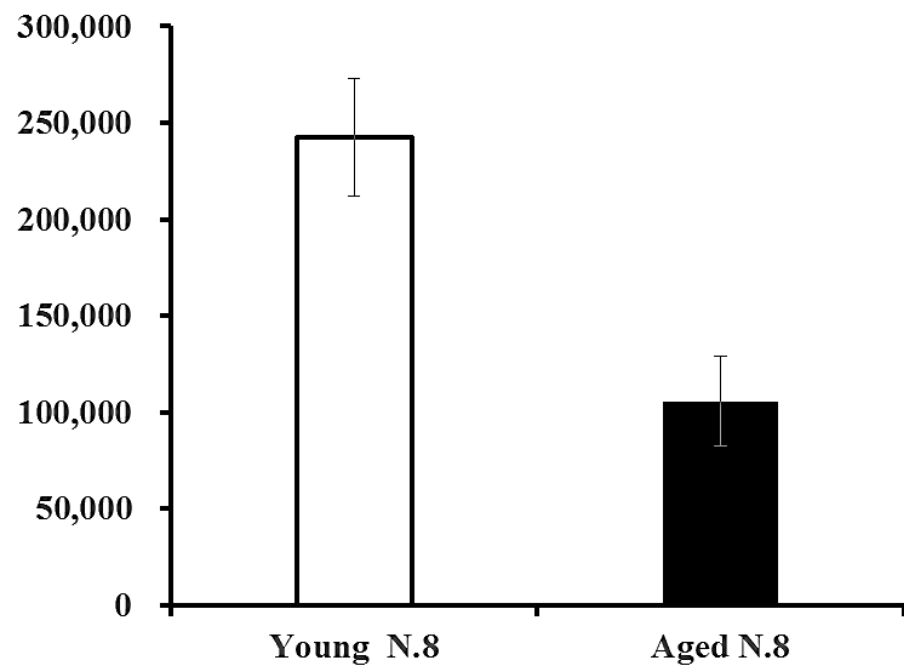
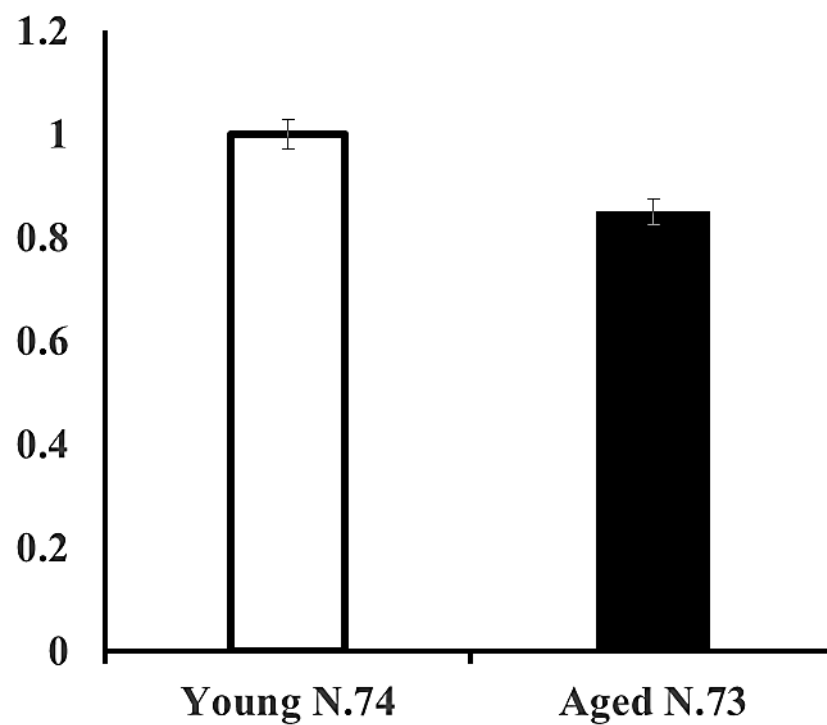


**S-Fig. A**



**B**



## Supplementary Figure 1

### Granulosa cell number in follicles and acetylation levels of H4K12 in oocytes

Oocyte-granulosa cell complexes (OGCs) were collected from antral follicles (3-6mm in diameter) of ovaries from young (N = 8, average age,  $25.4 \pm 0.4$  months) and older (N = 8, average age,  $151.3 \pm 2.1$  months) cows using siring connected to 21G needle and counting the follicle number. The granulosa cells were washed and separated by Accumax (Innovative Cell Technologies, Inc.) treatment. The total cell number was calculated based on the volume of the cellular suspension, and the concentration of the cellular suspension was determined using a haemocytometer. The number of granulosa cells per antral follicle was then determined for each donor cow (A: y-axis, granulosa cell number per follicle). Approximately 10 oocytes were collected from each donor and were subjected to immunostaining against acetylated H4K12 (B: y-axis, relative fluorescent intensity, average value of oocytes derived from young cows was defined as 1.0 for each donor cow).