## **SUPPORTING INFORMATION**

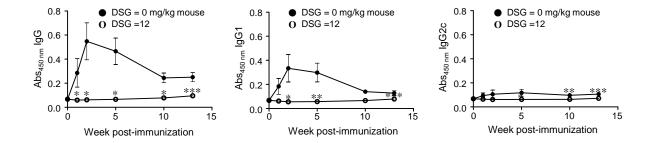
## A small molecule inhibitor for ATPase activity of Hsp70 and Hsc70 enhances the immune response to protein antigens

Kyung-Hwa Baek, <sup>1</sup> Haiying Zhang, <sup>2</sup> Bo Ryeong Lee, <sup>2</sup> Young-Guen Kwon, <sup>2</sup> Sang-Jun Ha, <sup>2,\*</sup>
Injae Shin<sup>1,\*</sup>

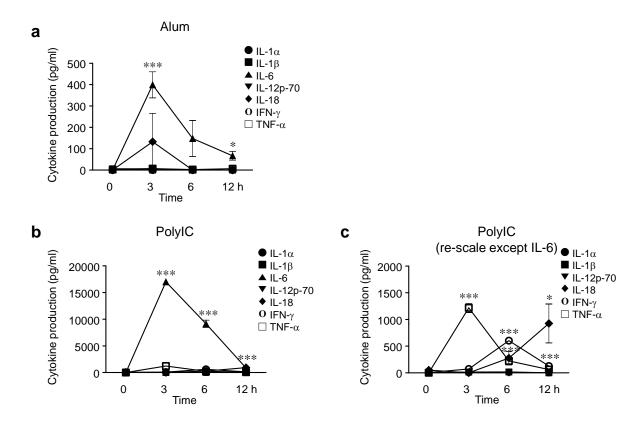
<sup>1</sup>National Creative Research Initiative Center for Biofunctional Molecules, Department of Chemistry, Yonsei University, Seoul 03722, Korea

\*Corresponding authors: injae@yonsei.ac.kr (I. Shin) or sjha@yonsei.ac.kr (S.-J. Ha)

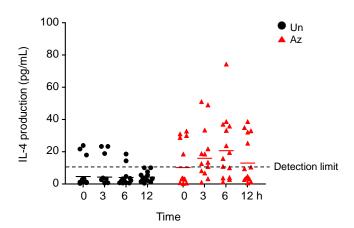
<sup>&</sup>lt;sup>2</sup>Department of Biochemistry, College of Life Science & Biotechnology, Yonsei University, Seoul 03722, Korea



**Figure S1.** DSG suppresses the immune response to a protein antigen. C57BL/6 mice (n = 3-5 per group) were i.p. injected with KLH (100 µg/mouse). The immunized mice were i.p. injected with DSG (12 mg/kg mouse) five times daily from 0 to 4 days after prime immunization. Sera were collected at the indicated times. Production of total IgG, IgG1 and IgG2c antibodies specific to KLH was determined by using an ELISA (mean  $\pm$  s.e.m, n = 3-5 mice per group). \*, p < 0.05; \*\*, p < 0.01; \*\*\*, p < 0.001.



**Figure S2.** Alum and PolyI:C produce inflammatory cytokines in mice. C57BL/6 mice (n = 3-5 per group) were *i.p.* injected with (a) Alum (33.0 mg/kg mouse) and (b) PolyI:C (6.65 mg/kg mouse), and sera were collected at the indicated times. The amounts of cytokines were determined by using a multiple cytokine assay. (c) Re-scaled graph of graph (b). All graphs are shown as mean  $\pm$  s.e.m. \*, p < 0.05; \*\*, p < 0.01; \*\*\*, p < 0.001.



**Figure S3.** Az slightly increases IL-4 production in mice. C57BL/6 mice (n = 15 per group) were *i.p.* injected with Az (2.25 mg/kg mouse) and sera were collected at the indicated times. The amount of IL-4 was determined by using an ELISA assay (mean  $\pm$  s.e.m).