

# Supplementary Figures

## **Radiosensitization by Marine Sponge *Agelas* sp. Extracts in Hepatocellular Carcinoma cells with Autophagy Induction**

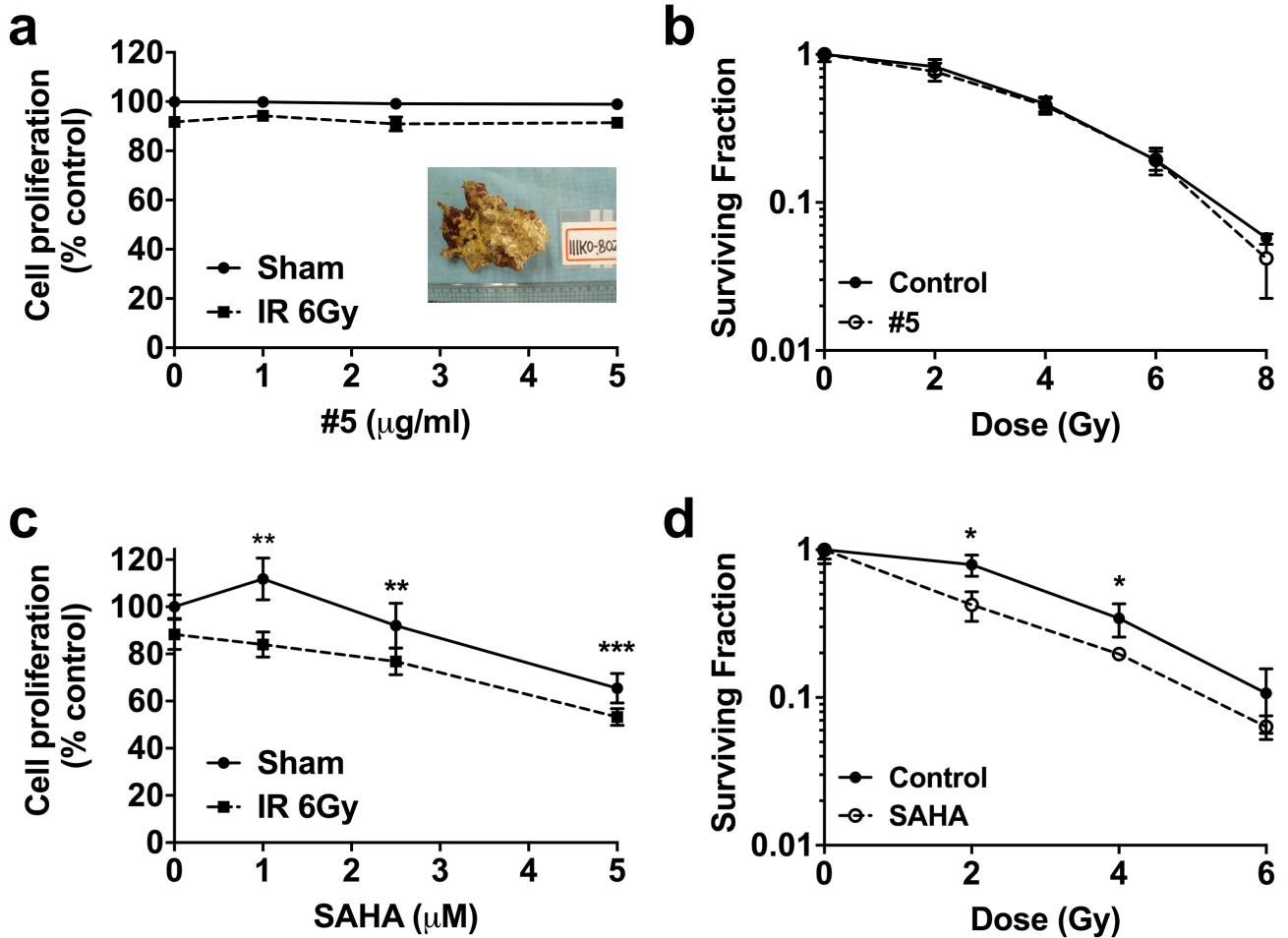
**Changhoon Choi<sup>1</sup>, Arang Son<sup>1</sup>, Hyi-Seung Lee<sup>2</sup>, Yeon-Ju Lee<sup>2</sup> and Hee Chul Park<sup>1,3</sup>**

<sup>1</sup>Department of Radiation Oncology, Samsung Medical Center, Seoul, 06351, South Korea,

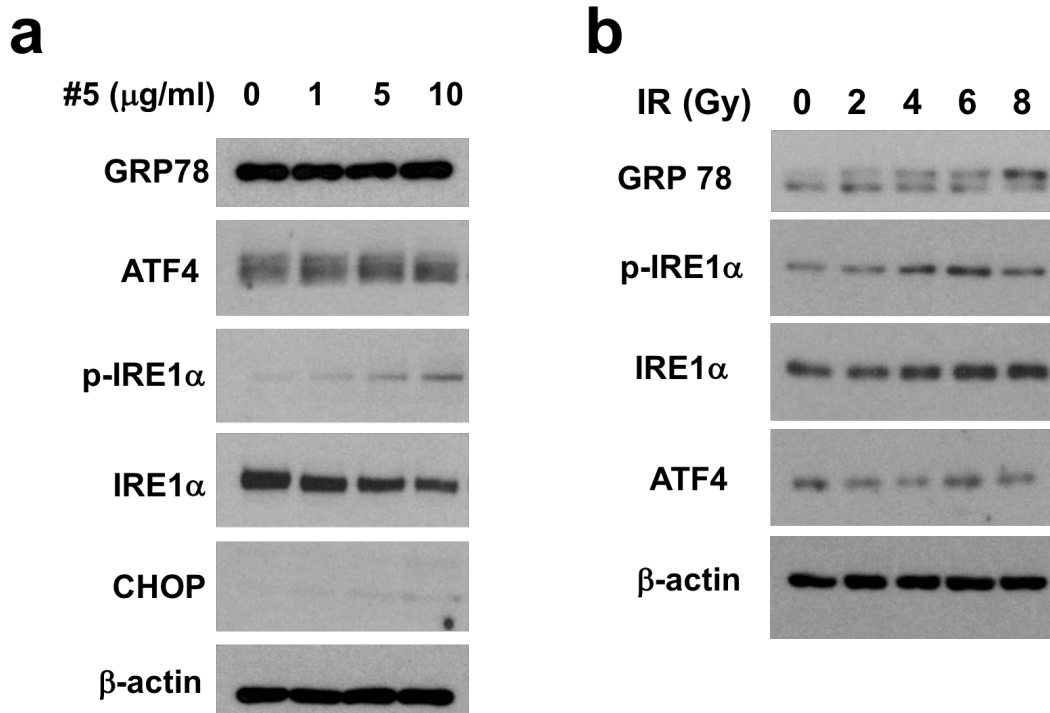
<sup>2</sup>Marine Natural Product Chemistry Laboratory, Korea Institute of Ocean Science, and Technology, Ansan 426-744, South Korea

<sup>3</sup>Sungkyunkwan University School of Medicine, Seoul, 06351, South Korea

Correspondence and requests for materials should be addressed to H.C.P. (E-mail: hee.ro.park@samsung.com)

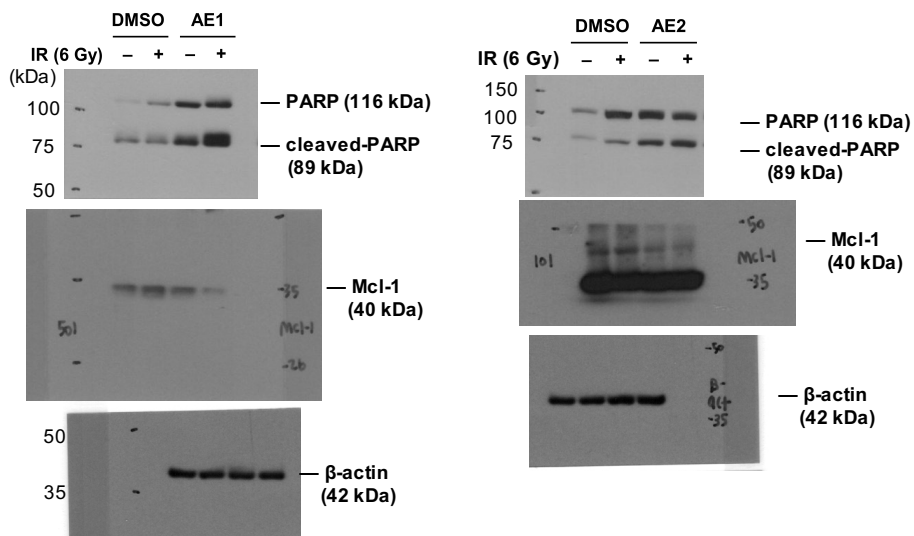


**Supplementary Fig. S1. Effect of Coscinoderma extract (#5) and SAHA on radiosensitivity of Hep3B cells.** When combined with 6 Gy of IR, extract from Coscinoderma sp. (see a photo) showed no additive effect on cell proliferation (**a**) and clonogenic survival (**b**). In contrast, SAHA enhanced radiation effect on cell proliferation (**c**) and clonogenic survival (**d**). Data are mean  $\pm$  S.D.; \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

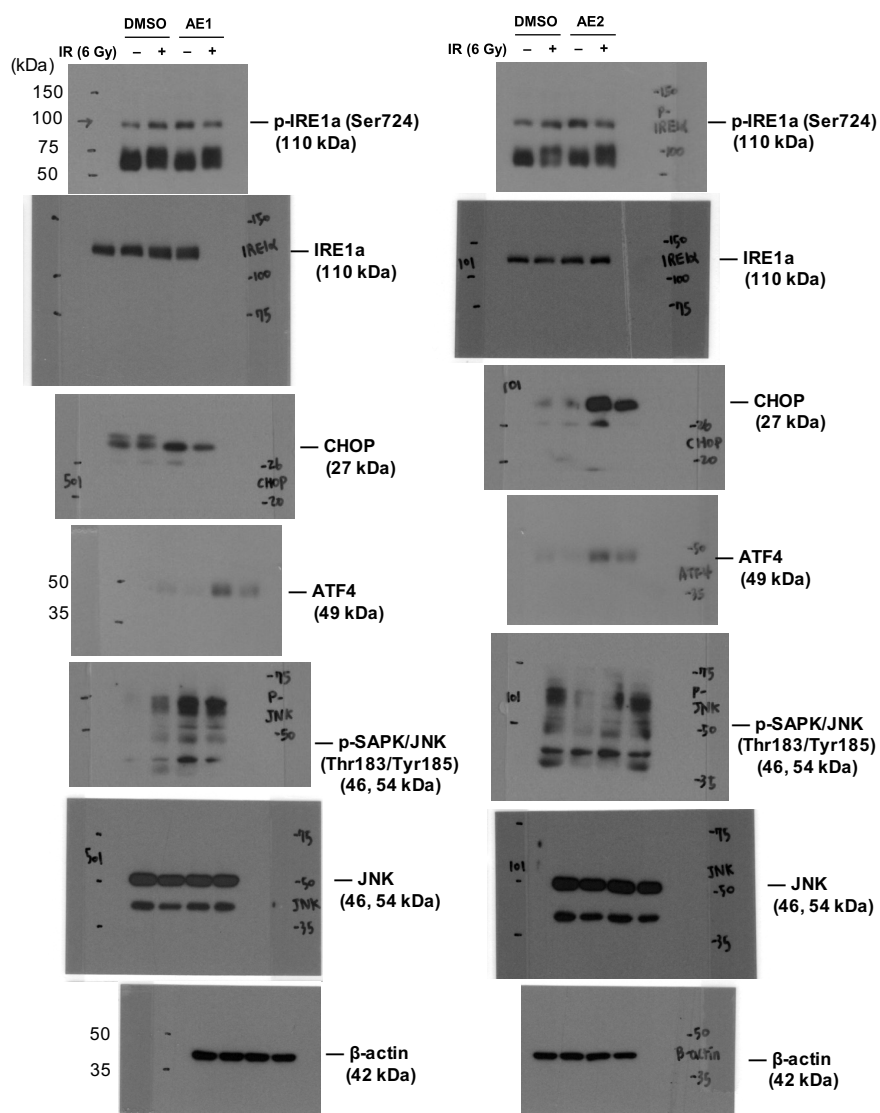


**Supplementary Fig. S2. Effect of Coscinoderma extract (#5) and IR on ER stress in Hep3B cells.** (a) Hep3B cells were treated with the indicated amounts of Coscinoderma extract and were harvested after 24 h of incubation. Western blot analysis showed little increase in expression of ER stress-related proteins. (b) After 24 h of exposure to the indicated dose of X-rays, Hep3B cells were subjected to Western blot analysis. IR increased ER stress-related proteins dose-dependently. Uncropped images are shown in Supplementary Fig. S3.

## Full-length blots used in Fig. 3c

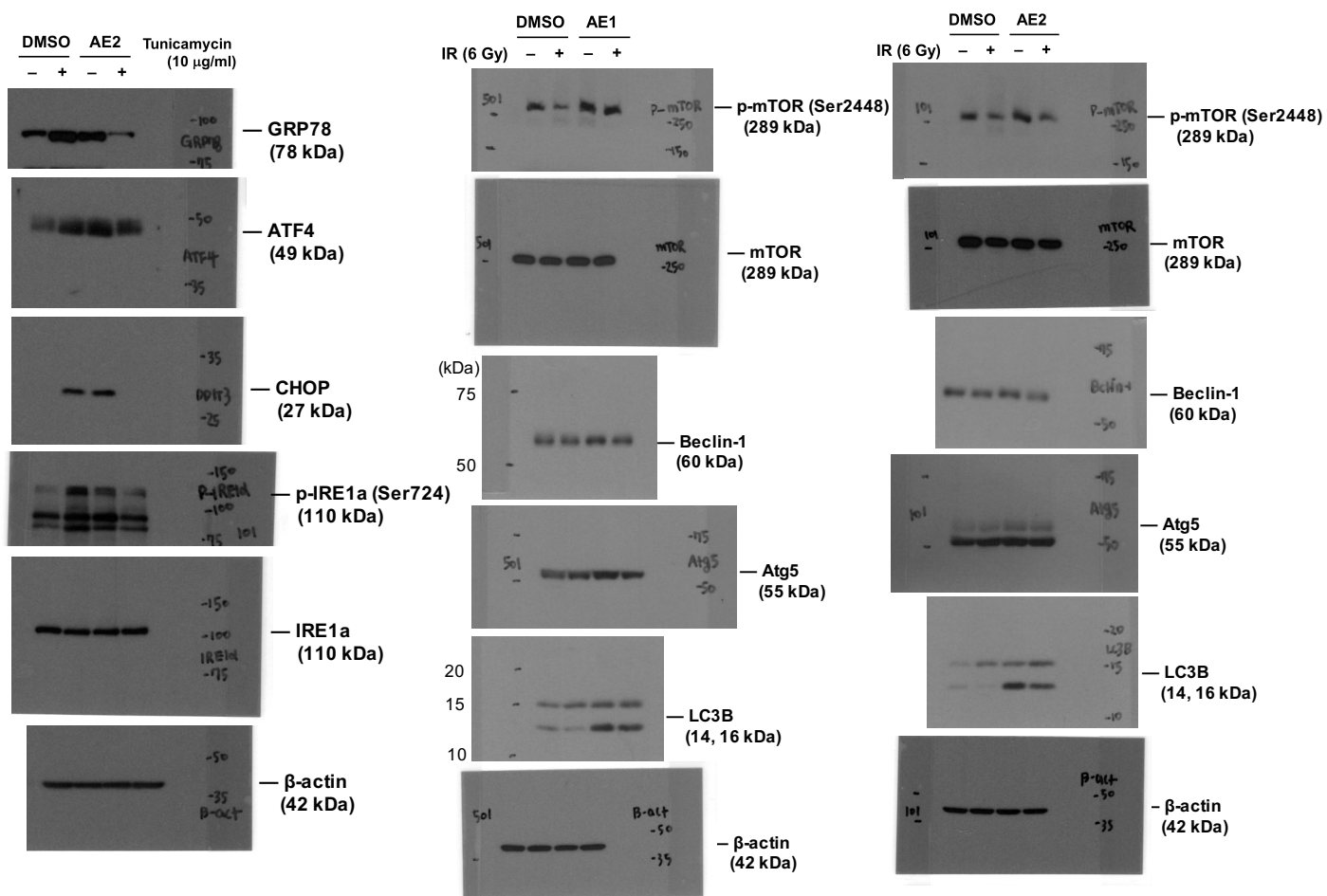


## Full-length blots used in Fig. 4a

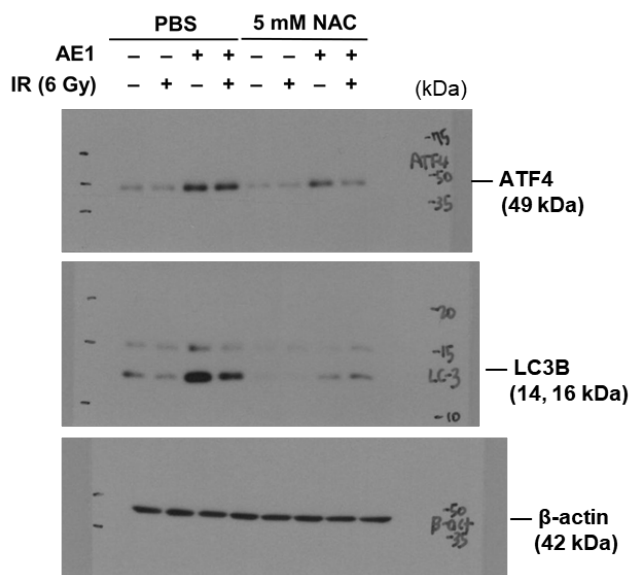


Supplementary Fig. S3. Uncropped images of western blots.

## Full-length blots used in Fig. 4b and 4c

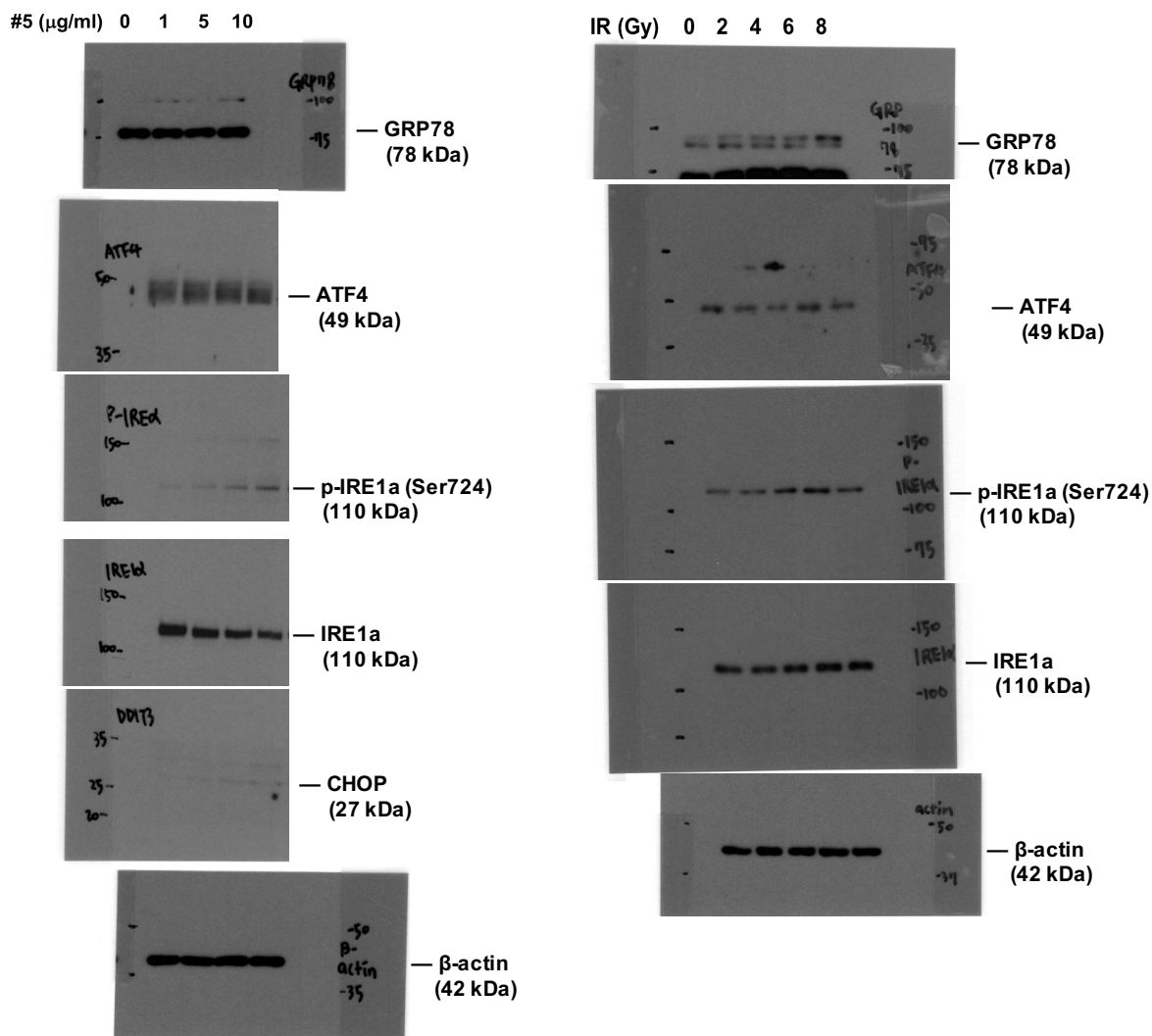


## Full-length blots used in Fig. 5b



Supplementary Fig. S3. Uncropped images of western blots.

## Full-length blots used in Supplementary Fig. S2a and S2b



Supplementary Fig. S3. Uncropped images of western blots.