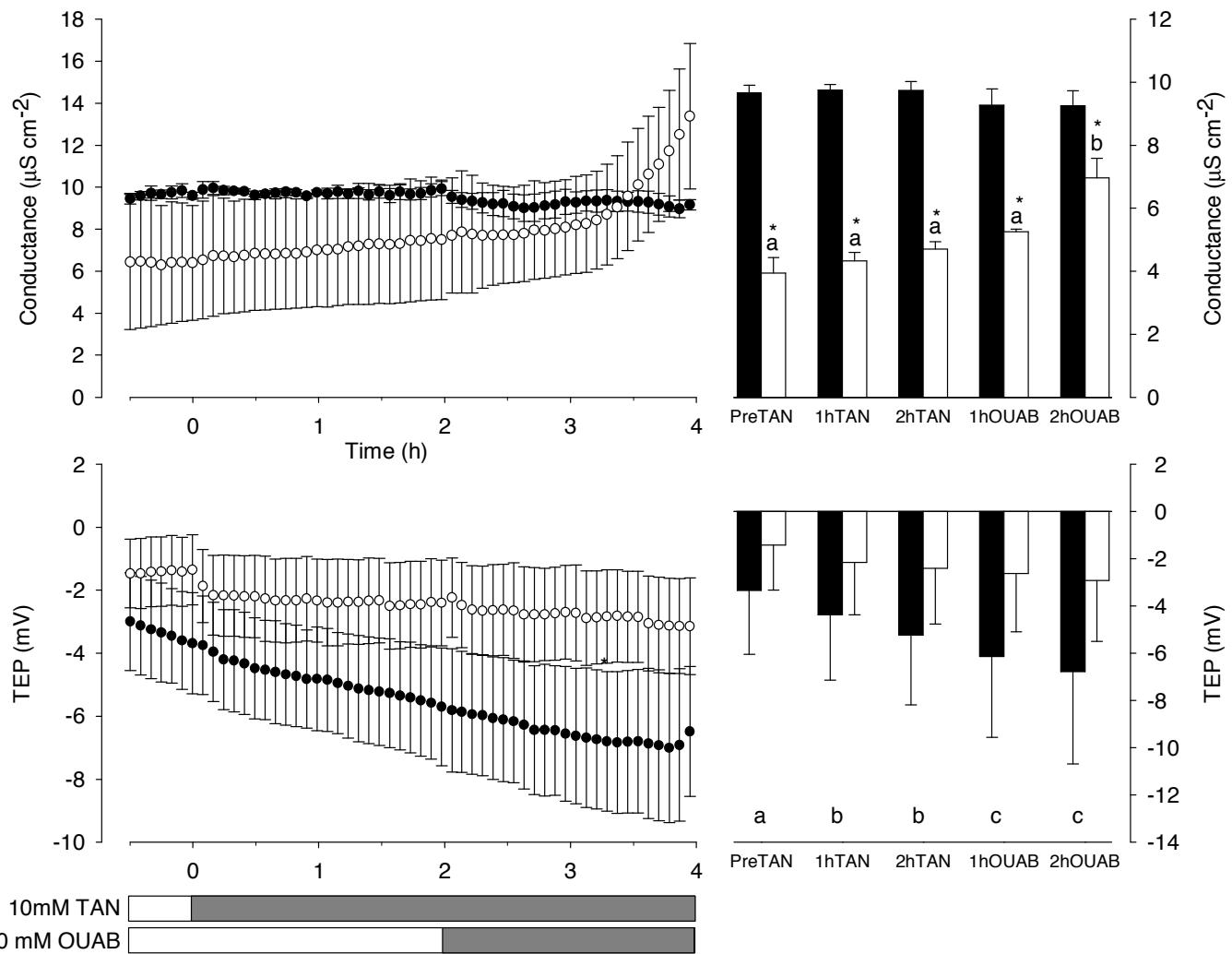
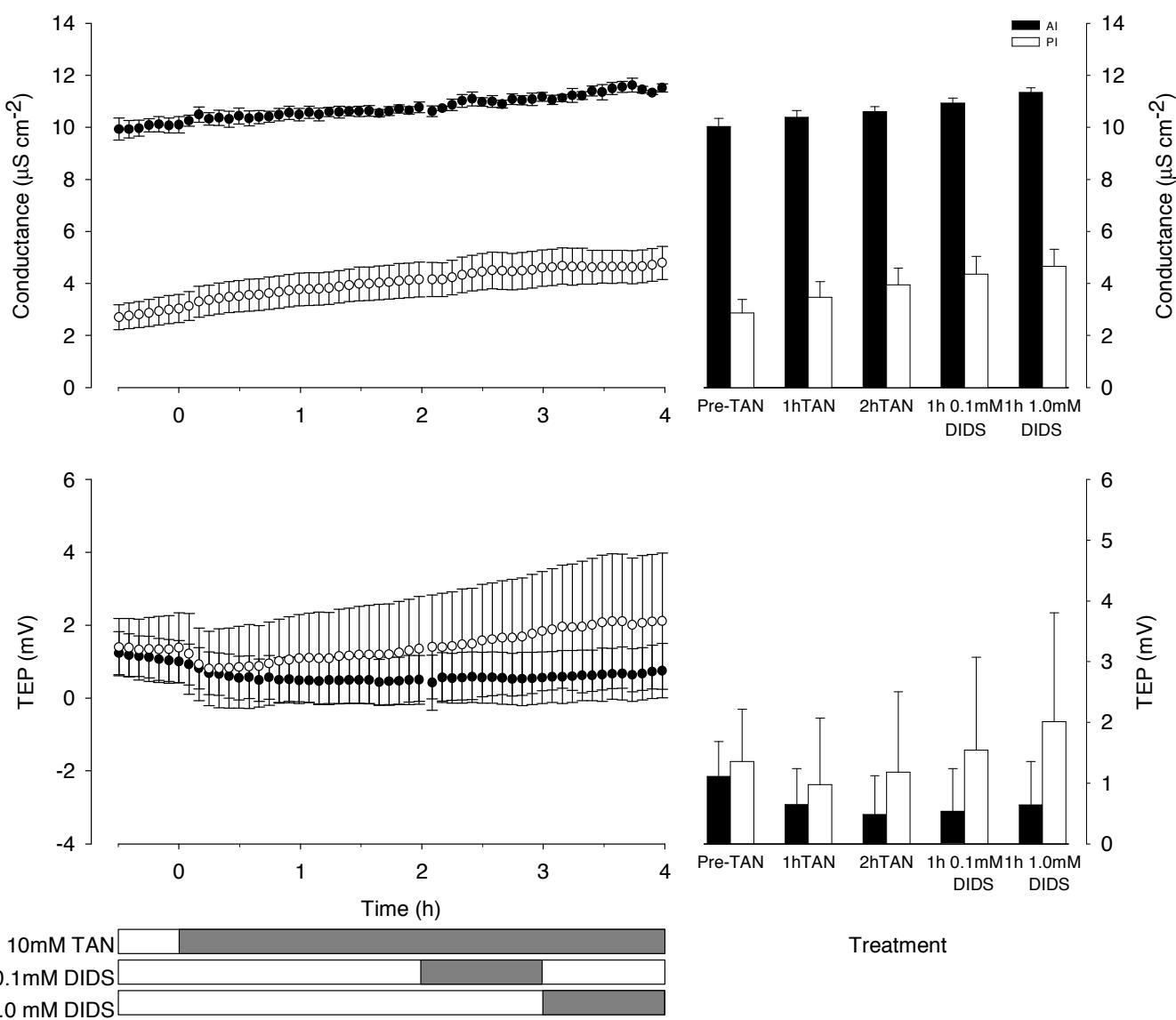


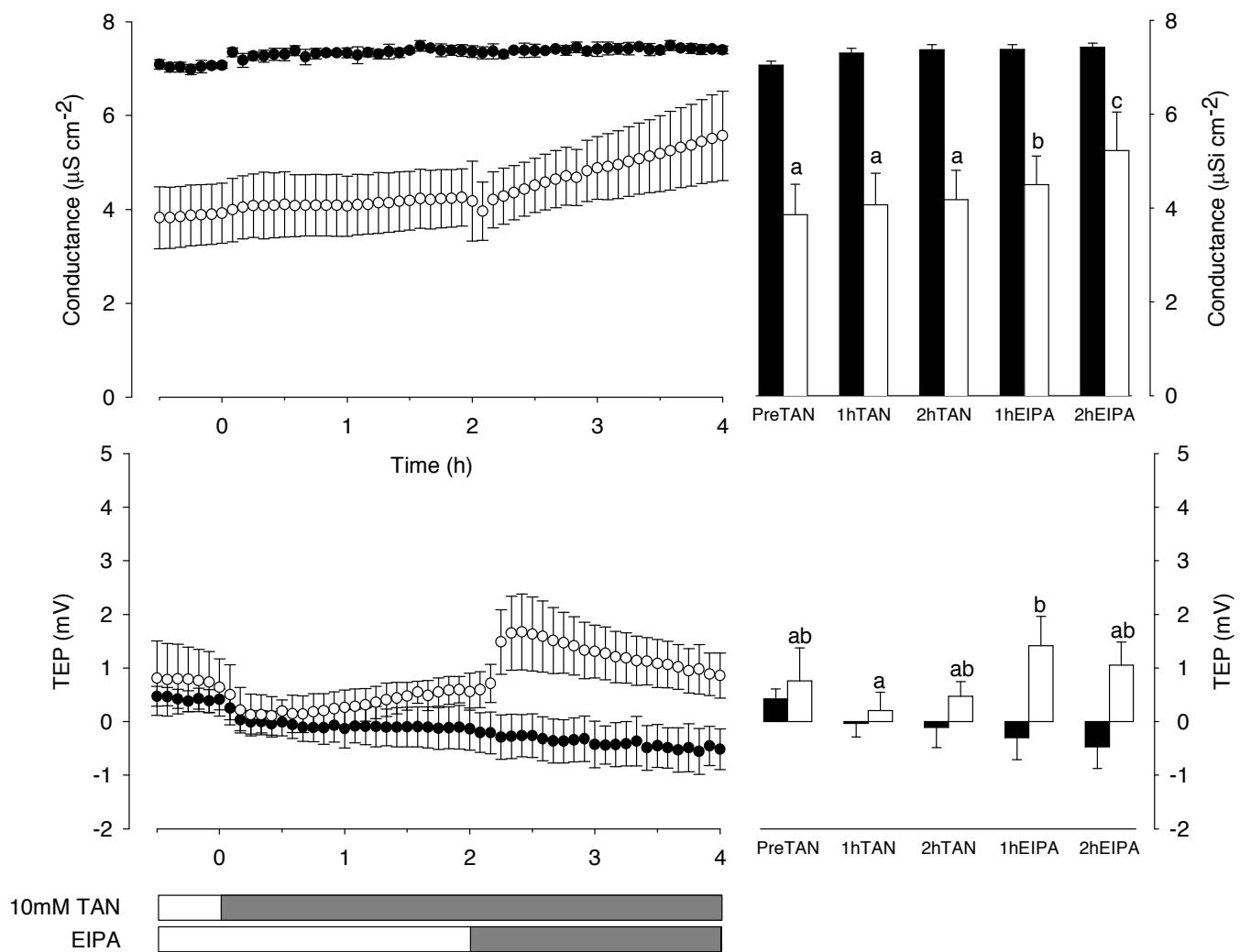
**Fig. S1.** Conductance ( $G$ ,  $\mu\text{Si cm}^{-2}$ ) and transepithelial potential (TEP, mV) of the weatherloach anterior (black) and posterior (white) intestine under control (Pre-TAN) and ammonia ( $10 \text{ mmol l}^{-1}$  TAN serosal) exposure conditions. (A)  $G$  and (B) TEP measurements made over 5 min intervals. (C,D) The same data (respectively) averaged over hour periods. Bars with like characters are not significantly different ( $N=4$ ).



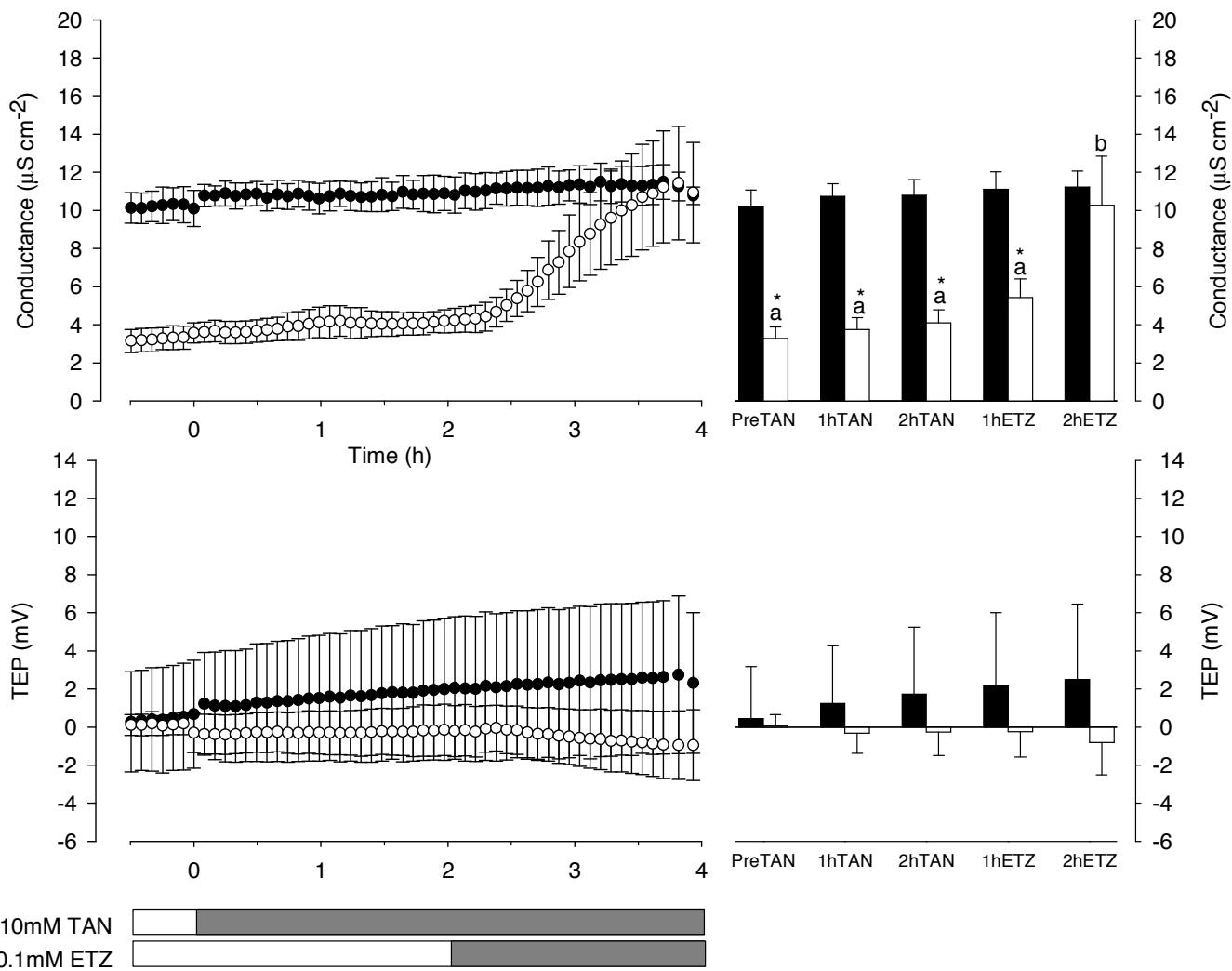
**Fig. S2.** Conductance ( $G$ ,  $\mu\text{Si cm}^{-2}$ ) and transepithelial potential (TEP, mV) of the weatherloach anterior (black) and posterior (white) intestine under control (Pre-TAN) and ammonia ( $10 \text{ mmol l}^{-1}$  TAN serosal) exposure conditions followed by serosal  $1 \text{ mmol l}^{-1}$  ouabain treatment. (A)  $G$  and (B) TEP measurements made over 5 min intervals. (C,D) The same data (respectively) averaged over hour periods. Bars with like characters are not significantly different ( $N=3$ ).



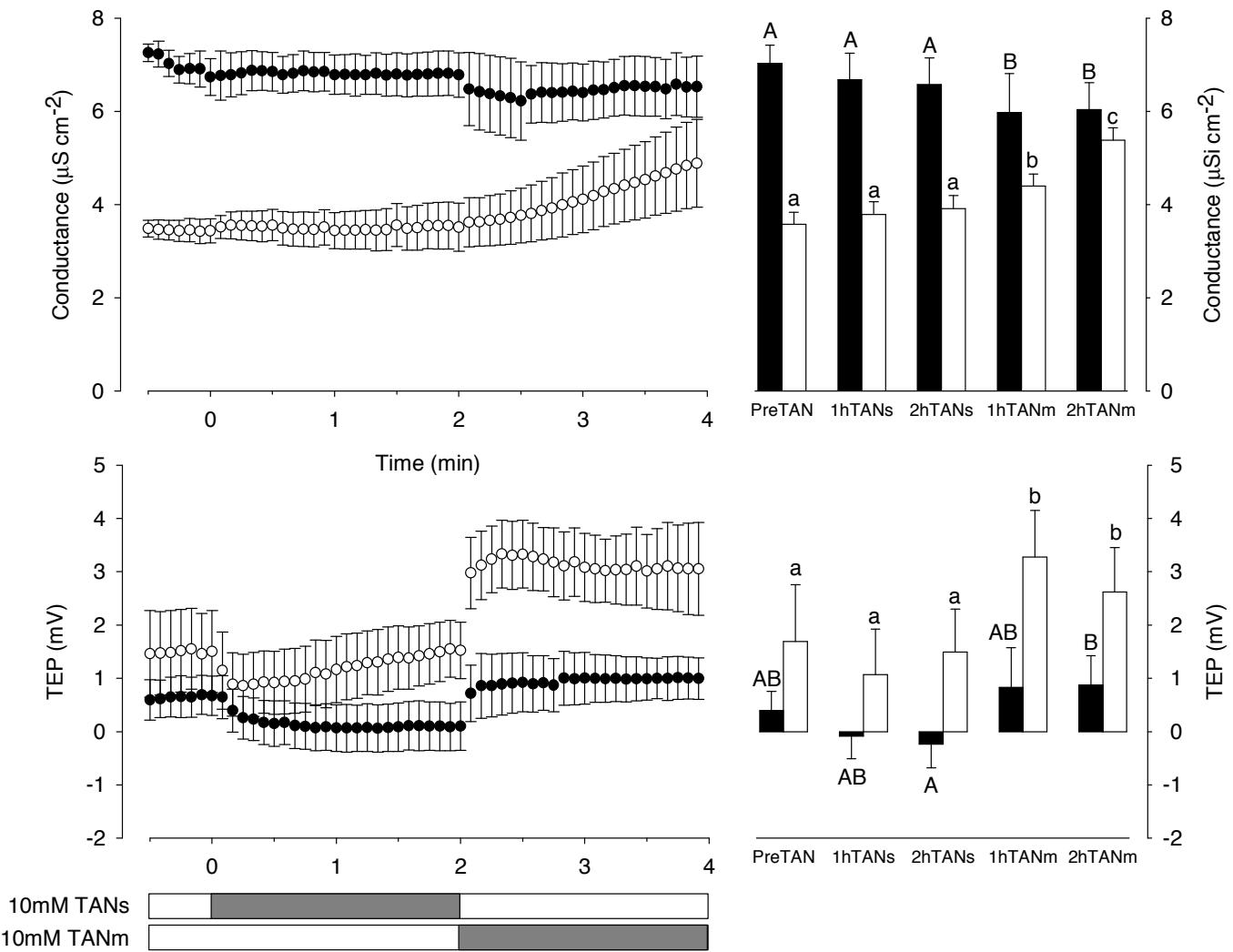
**Fig. S3.** Conductance ( $G$ ,  $\mu\text{Si cm}^{-2}$ ) and transepithelial potential (TEP, mV) of the weatherloach anterior (black) and posterior (white) intestine under control (Pre-TAN) and ammonia ( $10 \text{ mmol l}^{-1}$  TAN serosal) exposure conditions followed by mucosal  $0.1$  and  $1 \text{ mmol l}^{-1}$  DIDS treatment. (A)  $G$  and (B) TEP measurements made over  $5$  min intervals. (C,D) The same data (respectively) averaged over hour periods. Bars with like characters are not significantly different ( $N=4$ ).



**Fig. S4.** Conductance ( $G$ ,  $\mu\text{Si cm}^{-2}$ ) and transepithelial potential (TEP, mV) of the weatherloach anterior (black) and posterior (white) intestine under control (Pre-TAN) and ammonia ( $10 \text{ mmol l}^{-1}$  TAN serosal) exposure conditions followed by mucosal  $1 \text{ mmol l}^{-1}$  EIPA treatment. (A)  $G$  and (B) TEP measurements made over 5 min intervals. (C,D) The same data (respectively) averaged over hour periods. Bars with like characters are not significantly different ( $N=4$ ).



**Fig. S5.** Conductance ( $G$ ,  $\mu\text{Si cm}^{-2}$ ) and transepithelial potential (TEP, mV) of the weatherloach anterior (black) and posterior (white) intestine under control (Pre-TAN) and ammonia ( $10 \text{ mmol l}^{-1}$  TAN serosal) exposure conditions followed by  $1 \text{ mmol l}^{-1}$  ETZ treatment. (A)  $G$  and (B) TEP measurements made over 5 min intervals. (C,D) The same data (respectively) averaged over hour periods. Bars with like characters are not significantly different ( $N=4$ ).



**Fig. S6.** Conductance ( $G$ ,  $\mu\text{Si cm}^{-2}$ ) and transepithelial potential (TEP, mV) of the weatherloach anterior (black) and posterior (white) intestine under control (Pre-TAN) and serosal–mucosal ( $10 \text{ mmol l}^{-1}$  TAN serosal) and mucosal–serosal ( $10 \text{ mmol l}^{-1}$  TAN mucosal) ammonia gradient conditions. (A)  $G$  and (B) TEP measurements made over 5 minute intervals. (C,D) The same data (respectively) averaged over hour periods. Bars with like characters are not significantly different ( $N=4$ ).