





Legends for Supplementary Figures:

Supplementary Fig. 1: Summary of adrenaline-induced changes of short circuit current in tissues with intact mucosal muscular layer (NMRI mice). (■ closed black squares) and in tissues with mucosal muscular layers mechanical removed (▲ closed blue triangles). No significant differences are apparent (n=5).

Supplementary Fig. 2: Plasma aldosterone levels and amiloride-sensitive  $I_{sc}$  values in NMRI mice treated on control diet, control diet with ORALAV<sup>®</sup> (only aldo), high  $K^+$  diet and high  $K^+$  diet with ORALAV<sup>®</sup> in the drinking water (see Methods for details). Note that in animals on a high  $K^+$  diet with ORALAV<sup>®</sup> both, the plasma aldosterone and the indirect measure of functional aldosterone (amiloride-sensitive  $I_{sc}$ ) were suppressed with ORALAV<sup>®</sup>. \* indicates statistical significance between high  $K^+$  conditions and all other groups.

<b>Gene name</b>	<b>Sequence</b>	<b>Used concentration (nM)</b>
<b>KCNMA</b>		
Forward primer 5'–3'	CTCCAATGAAATGTACACAGAATATCT	300
Reverse primer 3'–5'	CTATCATCAGGAGCTTAAGCTTCACA	300
Probe	CCTTCGTGGGTCTGTCCTTCCCTACTGTT	200
<b>STREX</b>		
Forward primer 5'–3'	GCCAAAGAAGTTAAAAGGGCATT	500
Reverse primer 3'–5'	TGGCGGCTGCTCATCTTCAA	100
Probe	CTGCTCGTGCATGTCAGGCCGT	200
<b>ZERO</b>		
Forward primer 5'–3'	GCCAAAGAAGTTAAAAGGGCATT	500
Reverse primer 3'–5'	TGTTGGGCGAGTTCCTCATG	300
Probe	TGGCTGCAGGCGGCTTGAAGATGAGCAGC C	200
<b>CHIF</b>		
Forward primer 5'–3'	TGACCCAGTTGATAAAGACAGTCC	300
Reverse primer 3'–5'	CATTTGCACTTGCCACTCAGG	300
Probe	TTCCAGCGATGCACAGGAGCCCTC	200
<b><math>\beta</math>-actin</b>		
Forward primer 5'–3'	TTTGCAGCTCCTTCGTTGCC	100
Reverse primer 3'–5'	CACGATGGAGGGGAATACAGC	500
Probe	TCCACACCCGCCACCAGTTCGCC	300
<b>HPRT</b>		
Forward primer 5'–3'	CTTCCTCCTCAGACCGCTTTT	300
Reverse primer 3'–5'	TCTAGGTCATAACCTGGTTCATCA	300
Probe	CGCTAATCACGACGCTGGGACTGC	300

Suppl. tab. 1: Primer and probe sequences and concentrations for qPCR.

Mouse	n	Resting conditions			2-3 min after adrenaline (5 $\mu$ M bl)		
		$V_{te}$ (mV)	$R_{te}$ ( $\Omega$ cm <sup>2</sup> )	$I_{sc}$ ( $\mu$ A/cm <sup>2</sup> )	$V_{te}$ (mV)	$R_{te}$ ( $\Omega$ cm <sup>2</sup> )	$I_{sc}$ ( $\mu$ A/cm <sup>2</sup> )
<b>BK<sup>+/+</sup></b>	8	-1.1 $\pm$ 0.1	55.3 $\pm$ 5.3	-22.2 $\pm$ 3.4	-2.3 $\pm$ 0.3	45.0 $\pm$ 4.0	-52.0 $\pm$ 8.0
<b>BK<sup>-/-</sup></b>	6	-2.3 $\pm$ 0.5	61.1 $\pm$ 7.4	-42.1 $\pm$ 12.8	-4.2 $\pm$ 0.7	55.8 $\pm$ 7.1	-79.9 $\pm$ 15.1
<b>CFTR<sup>+/+</sup></b>	10	-1.5 $\pm$ 0.3	52.0 $\pm$ 6.3	-31.1 $\pm$ 5.1	-2.8 $\pm$ 0.3	43.8 $\pm$ 5.2	-59.0 $\pm$ 6.4
<b>CFTR<sup>-/-</sup></b>	11	0.4 $\pm$ 0.2	50.1 $\pm$ 7.0	8.0 $\pm$ 4.8	0.9 $\pm$ 0.2	47.0 $\pm$ 6.7	19.6 $\pm$ 5.5
<b>BK<sup>+/+</sup> High K<sup>+</sup></b>	8	0.6 $\pm$ 0.2	57.2 $\pm$ 4.7	11.1 $\pm$ 3.9	-0.7 $\pm$ 0.4	43.5 $\pm$ 4.8	-18.5 $\pm$ 13.3
<b>BK<sup>-/-</sup> High K<sup>+</sup></b>	8	-2.7 $\pm$ 1.0	56.2 $\pm$ 2.9	-50.4 $\pm$ 17.8	-5.4 $\pm$ 1.0	50.1 $\pm$ 3.5	-108.5 $\pm$ 26.7

Suppl. tab. 2: Basic electrical parameters measured in Ussing chamber in respective mouse colonic mucosa.