

## Supplementary information

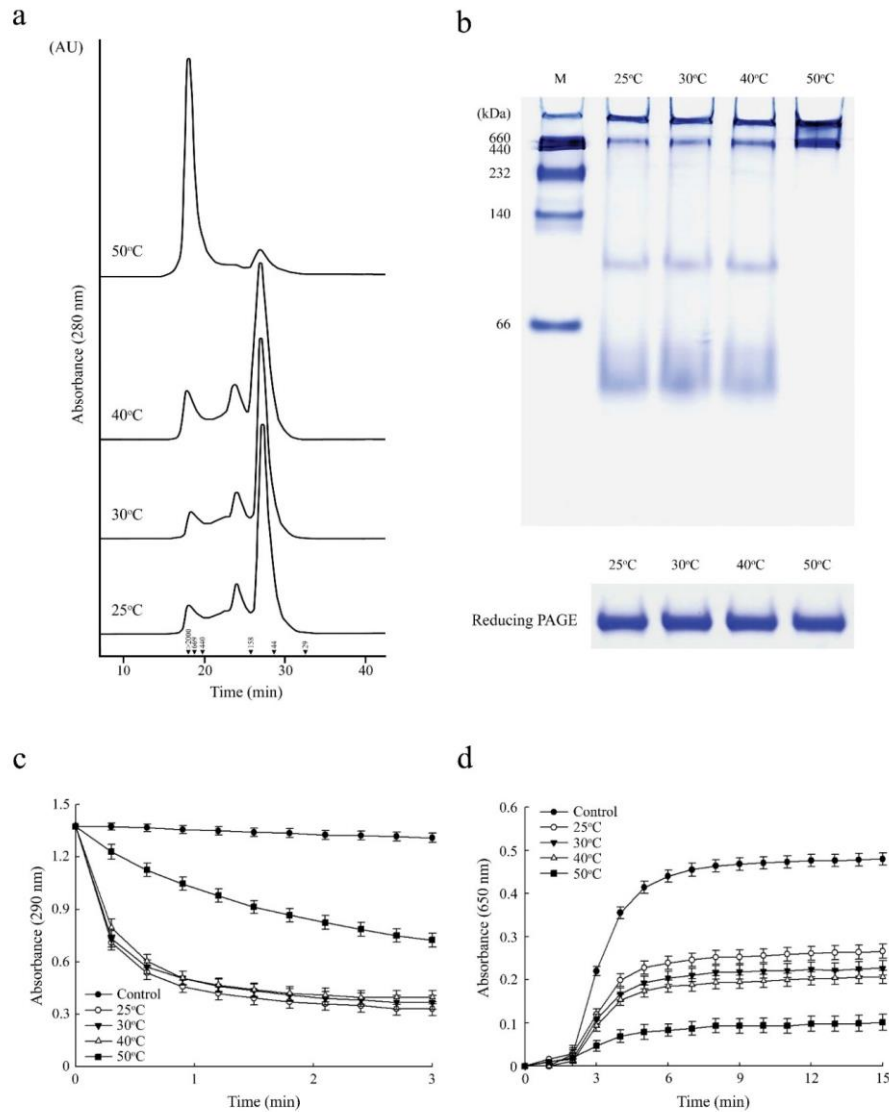
### Functional switching of ascorbate peroxidase 2 of rice (OsAPX2) between peroxidase and molecular chaperone

Sung Hyun Hong<sup>1</sup>, Bhumi Nath Tripathi<sup>1</sup>, Moon-Soo Chung<sup>1</sup>, Chuloh Cho<sup>1</sup>, Sungbeom Lee<sup>1,4</sup>, Jin-Hong Kim<sup>1,4</sup>, Hyoung-Woo Bai<sup>1,4</sup>, Hyeun-Jong Bae<sup>2</sup>, Jae-Young Cho<sup>3</sup>, Byung Yeoup Chung<sup>1</sup> & Seung Sik Lee<sup>1,4,\*</sup>

<sup>1</sup>Advanced Radiation Technology Institute, Korea Atomic Energy Research Institute, 29 Geungu-gil, Jeongeup 580-185, Korea. <sup>2</sup>Department of Bioenergy Science and Technology, Chonnam National University, Gwangju 61186, Korea. <sup>3</sup>Department of Bioenvironmental Chemistry, Chonbuk National University, 567 Baekje-daero, Deokjin-gu, Jeonju 54896, Korea. <sup>4</sup>Department of Radiation Biotechnology and Applied Radioisotope, Korea University of Science and Technology, Daejeon 34113, Korea. \*Correspondence and requests for materials should be addressed to S.S.L. (email: [sslee@kaeri.re.kr](mailto:sslee@kaeri.re.kr))

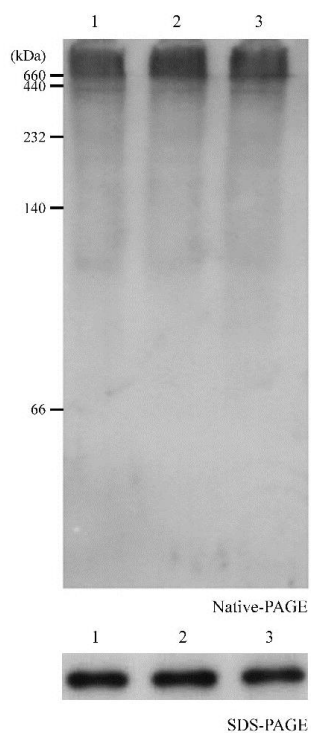
**Supplementary Figure S1**

**Supplementary Figure S2**



### Supplementary Figure S1

Structural and functional changes of purified OsAPX2 protein in response to heat treatment. Structural analysis of heat-treated OsAPX2 protein using SEC (a) and PAGE (b). The heat-treated OsAPX2 proteins were analysed using 10% native-PAGE (upper panel) or 12% SDS-PAGE (lower panel) (b). The relative APX (c) and molecular chaperone (d) activities of heat-treated OsAPX2 proteins were compared with those of untreated (25°C) (○) proteins. Purified OsAPX2 protein was incubated for 10 min at 30°C (▼), 40°C (Δ) or 50°C (■). The data are expressed as means of at least three independent experiments.



### Supplementary Figure S2

Supplementary Fig. S2. Molecular switching of OsAPX2 in response to salt-stress treatment and recovery in salt-insensitive rice cultivar (Pokkali). Rice seedlings were cultivated in 0.5× MS liquid medium for 3 weeks (Lane 1). For salt stress, 3-week-old cultivated rice plants were transferred to nutrient solution (0.5× MS medium) containing 100 mM NaCl for 3 d (Lane 2). For recovery, rice plants treated with salt stress were transferred to a new nutrient solution containing no salt and grown for 3 d (Lane 3).