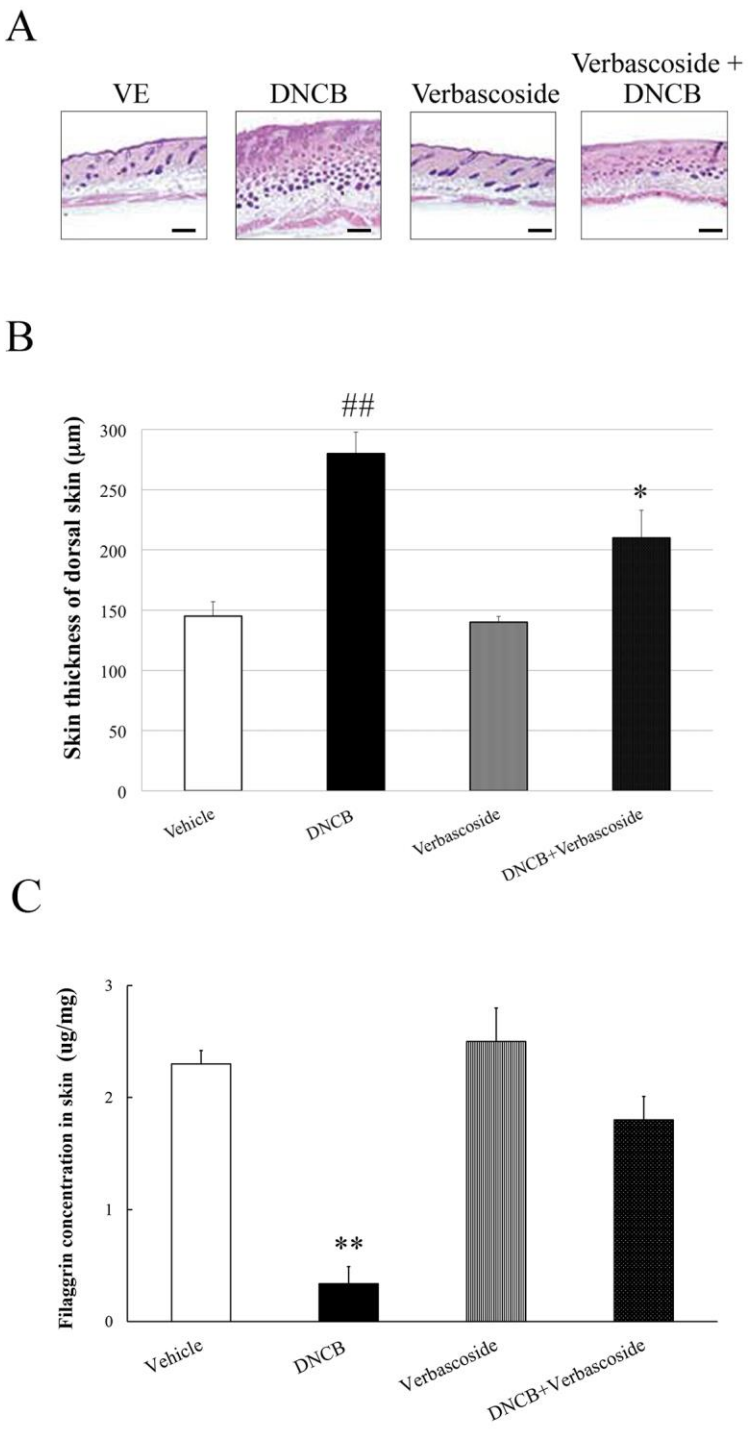

Figure S1. Effect of verbascoside on dorsal skin in animal dermatitis model. A) Representative examples of skin sections (4 μm) stained with hematoxylin–eosin. Skin samples were harvested from dorsal skins of mice from different treatment groups on the last day of the study. Scale bar = 100 μm. B) Histological analysis of

skin thicknesses of the mice from different experimental groups. The data are presented as the mean±SD (n =6). ## $p<0.01$, significantly different from control group by paired t-test; * $p<0.05$, significantly different from DNCB treated group by paired t-test. C) Skin samples were lysed and total proteins were extracted. Filaggrin protein in the lysate was measured by ELISA. The expression level was normalized to total protein. The data are presented as the mean±SD (n =6). ** $p<0.01$, significantly different from vehicle group.

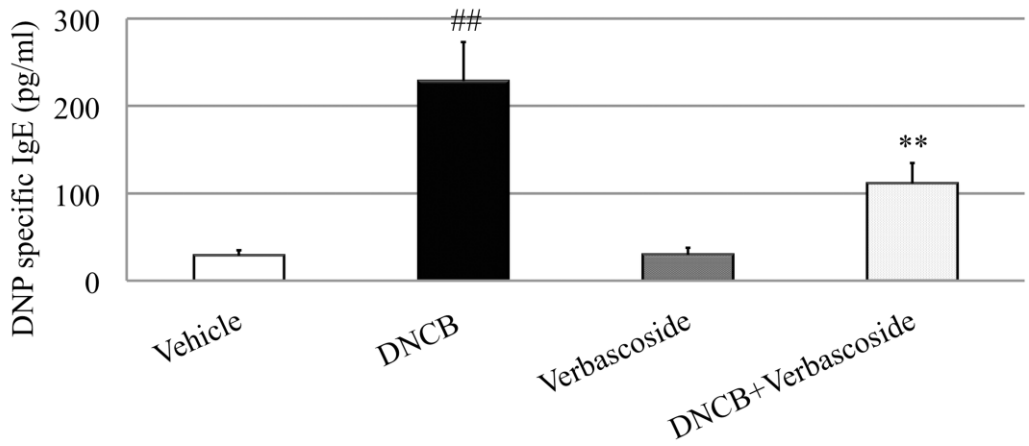

Figure S2. Effect of verbascoside on DNCB induced increase of DNP-specific IgE in serum. Sample blood was collected on the last day of the study (day 19). The level of serum DNP-specific IgE was measured with ELISA. The data are presented as the mean±SD (n =6). ## $p<0.01$, significantly different from control group; ** $p<0.01$, significantly different from DNCB treated group.

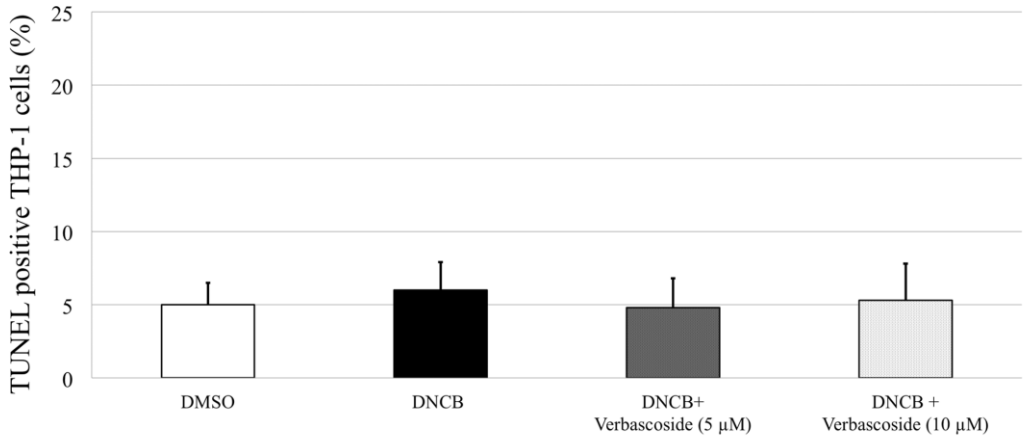

Figure S3. Effects of DNCB or verbascoside treatments on THP-1 cells viability. THP-1 cells were harvested with exposure to the indicated chemicals for 24 h. Cell viability was determined by TUNEL assay. Positively stained cells in the assay were counted as dead cells.

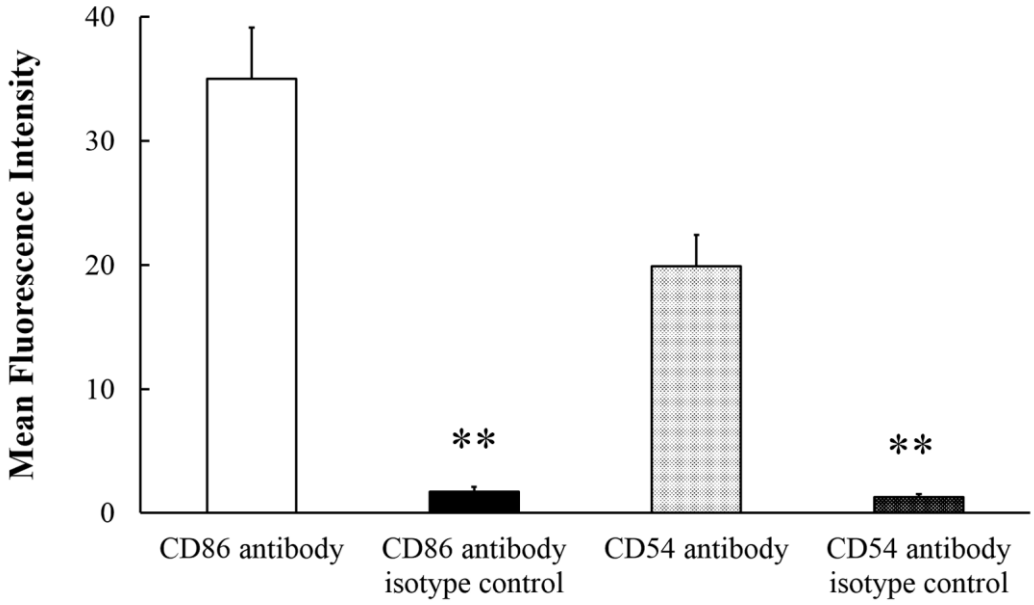

Figure S4. Isotype control antibodies show no reactivity on THP-1 cells.

THP-1 cells treated with DNCB for 24h were harvested. The isotype control antibodies for CD86 and CD54 were tested for non-specific binding on these cells by flow cytometry. The MFI was used as indicator of surface marker expression. **

p<0.01, significantly different from the respective positive group as analysed with unpaired t-test.

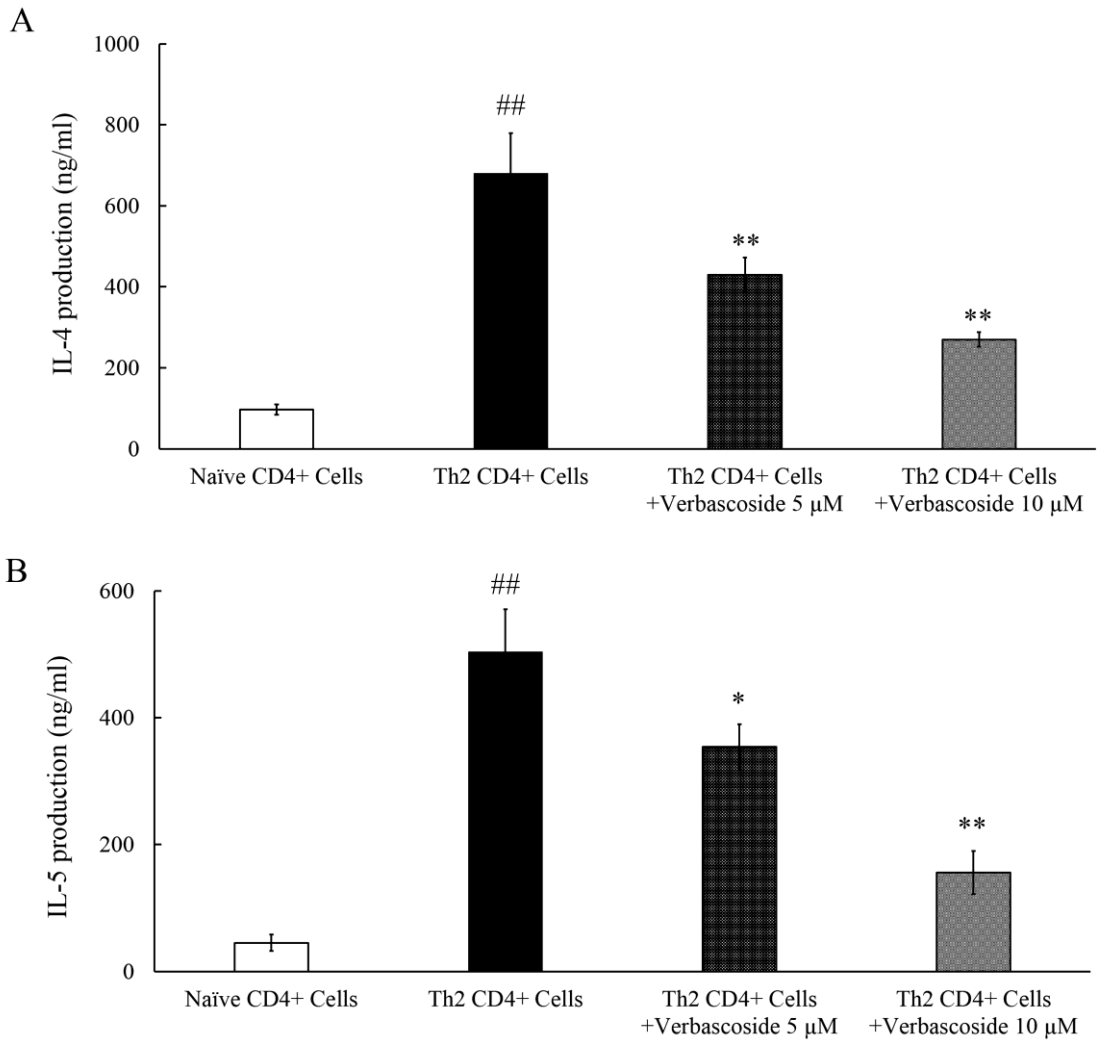

Figure S5. Effects of verbascoside on Th2 CD4+ cells. Naive CD4+ Cells were first differentiated into Th2 CD4+ cells in culture. The activated Th2 cells were then treated with PBS, 5 μM or 10 μM verbascoside for 24 h and the cell culture media were harvested. IL-4 and IL-5 levels in the media were quantified by ELISA. The data are presented as the mean±SD (n=4). ## p<0.01, significantly different from naive T cells group; *p<0.05, ** p<0.01, significantly different from Th2 cells control group treated with PBS as analysed with unpaired t-test.