Supplementary information

Figure legends

Figure 1. Effects of DMY on the levels of specific antibodies and cytokines.

A. The effect of daily treatment with DMY on serum OVA-specific IgG1. The serum from eyeball was collected on day 41.

B. The effect of daily treatment with DMY on serum OVA-specific IgG2a. The serum from eyeball was collected on day 41.

C. The effect of daily treatment with DMY on serum IL-4. The serum from eyeball was collected on day 41.

D. The effect of daily treatment with DMY on serum IFN-γ. The serum from eyeball was collected on day 41.

$^{\#}P < 0.05$; $^{\#\#}P < 0.01$, for the PBS group compared to the OVA group. The data represent the mean ± SD of triplicate determinations.

Figure 2. Effects of DMY on the population of DCs and T cells in the spleen.

A. The scatter diagrams of DCs FACS analysis. Spleens were isolated from each group of mice 24 h after the last challenge and labeled with anti-CD11c and anti-MHC II antibodies.

B. The expression of CD69 in $CD4^+$ T cells by FACS analysis. Spleens were isolated from each group of mice 24 h after the last challenge, and labeled with anti-CD4 and anti-CD69 antibodies.

$^{\#}P < 0.05$; $^{\#\#}P < 0.01$, for the PBS group compared to the OVA group. The data represent the mean ± SD of triplicate determinations.

Figure 3. Effects of DMY on the expression of FcεRI in RBL-2H3 cells.

A. Cell surface expression of FcεRIα was assessed by FACS analysis. RBL-2H3 cells were treated with DMY (1, 5, or 10 μg/mL) for 24 h, and then labeled with anti-FcεRIα antibodies. Cells without DMY served as control group.

B. The expression of mRNA for FcεRIα, FcεRIβ and FcεRIγ was assessed by real time PCR. RBL-2H3 cells were treated with DMY (1, 5, or 10 μg/mL) for 24 h.

C. The expression of mRNA for FcεRIα, FcεRIβ and FcεRIγ was assessed by real-time PCR. RBL-2H3 cells sensitized with anti-DNP-IgE and were treated with DMY (1, 5, or 10 μg/mL) for 24 h. Sensitized cells without DMY served as IgE group.

$^{\#}P < 0.05$; $^{\#\#}P < 0.01$, for the control group compared to the IgE group. The data represent the mean ± SD of triplicate determinations.

Figure 4. Effects of DMY and its homologs on cell viability, and the release of β-hexosaminidase affected by the DMY-mediated blockade of FcεRI-IgE.

A. The cytotoxicity of DMY and its homologs on RBL-2H3 cells were evaluated using MTT assay. RBL-2H3 cells were incubated with resveratrol at a dose of 1-15 μg/mL.

B. The release of β-hexosaminidase affected by the DMY-mediated blockade of FcεRI-IgE. RBL-2H3 cells were sensitized with anti-DNP-IgE and treated with DMY (1, 5, or 10 μg/mL) for 24 h, medium was changed to Tyrode's buffer and stimulated with DNP-BSA for 1 h. Then, β-

Hexosaminidase was subsequently measured.

$^{\#}P < 0.05$; $^{\#\#}P < 0.01$, for the PBS group compared to the DNP-BSA group. The data represent the mean ± SD of triplicate determinations.

Figure 1

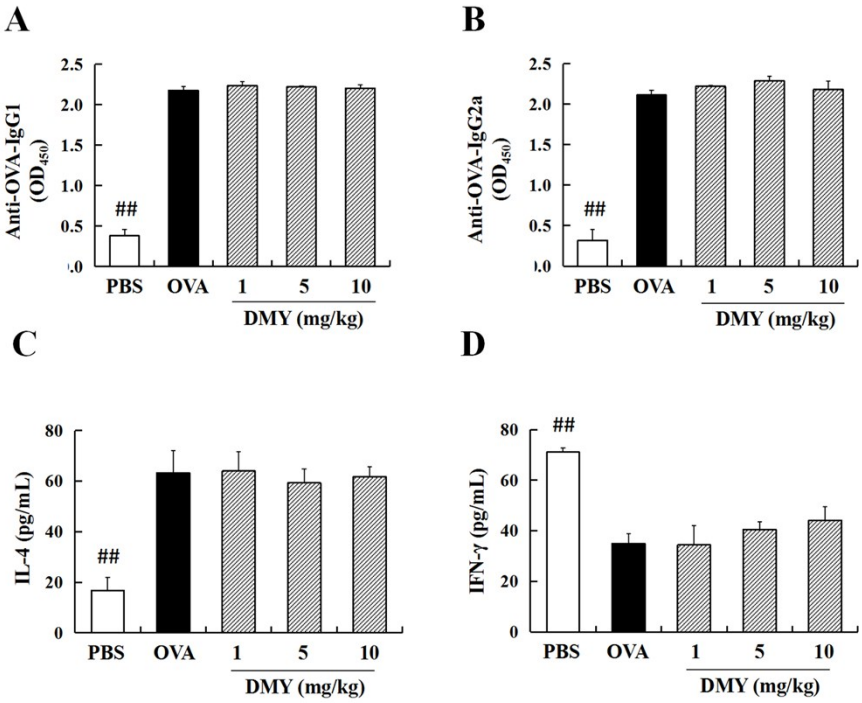
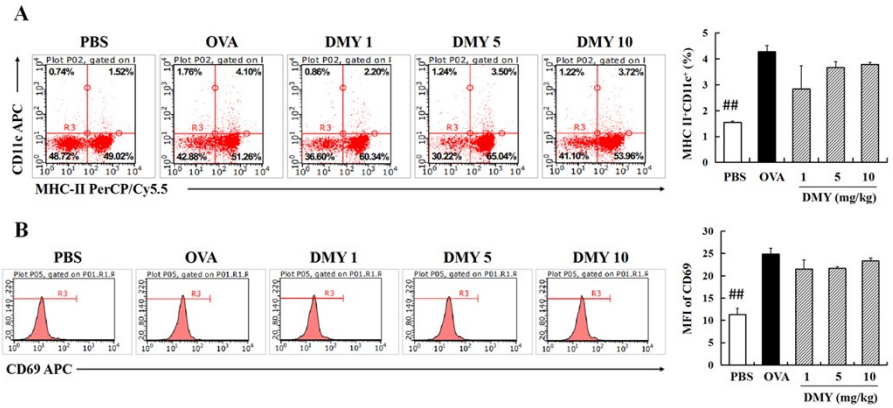

A
Anti-OVA-IgG1 (OD450)
2.5
2.0
1.5
1.0
0.5
0
##
PBS
OVA
1
5
10
DMY (mg/kg)
B
Anti-OVA-IgG2a (OD450)
2.5
2.0
1.5
1.0
0.5
0
##
PBS
OVA
1
5
10
DMY (mg/kg)
C
IL-4 (pg/mL)
80
60
40
20
0
##
PBS
OVA
1
5
10
DMY (mg/kg)
D
IFN-γ (pg/mL)
80
60
40
20
0
##
PBS
OVA
1
5
10
DMY (mg/kg)

Figure 2


A
PBS
OVA
DMY 1
DMY 5
DMY 10
CD11c APC
MHC-II PerCP/Cy5.5
MHC II+CD11c+ (%)
##
PBS
OVA
1
5
10
DMY (mg/kg)

B
PBS
OVA
DMY 1
DMY 5
DMY 10
CD69 APC
MFI of CD69
##
PBS
OVA
1
5
10
DMY (mg/kg)

Figure 3

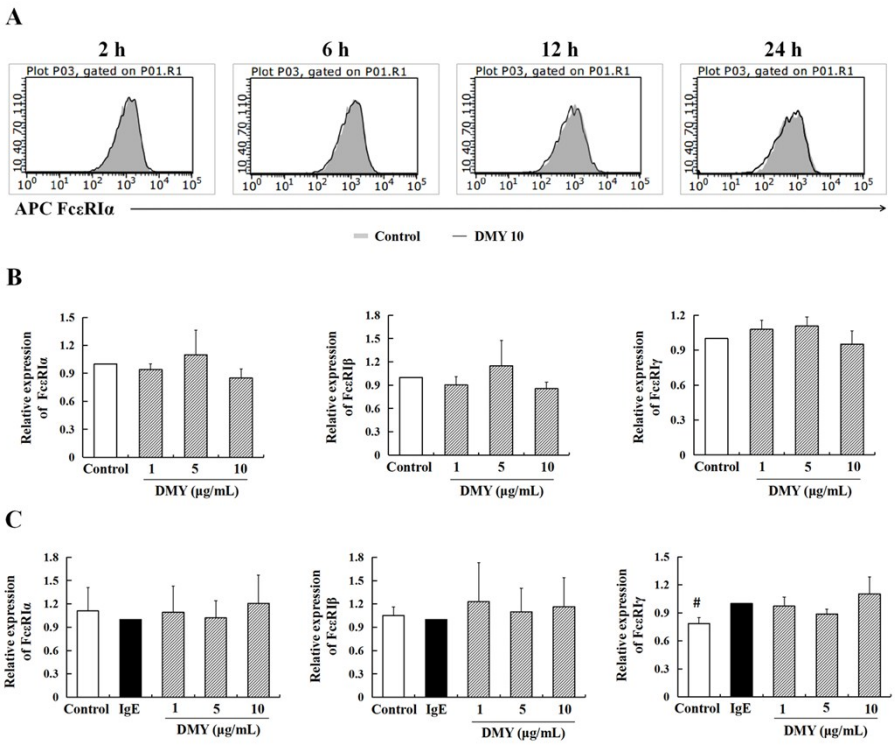
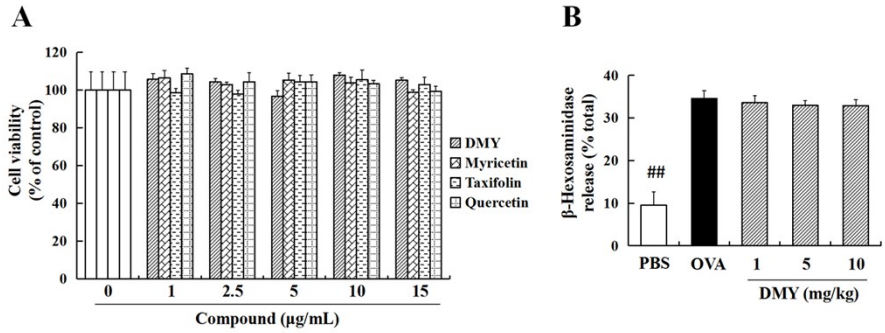

A
2 h
6 h
12 h
24 h
Plot P03, gated on P01.R1
APC FcεRIα
Control
DMY 10
B
Relative expression of FcεRIα
Relative expression of FcεRIβ
Relative expression of FcεRIγ
Control
1
5
10
DMY (μg/mL)
C
Relative expression of FcεRIα
Relative expression of FcεRIβ
Relative expression of FcεRIγ
Control
IgE
1
5
10
DMY (μg/mL)
#

Figure 4


A
Cell viability (% of control)
120
100
80
60
40
20
0
0
1
2.5
5
10
15
Compound (μg/mL)
DMY
Myricetin
Taxifolin
Quercetin
B
β-Hexosaminidase release (% total)
40
30
20
10
0
##
PBS
OVA
1
5
10
DMY (mg/kg)