

Supplementary table 1: The electrophysiological results of transgenic mice used in 3.1. In the first row of each genotype either the results are shown as median with corresponding 25/75 percentiles or as mean \pm SEM. In the second row the first number shows the animal number, the second number shows the amount of cells.

Genotype	C _M (pF)	V _R (mV)	AP Amplitude (mV)	APD ₃₀ (ms)	APD ₅₀ (ms)	APD ₇₀ (ms)	APD ₉₀ (ms)	I _{toC} (pA/pF)
Gq^{fl} G11⁻ Cre⁺ Tam⁻	145.4 (128.8/166.4)	-73.2 \pm 0.7	101.1 \pm 4.0	1.5 (1.2/1.9)	2.4 (2.0/3.3)	4.1 (3.3/5.6)	7.9 (6.4/15.2)	23.8 \pm 2.6
	(3/22)	(3/16)	(3/16)	(3/16)	(3/16)	(3/16)	(3/16)	(3/20)
Gq^{fl} G11⁻ Cre⁺ Tam⁺	128.2 (96.9/155.1)	-73.4 \pm 0.5	114.5 \pm 1.6	2.0 (1.2/3.3)	4.5 (2.1/7.7)	8.1 (3.8/14.3)	28.1 (8.8/53.6)	16.6 \pm 2.2
	(5/45)	(5/31)	(5/31)	(5/31)	(5/31)	(5/31)	(5/31)	(5/24)
Gq^{wt} G11^{wt} Cre⁻ Tam⁻	177.1 (149.6/219.5)	-73.0 \pm 0.5	115.2 \pm 1.7	1.9 (1.4/3.6)	3.9 (2.7/9.3)	7.2 (5.0/15.2)	19.4 (12.9/43.1)	19.3 \pm 2.0
	(4/33)	(4/28)	(4/27)	(4/27)	(4/27)	(4/27)	(4/27)	(4/23)
Gq^{wt} G11^{wt} Cre⁻ Tam⁺	195.0 (166.5/297.4)	-73.7 \pm 0.7	115.0 \pm 1.3	1.7 (1.1/2.3)	3.9 (2.02/5.6)	6.8 (3.6/9.6)	40.2 (10.2/58.5)	25.0 \pm 3.5
	(3/25)	(3/21)	(3/19)	(3/19)	(3/19)	(3/19)	(3/19)	(3/20)
Gq^{fl} G11⁻ Cre⁻ Tam⁻	128.3 (102.3/166.3)	-73.7 \pm 0.5	110.2 \pm 2.7	1.1 (1.0/1.2)	1.8 (1.5/2.2)	3.0 (2.6/3.5)	6.0 (5.2/7.3)	36.3 \pm 3.0
	(3/27)	(3/22)	(3/21)	(3/20)	(3/20)	(3/20)	(3/20)	(3/21)
Gq^{fl} G11⁻ Cre⁻ Tam⁺	123.0 (110.1/195.8)	-72.8 \pm 0.6	110.4 \pm 2.5	1.8 (1.4/2.8)	3.0 (2.4/7.3)	5.5 (4.2/10.7)	18.0 (8.7/33.6)	23.2 \pm 3.5
	(3/22)	(3/19)	(3/19)	(3/18)	(3/18)	(3/18)	(3/18)	(3/19)
Gq^{wt} G11^{wt} Cre⁺ Tam⁻	176.9 (138.7/192.4)	-71.8 \pm 0.4	111.2 \pm 1.9	2.1 (1.6/2.4)	3.8 (3.0/5.2)	6.8 (5.4/9.7)	16.2 (11.3/25.6)	16.5 \pm 1.8
	(4/30)	(4/23)	(4/23)	(4/22)	(4/22)	(4/22)	(4/22)	(4/21)
Gq^{fl} G11^{wt} Cre⁻ Tam⁺	170.9 (140.7/215.6)	-72.0 \pm 0.5	103.4 \pm 2.3	2.4 (1.4/4.0)	4.4 (2.6/7.7)	7.0 (4.3/12.4)	24.2 (9.9/64.4)	16.7 \pm 2.0
	(4/32)	(4/24)	(4/23)	(4/23)	(4/23)	(4/23)	(4/23)	(4/20)
Gq^{fl} G11^{wt} Cre⁺ Tam⁺	183.8 (168.5/239.8)	-75.6 \pm 0.5	118.1 \pm 2.5	2.6 (1.2/3.6)	5 (2/6.8)	9.7 (3.9/16.5)	41.5 (21.1/85.8)	20.8 \pm 3.5
	(3/22)	(3/22)	(3/19)	(3/19)	(3/19)	(3/19)	(3/19)	(3/17)
Gq^{wt} G11^{wt} Cre⁻ Mig⁺	162.2 (143.3/184.7)	-72.6 \pm 1.4	117.2 (92.1/125.6)	1.9 \pm 0.3	3.9 \pm 1	7.2 \pm 1.7	27.6 \pm 8.3	26.1 \pm 4
	17/2	9/2	8/2	8/2	8/2	8/2	8/2	11/2
Gq^{fl} G11⁻ Cre⁺ Mig⁺	140.3 (123.7/164.3)	-72.3 (-74.5/-70.8)	108.8 \pm 2.5	1.5 (1.2/1.9)	2.9 (2.2/3.9)	5.05 (3.7/6.9)	11.8 (7.3/20.2)	25.5 \pm 2.8
	42/4	33/4	33/4	34/4	34/4	34/4	34/4	17/4

Supplementary table 2: The electrophysiological results of hyperaldosteronism described in 3.2. In the first row of each genotype the results are shown either as median with corresponding 25/75 percentiles or as mean \pm SEM. In the second row the first number shows the animal number and the second number shows the cell number.

Genotype	C_m	V_R	AP amplitude	TTP	APD30	APD50	APD70	APD90	I_{toc}
Gq^{fl} G11^{wt} Cre⁻ Tam⁺	207.7 (164.9/252)	-74.5 (-75.5/-71.2)	107.5 (96.1/121.9)	7.2 (5.7/12.2)	2. (1.2/7.6)	5.7 (2.8/15.3)	14 (8.1/80.7)	116.1 (55.7/168.9)	20.3 \pm 1.9
	41/4	36/4	16/4	29/4	15/4	15/4	15/4	15/4	29/4
Gq^{fl} G11^{wt} Cre⁻ Tam⁺ (Aldo)	192.7 (161.6/229.2)	-76.2 (-77.7/-74.7)	123.3 (115.5/127.7)	5.7 (5.1/6.2)	0.9 (0.7/2.3)	2.2 (1.5/7.2)	5.1 (3.2/15.8)	75.8 (44.8/110.4)	30.4 \pm 2.9
	55/6	54/6	16/6	36/6	15/6	15/6	15/6	15/6	36/6
Gq^{fl} G11^{wt} Cre⁺ Tam⁺	188.2 (155.1/227.3)	-75.9 (-77.7/-73.5)	111 (107.9/124.5)	6.1 (5.9/6.4)	1.5 (1.2/3.9)	5.8 (3.4/15.4)	13.5 (7.6/42.3)	100.5 (76.9/125.7)	21.4 \pm 3
	38/4	41/4	15/4	22/4	22/4	22/4	22/4	22/4	22/4
Gq^{fl} G11^{wt} Cre⁺ Tam⁺ (Aldo)	192.1 (158.6/235)	-75.4 (-77.6/-73.2)	101.3 (69.3/130.8)	6.1 (5.2/8.1)	2.6 (2.1/12.4)	7.8 (4.9/22.8)	23.1 (16.0/51.4)	93 (64.8/151.8)	25.7 \pm 2.1
	57/4	50/4	13/4	28/4	28/4	28/4	28/4	28/4	28/4
Gq^{fl} G11⁻ Cre⁻ Tam⁺	205.9 (176.3/287)	-73.4 (-76.3/-71.1)	105.7 (90.3/113.3)	8.4 (6.7/9.2)	1.0 (0.7/1.4)	1.9 (1.4/3.6)	3.6 (2.8/8.6)	66.9 (33.5/103.8)	42.8 \pm 3.6
	33/3	22/3	18/3	24/3	24/3	24/3	24/3	24/3	24/3
Gq^{fl} G11⁻ Cre⁻ Tam⁺ (Aldo)	172.8 (147.1/205.9)	-75.6 (-77.3/-73.8)	103.7 (88.2/118.7)	5.9 (4.9/6.9)	1.1 (0.6/6.9)	3.2 (1.3/17.4)	9.7 (2.9/59.2)	84.2 (39.3/137.9)	33.6 \pm 4.3
	24/4	23/4	15/4	16/4	14/4	14/4	14/4	14/4	16/4
Gq^{fl} G11⁻ Cre⁺ Tam⁺	190.3 (132.1/238)	-75.8 (-77.5/-73.7)	109.8 (91.9/116.2)	6.4 (5.5/7.3)	0.7 (0.5/1)	1.4 (1/1.9)	2.7 (1.8/3.9)	28.7 (16.0/94)	46.5 \pm 5.2
	38/3	20/3	14/3	15/3	14/3	14/3	14/3	14/3	15/3
Gq^{fl} G11⁻ Cre⁺ Tam⁺ (Aldo)	134.5 (111.7/167.1)	-75.9 (-78.9/-73.3)	115.1 (99/126.2)	5.2 (4.8/6.3)	1.4 (0.7/4.3)	3.6 (1.5/10.7)	8.2 (3.1/30.3)	95 (32.8/146.4)	28.4 \pm 5.1
	23/4	22/4	18/4	16/4	18/4	18/4	18/4	18/4	16/4

Supplementary table 3: The results of $I_{Ca,L}$ and gain measurements in I/E mice described in 3.3. In the first row of each parameter the results are shown either as mean \pm SEM or as median with corresponding 25/75 percentiles at 0 mV test potential. In the second row the first number shows the animal number and the second number shows the cell number.

Parameter	Ctr	I/E
$I_{Ca,L}$	-2.73	-1.84
	18/3	23/3
C_M	185.1 \pm 11.6	194.1 \pm 12.0
	20/3	24/3
Gain	0.10 \pm 0.02	0.43 \pm 0.11
	18/3	19/3
τ_1	22.6 \pm 2.3	17.2 \pm 3.8
	17/3	14/3
τ_2	72.8 (57.9/84.5)	86.9 (61.5/104.1)
	13/3	16/3
$\int I_{Ca,L}$	0.088 \pm 0.008	0.073 \pm 0.007
	17/3	18/3

Supplementary table 4: The results of $I_{Ca,L}$ and gain measurements in RacET mice described in 3.4. In the first row of each parameter the results are shown either as mean \pm SEM or as median with corresponding 25/75 percentiles at 0 mV test potential. In the second row the first number shows the animal number and the second number shows the cell number.

Parameter	WT	RacET
$I_{Ca,L}$	-4.41	-5.25
	13/3	8/3
Gain	0.08 ± 0.02	0.28 ± 0.1
	14/3	17/3
τ_1	20.9 ± 1.2	28.4 ± 2
	14/3	21/3
τ_2	73.9 (61.3/109.1)	117.8 (78.3/260.7)
	14/3	18/3
$\int I_{Ca,L}$	23.2 ± 1.5	13.6 ± 1.6
	12/3	20/3

Supplementary table 5: The electrophysiological results of application of 40 μ M CytoD culture supplement described in 3.5. In the first row of each parameter the results are shown as mean \pm SEM. In the second row the first number shows the animal number and the second number shows the cell number.

Parameter	DIV0	DIV0	DIV3	DIV3
C_m	137.9 \pm 3.2	139.5 \pm 9.6	102.2 \pm 6.6	134.4 \pm 8.2
	9/3	17/3	14/3	21/3
V_R	-74.5 \pm 0.8	-72.0 \pm 0.8	-71.4 \pm 0.6	-73.9 \pm 0.5
	9/3	16/3	16/3	23/3
AP amplitude	99.6 \pm 6.5	101.0 \pm 4.9	91.3 \pm 4.3	106.1 \pm 2.5
	8/3	14/3	10/3	21/3
APD ₃₀	9.3 \pm 2.3	8.6 \pm 1.7	12.2 \pm 4.6	22.3 \pm 5.0
	8/3	12/3	12/3	9/3
APD ₅₀	11.2 \pm 1.8	8.9 \pm 1.2	12 \pm 2.2	39.8 \pm 9.4
	8/3	12/3	12/3	9/3
APD ₇₀	26.3 \pm 6.4	20.7 \pm 4.0	32.7 \pm 10.5	103.4 \pm 24.9
	8/3	12/3	12/3	9/3
APD ₉₀	33.4 \pm 5.5	37.1 \pm 5.7	40.6 \pm 6.7	198.6 \pm 51.1
	8/3	12/3	12/3	9/3

Supplementary table 6: The electrophysiological results of application of 0.5 μ M CytoD culture supplement described in 3.5. In the first row of each parameter the results are shown as mean \pm SEM. In the second row the first number shows the animal number and the second number shows the cell number.

Parameter	DIV0	DIV0	DIV3	DIV3
C_m	202.8 \pm 17.8	199.0 \pm 14.5	117.2 \pm 6.1	169.5 \pm 11.7
	10/3	10/3	11/3	25/3
V_R	-74.0 \pm 0.6	-71.7 \pm 0.9	-72.2 \pm 1.0	-74.6 \pm 0.6
	20/3	10/3	10/3	10/3
AP amplitude	103.1 \pm 4.2	102.6 \pm 4.1	80.2 \pm 1.8	100.3 \pm 3.5
	18/3	12/3	14/3	10/3
APD ₃₀	10.5 \pm 1.8	9.6 \pm 1.6	14.2 \pm 4.6	11.0 \pm 3.5
	13/3	14/3	7/3	7/3
APD ₅₀	20.4 \pm 3.4	30.6 \pm 8.8	18.4 \pm 2.9	18.5 \pm 5.3
	13/3	14/3	7/3	7/3
APD ₇₀	30.5 \pm 4.9	27.8 \pm 4.6	41.2 \pm 12.7	26.1 \pm 6.7
	13/3	14/3	7/3	7/3
APD ₉₀	61.8 \pm 9.5	149.6 \pm 28.2	47.9 \pm 8.3	70.2 \pm 18.3
	13/3	14/3	7/3	7/3