



**Supplementary Fig. 3:** Flow cytometric measurements of boar spermatozoa from Fig. 2, before and after capacitation under proteasomal activity permissive/inhibiting (100  $\mu$ M MG132) conditions, including vehicle control (0.2% EtOH). Spermatozoa were labelled with an antibody against AWN spermadhesin to screen for AWN de-aggregation, and lectin PNA for outer acrosomal membrane integrity screening. A density scattered plot represents different, more precise, AWN labeling of each sperm treatment: before and after capacitation with/without proteasomal inhibitors, including vehicle control. Each scatter plot represents 10,000 properly focused single cell flow cytometric events. The experiment was replicated five times with comparable results.