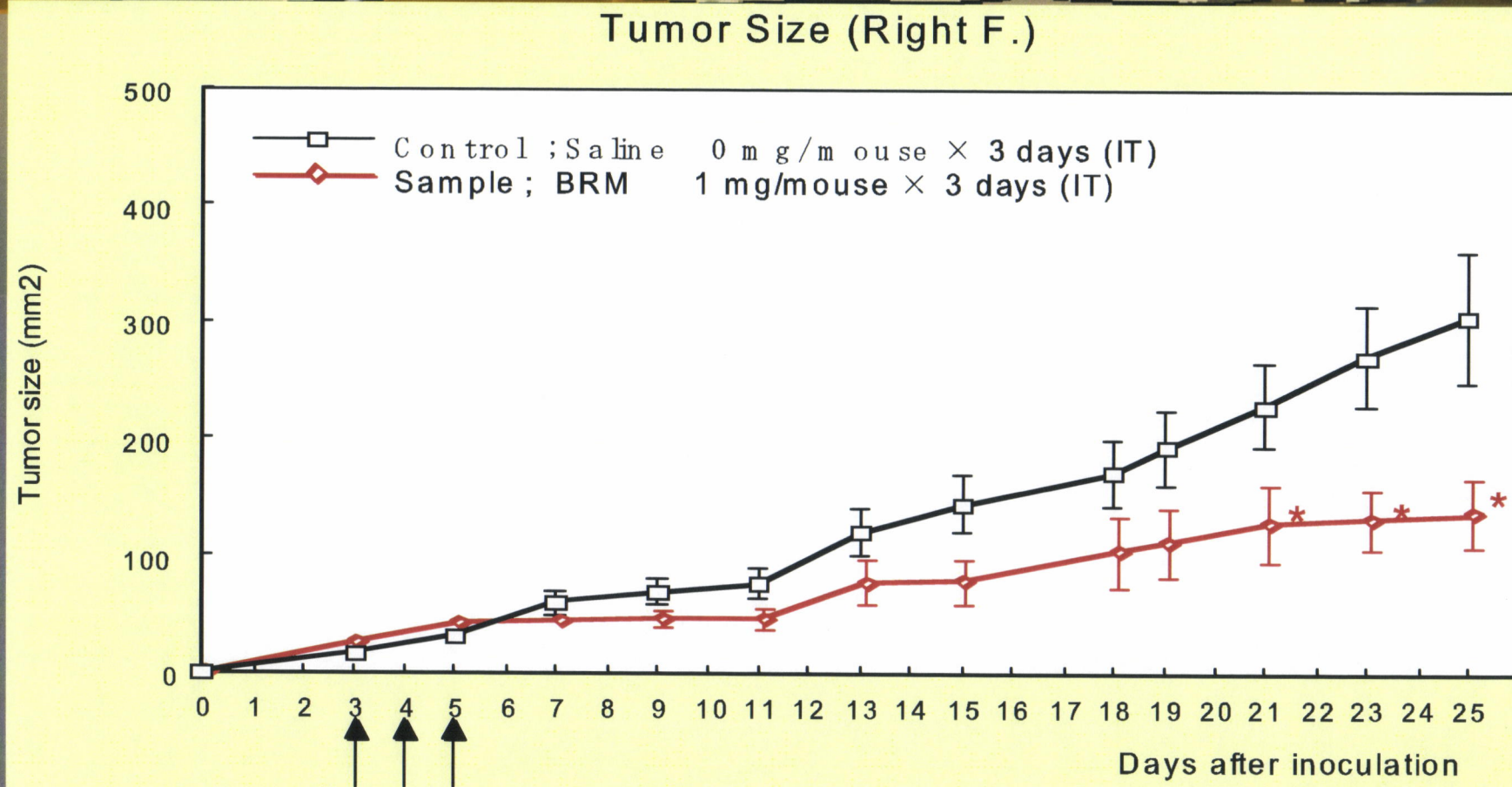

Anti-tumor effect of BRM on Meth A fibrosarcoma (solid type) in BALB/c mice

* $p<0.05$ vs Control

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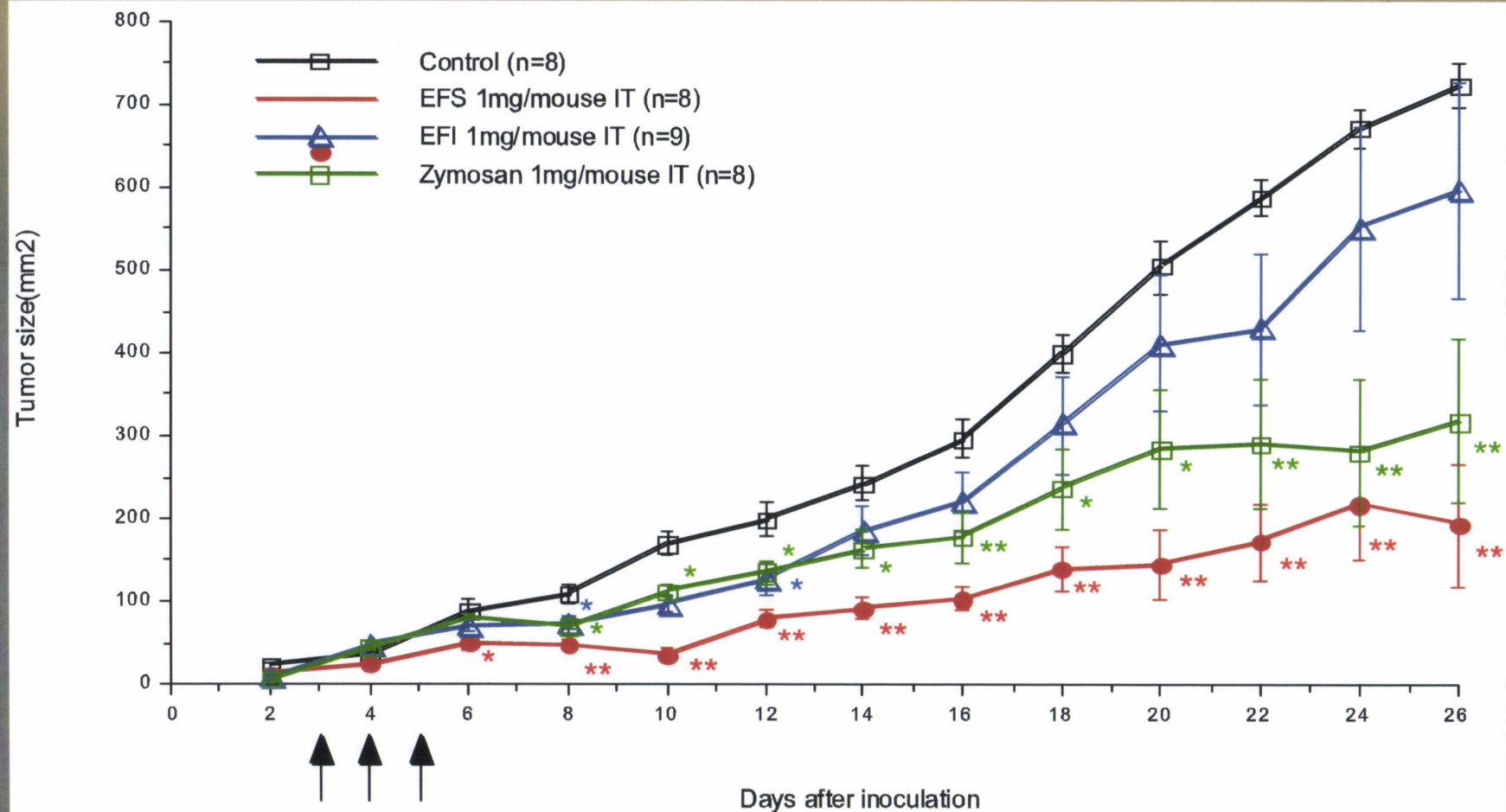

Anti-tumor effect of EF-2001 on S-180 in ICR mice

**P<0.01 *P<0.05 vs Control group

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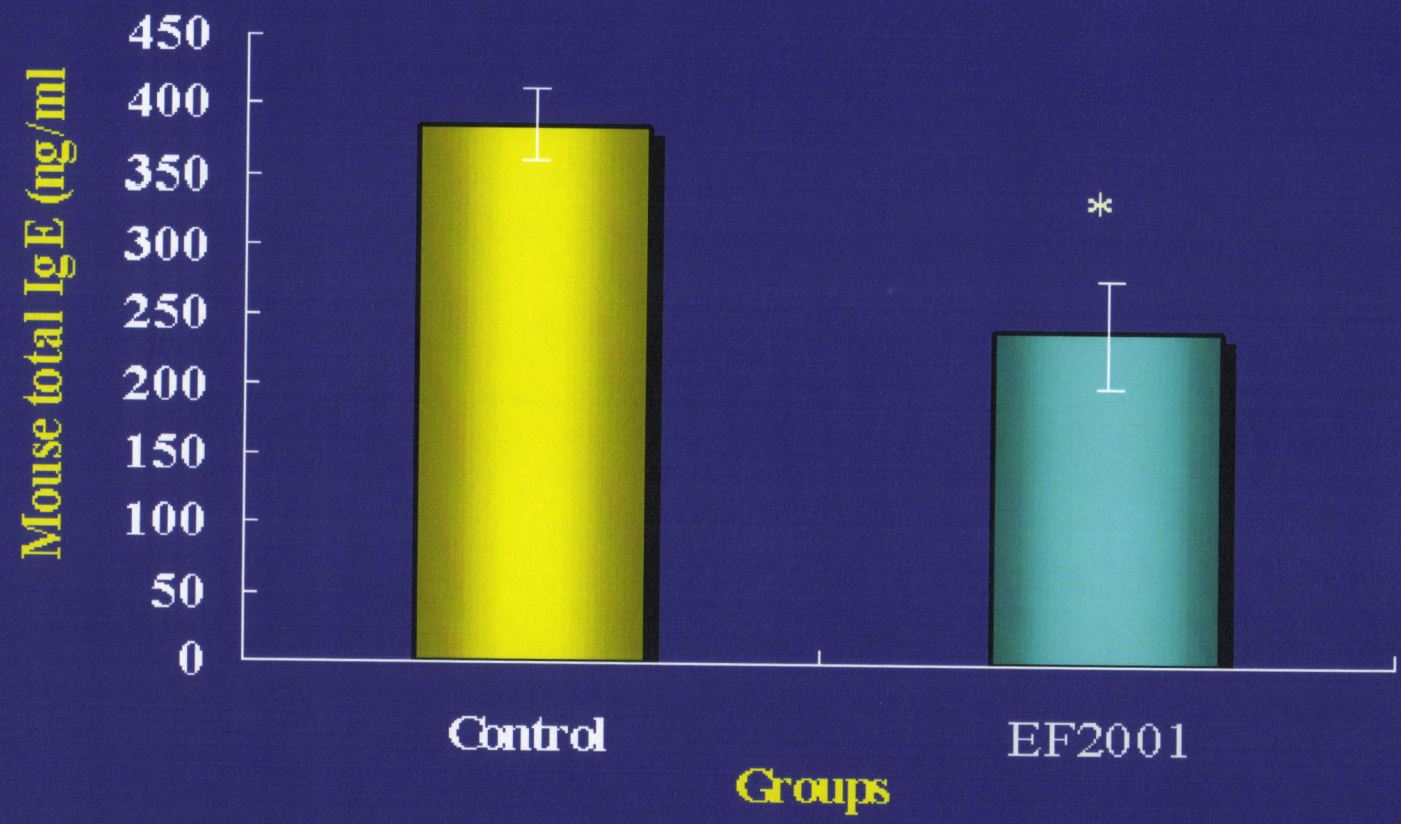

BLB/C mice of IgE in the blood. Each histogram represents the mean value ±SE for 10 mice IgE (M). Significantly different *$p<0.05$ Control vs. EF 2001.

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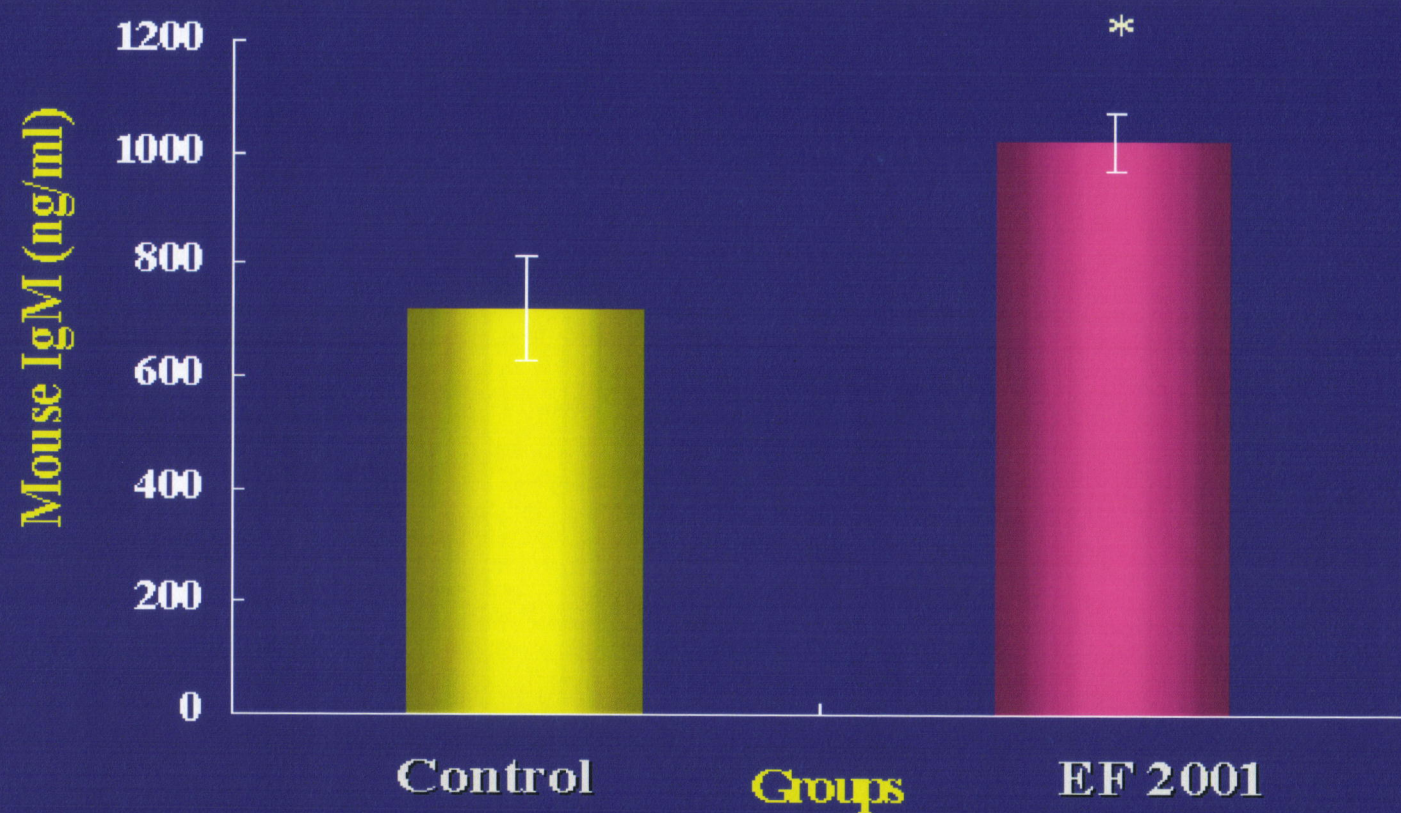

C3H mice of IgM in the blood. Each histogram represents the mean value ±SE for 10 mice IgM (M) Significantly different *p<0.05 Control vs. EF 2001.

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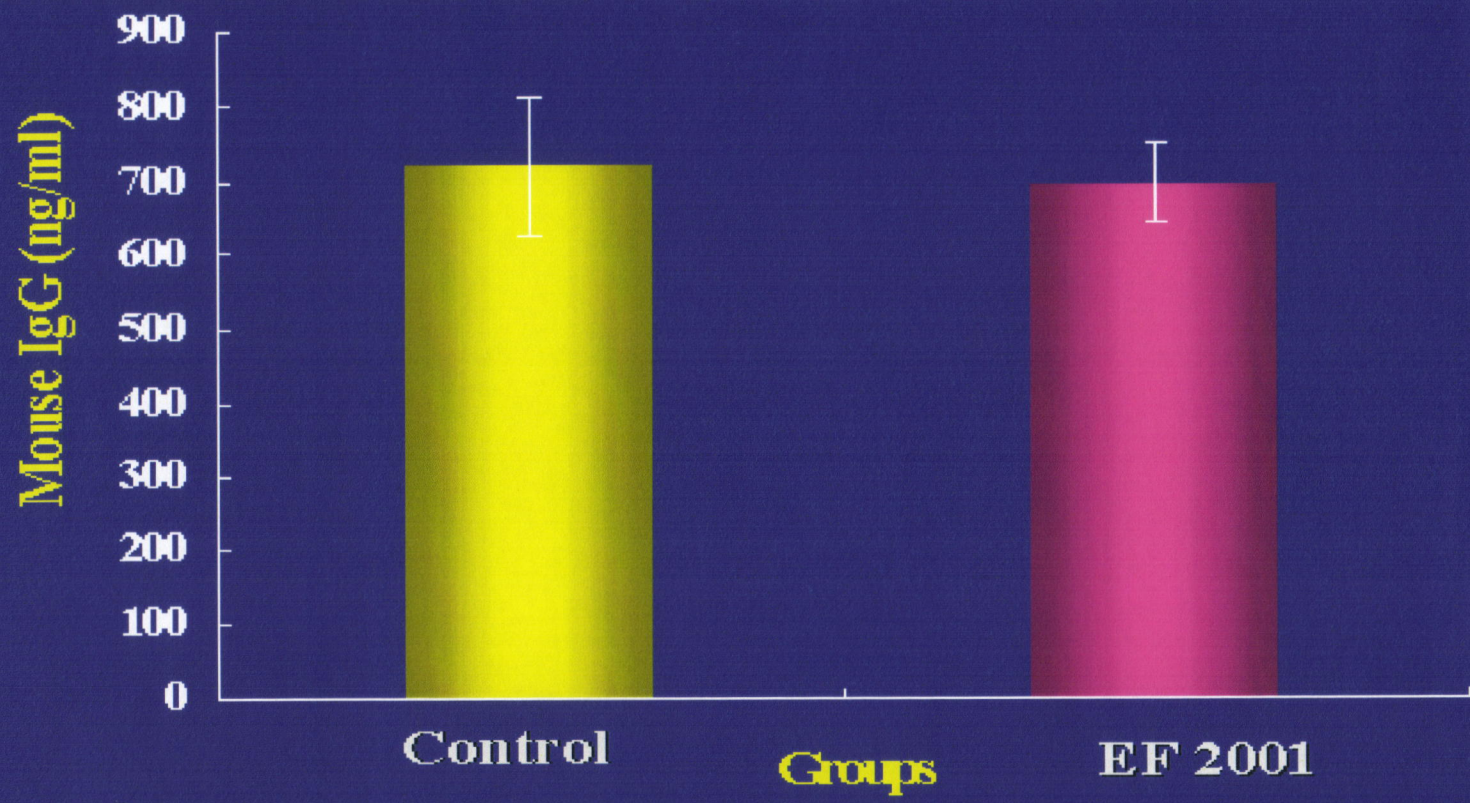

C3H mice of IgG in the blood. Each histogram represents the mean value ±SE for 10 mice IgG (M). Significantly different *p<0.05 Control vs. EF2001.

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Conclusion 1

- Anti-cancer effects : EF 2001 administration group: positive
- EF 2001 to the radiation protection effect: precision
- Immune activity effect: EF 2001 administration group: positive
- Anti-aging effect: EF 2001 administration group: positive
- Long life effect: EF 2001 administration group: positive
- It put the *Enterococcus Faecalis* dosage, and the level of total IgE in serum glutamic-oxaloacetic fell.
- The level of total IgM in serum glutamic-oxaloacetic increased the *Enterococcus Faecalis* dosage group. However, the level of total IgG in serum glutamic-oxaloacetic rather fell slightly.

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Conclusion 2

1.It let cell-mediated immunity such as a macrophage and natural killer T cell activate, and the immunization activation action that *Enterococcus Faecalis* has does not become it, and promotion of humeral immunity anti-action is thought about.

2.In the dosage of *Enterococcus Faecalis*, an IL-2 level in blood rises, and it think that cytokine of the spleen changed from Th2 type into Th1 type. Therefore, it decrease IgG and an IgE level, and it is suggested that it showed an allergic restraint effect.

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