

Supplementary Table 1: Table showing the primer information used in this study

Gene Name	Primer Sequence	Product Length (bp)	Accession Number
<i>Gapdh</i>	F- GCCGATGCCCCATGTTTGTGA R-GGGTGGCAGTGATGGCATGGAC	178	NM_008084
<i>Pdgfra</i>	F-ATGACAGCAGGCAGGGCTTCAACG R-CGGCACAGGTCACCACGATCGTTT	195	NM_011058
<i>Myh11</i> (smMHC)	F-CAGCTGGAAGAGGCAGAGGAGG R-AACAAATGAAGCCTCGTTTCCTCTC	198	NM_013607
<i>c-kit</i>	F- CGCCTGCCGAAATGTATGACG R- GGTTCTCTGGGTTGGGGTTGC	162	NM_021099.2
<i>Uchl1</i> (PGP9.5)	F-CGATGGAGATTAACCCCGAGATG R-TTTTCATGCTGGGCCGTGAG	169	NM_011670
<i>Kcnn3</i> (SK3)	F- CTGCTGGTGTTCAGCATCTCTCTG R- GTCCCATAGCCAATGGAAAGGAAC	150	NM_080466.1
<i>P2ry1</i>	F-ACCGAGGTGCCTTGGTCGGT R-CCGGTCTTGGTCAGGGCACA	140	NM_008772
<i>Adra1a</i>	F-GCCCATGGGGTCCTTCTTCCCG R-ACTCCTGGCTGGAGCATGGG	122	NM_013461
<i>Adra1b</i>	F-AGTGCTCGGCTACTGGGTGC R-TGACCAGCGTGGGGTACTGC	155	NM_007416
<i>Adra1d</i>	F-CGTCCTGCCTCTGGGTTCTCT R-AGCAGGGGTAGATGAGCGGGT	116	NM_013460

Supplementary Table 2: Tables summarizing means \pm SE of 4 parameters of spontaneous contractions of circular muscle layers of mouse distal colon for 5 minutes after adding phenylephrine 10 nM-10 μ M to organ baths.

	AUC (mN·min)			
	10 nM	100 nM	1 μ M	10 μ M
WT (5)*	38.30 \pm 3.52	36.33 \pm 3.45	30.93 \pm 2.95	24.92 \pm 3.60
WT+RS (6)	81.50 \pm 11.47	79.22 \pm 11.37	77.44 \pm 11.30	71.36 \pm 10.92
WT+Apa (5)	85.13 \pm 13.88	84.47 \pm 13.38	80.83 \pm 13.32	74.73 \pm 11.44
<i>Adra1a</i> KO (6)	59.75 \pm 3.84	58.56 \pm 3.91	56.64 \pm 4.01	50.67 \pm 3.83
	Amplitude (mN)			
	10 nM	100 nM	1 μ M	10 μ M
WT (5)*	10.24 \pm 1.66	8.88 \pm 1.74	5.44 \pm 2.00	1.05 \pm 0.36
WT+RS (6)	15.50 \pm 0.89	15.40 \pm 0.99	15.30 \pm 1.29	12.66 \pm 1.06
WT+Apa (5)	14.53 \pm 2.59	14.30 \pm 2.58	12.50 \pm 2.37	10.12 \pm 2.33
<i>Adra1a</i> KO (6)	12.86 \pm 1.75	12.34 \pm 1.61	11.93 \pm 1.62	8.79 \pm 1.66
	Tone (mN)			
	10 nM	100 nM	1 μ M	10 μ M
WT (5)*	4.81 \pm 0.75	4.64 \pm 0.76	4.59 \pm 0.79	4.50 \pm 0.72
WT+RS (6)	9.77 \pm 2.22	9.61 \pm 2.17	9.38 \pm 2.19	9.40 \pm 2.13
WT+Apa (5)	10.63 \pm 2.23	10.70 \pm 2.31	10.92 \pm 2.18	11.02 \pm 2.44
<i>Adra1a</i> KO (6)	6.80 \pm 0.60	6.81 \pm 0.62	6.71 \pm 0.60	6.72 \pm 0.63
	Frequency (cont./min)			
	10 nM	100 nM	1 μ M	10 μ M
WT (5)*	2.44 \pm 0.39	2.36 \pm 0.36	2.24 \pm 0.33	1.84 \pm 0.27
WT+RS (6)	2.57 \pm 0.20	2.57 \pm 0.20	2.50 \pm 0.20	2.53 \pm 0.19
WT+Apa (5)	3.04 \pm 0.37	2.88 \pm 0.31	2.96 \pm 0.35	3.08 \pm 0.33
<i>Adra1a</i> KO (6)	2.43 \pm 0.06	2.40 \pm 0.05	2.37 \pm 0.03	2.43 \pm 0.12

Note: AUC: area under the curve; WT: wild type; RS: RS100329; Apa: apamin; KO: Knock out. *Numbers in () represent number of mice in each of protocols.

Supplementary Table 3: Table summarizing means \pm SE of Δ AUC by SNS in each condition.

	Δ AUC (mN•min) by SNS
ALMH (23)* in WT	-0.47 \pm 0.05
ALMH + RS (7) in WT	-0.68 \pm 0.10
ALMH + Pro (6) in WT	-0.49 \pm 0.10
ALMH + Yoh (5) in WT	-0.51 \pm 0.04
ALMH + RS + Pro (10) in WT	0.052 \pm 0.047
ALMH + Apa + Pro (5) in WT	0.27 \pm 0.15
ALMH (5) in <i>Adra1a</i> ^{-/-}	-0.29 \pm 0.11
ALMH + Pro (5) in <i>Adra1a</i> ^{-/-}	0.16 \pm 0.08
ALMH + Pro + Sp (6) in WT	-0.61 \pm 0.14
ALMH + Pro + Sp + 18 β -Gly (6) in WT	0.0074 \pm 0.014

Note: SNS: sympathetic nerve stimulation; WT: wild type; ALMH: atropine 1 μ M + L-NNA 100 μ M + MRS2500 1 μ M + hexamethonium 100 μ M; RS: RS100329 100nM; Pro: propranolol 10 μ M; Yoh: α -yohimbine 1 μ M; Apa: apamin 300nM; Sp: substance P *Numbers in () represent number of mice in each of protocols.

Supplementary Table 4: Table summarizing means \pm SE of ΔV by SNS in each condition.

	ΔV (mV) by SNS
ALMH (12)*	-19.24 \pm 0.58
ALMH + Praz (6)	-9.31 \pm 0.75
ALMH + Apa (6)	-9.61 \pm 1.03
ALMH + Praz + Pro (6)	-0.01 \pm 0.19
ALMH + Apa + Pro (6)	-0.018 \pm 0.082

Note: SNS: sympathetic nerve stimulation; ALMH: atropine 1 μ M + L-NNA 100 μ M + MRS2500 1 μ M + hexamethonium 100 μ M; Praz: prazosin 1 μ M; Apa: apamin 300nM; Pro: propranolol 10 μ M *Numbers in () represent number of mice in each of protocols.

Supplementary Table 5: Table summarizing means \pm SE of amplitude of induced CMMC in each condition.

	Amplitude (mN)		
	Proximal	Mid	Distal
Control without SNS 2Hz (5)*	17.58 \pm 3.51	29.42 \pm 2.03	28.86 \pm 6.27
Control with SNS 2Hz (5)	16.54 \pm 1.96	1.06 \pm 0.34	1.90 \pm 0.66
RS without SNS 2Hz(5)	15.42 \pm 1.74	21.48 \pm 3.19	9.80 \pm 2.62
RS with SNS 2Hz(5)	17.22 \pm 1.44	17.39 \pm 3.79	7.88 \pm 1.93

Note: SNS: sympathetic nerve stimulation; RS: RS100329; *Numbers in () represent number of mice in each of protocols.

Supplementary Table 6: Table summarizing means \pm SE of amplitude of spontaneous CMMC in each condition.

	Amplitude (mN)		
	Proximal	Mid	Distal
WT without SNS 2Hz (9)*	20.01 \pm 2.35	22.94 \pm 3.71	29.13 \pm 6.39
WT with SNS 2Hz (9)	16.71 \pm 1.73	2.26 \pm 0.83	2.42 \pm 0.53
<i>Adra1a</i> KO without SNS 2Hz (8)	21.26 \pm 2.22	23.54 \pm 4.46	4.56 \pm 0.70
<i>Adra1a</i> KO with SNS 2Hz (8)	22.70 \pm 2.54	31.08 \pm 5.41	4.74 \pm 0.58
WT without SNS 5Hz (10)*	18.31 \pm 1.75	28.36 \pm 2.84	19.68 \pm 3.31
WT with SNS 5Hz (10)*	15.40 \pm 1.61	2.17 \pm 0.56	3.30 \pm 0.92
<i>Adra1a</i> KO without SNS 5Hz(7)	21.40 \pm 2.63	25.33 \pm 5.22	7.81 \pm 1.47
<i>Adra1a</i> KO with SNS 5Hz(7)	21.16 \pm 2.75	22.16 \pm 3.69	5.73 \pm 1.33

Note: SNS: sympathetic nerve stimulation; WT: wild type; KO: Knock out. *Numbers in () represent number of mice in each of protocols.