

**Protectin DX ameliorates palmitate- or high-fat diet-induced insulin resistance and inflammation through an AMPK-PPAR $\alpha$ -dependent pathway in mice**

Tae Woo Jung<sup>1</sup>, Hyung-Chun Kim<sup>2</sup>, A.M. Abd El-Aty<sup>3,4</sup>, Ji Hoon Jeong<sup>5\*</sup>

*Running title:* PDX improves insulin resistance in myocytes

<sup>1</sup>Research Administration Team, Seoul National University Bundang Hospital, Gyeonggi, Republic of Korea

<sup>2</sup>Neuropsychopharmacology and Toxicology Program, College of Pharmacy, Kangwon National University, Chunchon, Republic of Korea

<sup>3</sup>Department of Veterinary Pharmacology and Toxicology, College of Veterinary Medicine, Konkuk University, Seoul, Republic of Korea

<sup>4</sup>Faculty of Veterinary Medicine, Cairo University, 12211-Giza, Egypt

<sup>5</sup>Department of Pharmacology, College of Medicine, Chung-Ang University, Seoul, Republic of Korea

\*Corresponding author: Ji Hoon Jeong, Professor, PhD

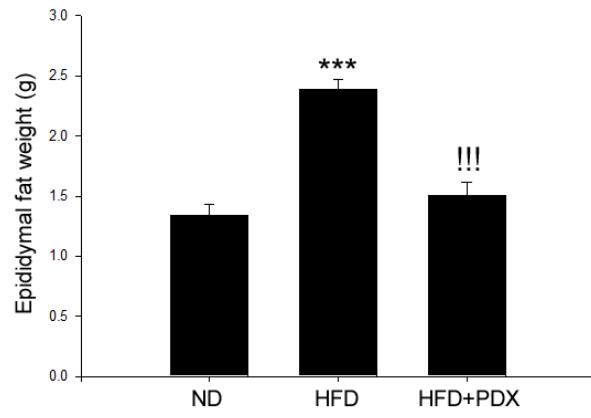
Department of Pharmacology, College of Medicine, Chung-Ang University, 221, Heuksuk-dong, Dongjak-gu, Seoul 156-756, Korea. Tel: +82-2-820-5688, Fax: +82-2-826-5680, E-mail: jhjeong3@cau.ac.kr

Supplemental Figure S1. **PDX administration reduces the weight of epididymal fat tissue and liver.** Measurement of epididymal fat tissue (A) and liver (B) weight in mice (five animals per treatment group). Means  $\pm$  SEM were calculated data obtained from five separated animals. \*\*\* $P < 0.001$  when compared to the ND treatment. !!! $P < 0.001$  and ! $P < 0.05$  when compared to the HFD.

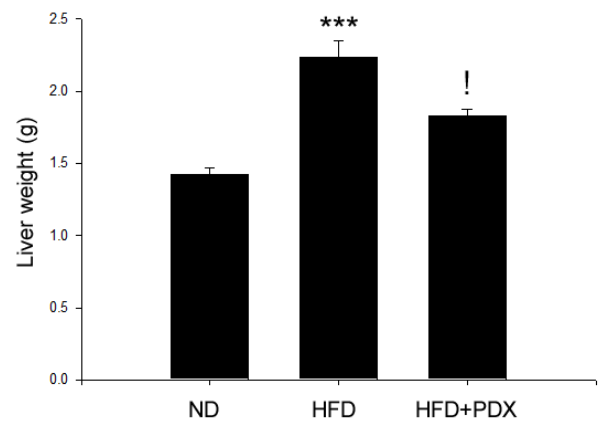
Supplemental Figure S2. **AMPK and PPAR $\alpha$  are not involved in the increase of muscle IL-6 expression by PDX.** (A) Quantitative real-time PCR analysis of IL-6 mRNA expression and (B) ELISA of IL-6 secretion in AMPK (20 nM) or PPAR $\alpha$  siRNA (20 nM)-transfected C2C12 cells treated with PDX (0-1  $\mu$ M) for 24 hr. (C) Quantitative real-time PCR analysis of IL-6 mRNA expression in soleus skeletal muscle of HFD-fed mice treated with PDX (1  $\mu$ g/mouse/day) for 8 weeks (five animals per treatment group). (D) ELISA of serum IL-6 in HFD-fed mice treated with PDX (five animals per treatment group). Means  $\pm$  SEM were obtained from three separated experiments or five animals. \* $P < 0.05$  and \*\* $P < 0.01$  when compared to the control or the ND treatment. !!! $P < 0.001$  when compared to the HFD treatment.

Supplemental Figure S1

**A**

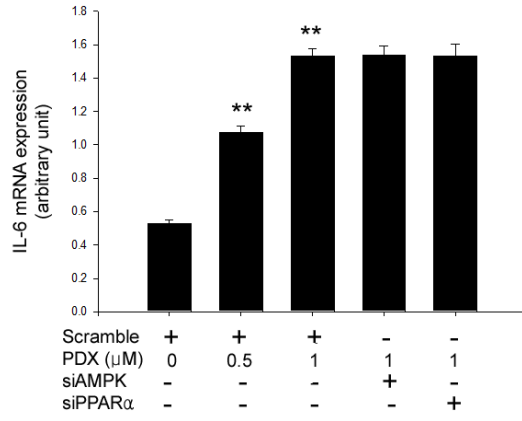


**B**

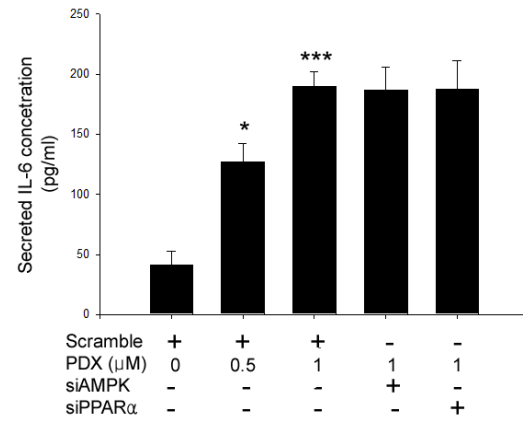


Supplemental Figure S2

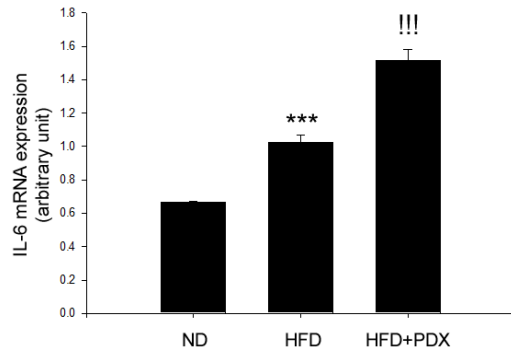
**A**



**B**



**C**



**D**

