## **Description of Additional Supplementary Files**

Title: Supplementary Data 1

Description: We semi-quantitatively analyzed lipid species distribution considering 17117 lipid ID species at 25  $\mu$ m spatial resolution through the entire kidney section by IMAGEREVEAL<sup>TM</sup> MS software (Shimadzu Corporation).

We selected 3 areas of cortex, transition and medulla in each section based on the anatomical structure and compared "3 Control vs 3 KSPAPN" and "3 Control vs 3 KSPAKO".