



**Figure S1.** TNF- $\alpha$  inhibitory effect of the 20 LAB strains (heat-treated) isolated from kimchi. RAW 264.7 cells ( $1 \times 10^6$  cells/well) were treated with 100 ng/mL LPS in the presence or absence of heat-inactivated LAB ( $1 \times 10^5$  CFU/well) for 20 h. To determine the level of TNF- $\alpha$ , culture supernatants were used for ELISA. The mean  $\pm$  SD ( $n = 3$ ) showed enzyme activity values. # Significantly difference are derived compared to normal control group ( $p < 0.05$ ). \* Significantly difference are derived compared to LPS-only treated group ( $p < 0.05$ ).