



Supplementary Figures S3 Physiological hypotonic stress stimulates sperm motility “start up” in both wild-type and *Aqp3*^{-/-} sperm. Cauda epididymal sperm from both genotypes were directly released into NaCl solution with different osmolarity. The motion parameters were analyzed and recorded by a CASA analysis system. All data represented are obtained 10 min after releasing into solution. **A.** Percentage of sperm with progressive movement (VAP>50 $\mu\text{m/s}$, STR (VSL/VAP)>80%). **B.** Average path velocity (VAP). **C.** Straight line velocity (VSL). **D.** Curvilinear velocity (VCL). **E.** Amplitude of lateral head displacement (ALH). For each presented motility parameter, there is a significant change between 440 and 300 mOsm ($P < 0.00001$, t -test). No statistical significance was found between wild-type and *Aqp3*^{-/-} group ($P > 0.05$, t -test), although some parameters shows slightly decrease in *Aqp3*^{-/-} group. 5-9 mice were used for each osmolarity. All error bars represent s.e.m.