

Online Supplement Figures

Fig. S-1 A. AC isoform transcripts and corresponding molecular weight. B. Average $1/\Delta\text{CT}$ for each AC isoform in brain, SAN tissue and isolated SANC. * - difference in the AC expression levels between SAN vs. same transcript in SANC (ND – not determined; * - $P < 0.001$; ** - $P < 0.005$ (t-test)).

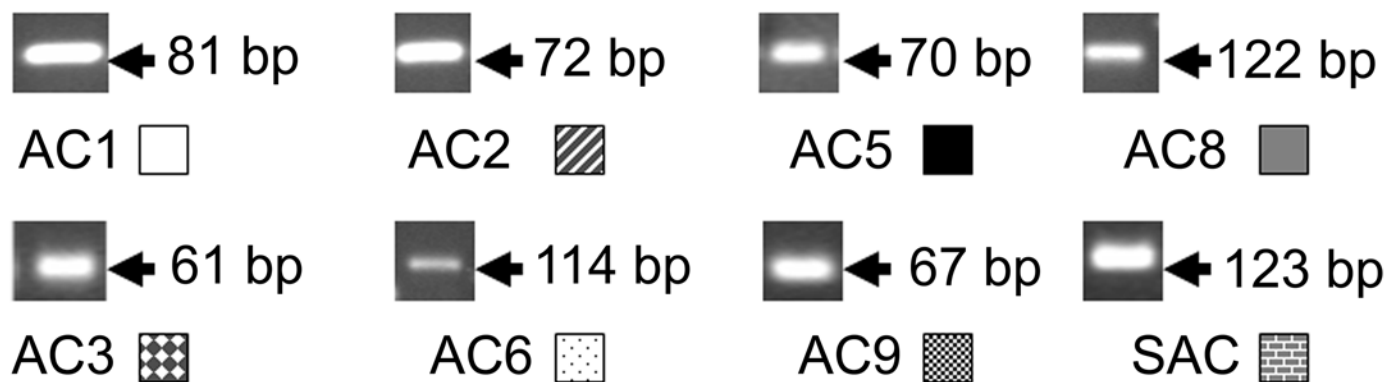
Fig. S-2 A,B. Serially diluted immunodot blots of sucrose gradient fractions of intact SAN tissue for caveolin, GM1 and AC Isoforms. Each fraction was diluted, as indicated, prior to incubation on nitrocellulose, blocked and probed with the indicated antibody as described in methods.

Fig. S-3. CsCl 2 mM completely blocks I_f current measured in isolated SANC voltage clamped in a whole cell mode configuration by applying a 10 mV step protocol starting at -100 mV and ending at +40 mV for 500 ms from a holding potential of -40 mV.

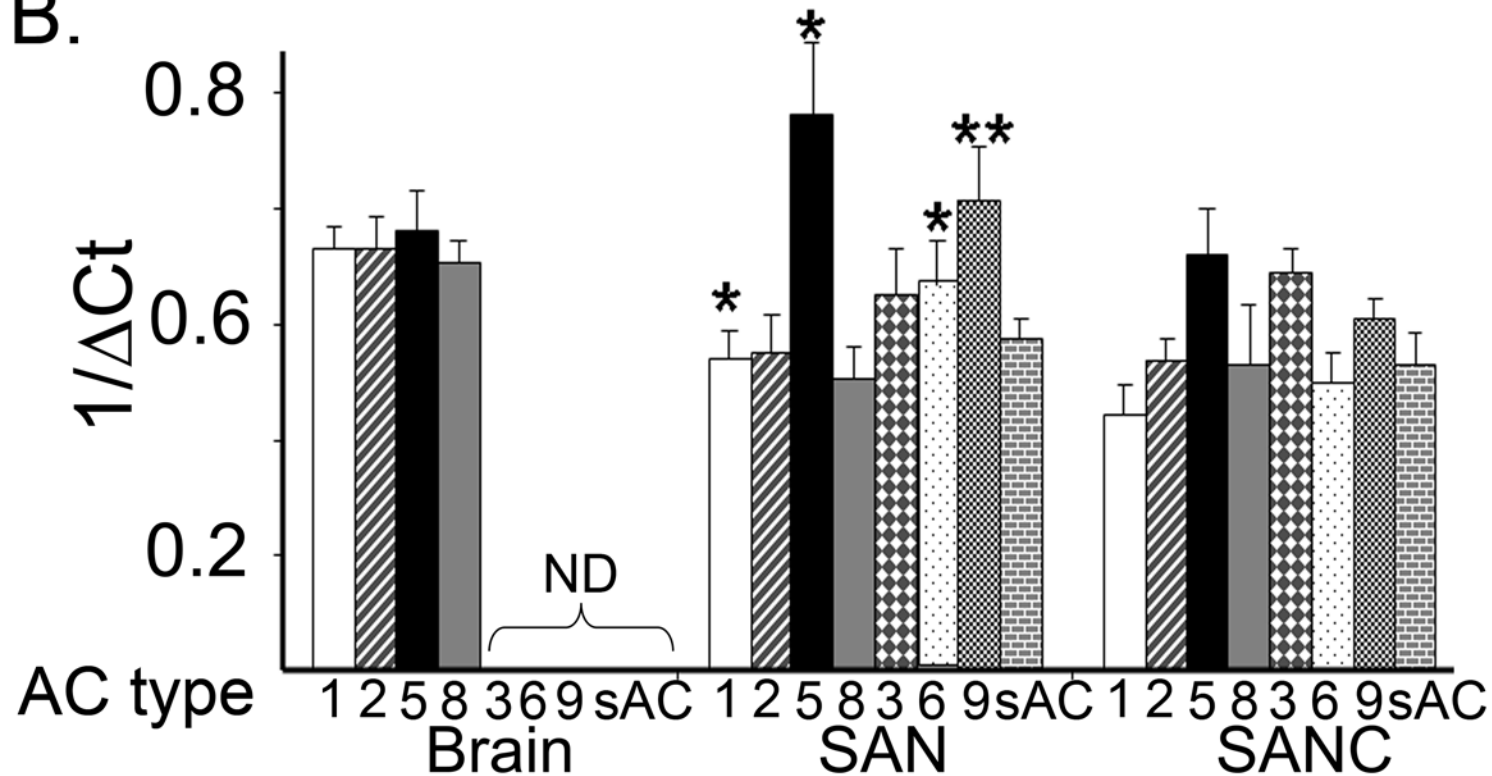
Table S-1. The list of primers for adenylate cyclases studied by q-RT-PCR in rabbits.

Table S-2. Serial dilutions dot immunoassays of sucrose gradient fractionated sinoatrial node tissue.

A.



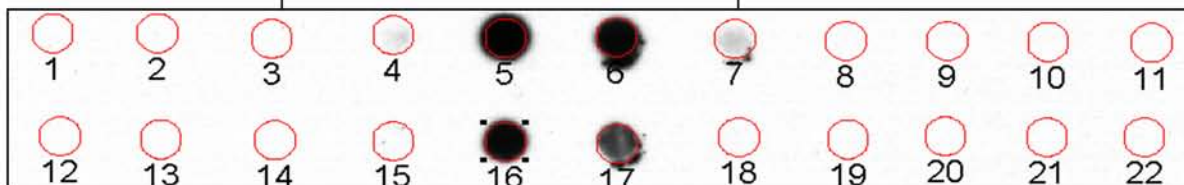
B.



GM1 in SAN Tissue

Dilutions:

1:5



1:10

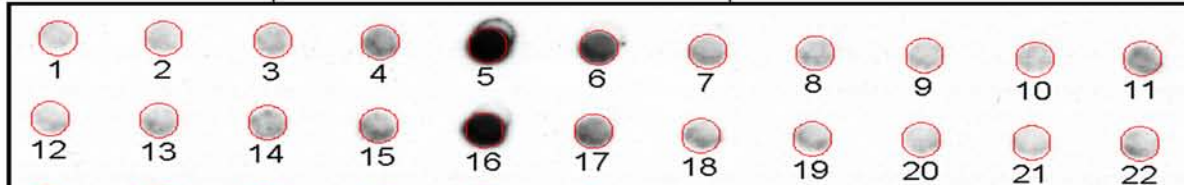


Fractions: 1 2 3 4 5 6 7 8 9 10 11

Cav3 in SAN Tissue

Dilutions:

1:5



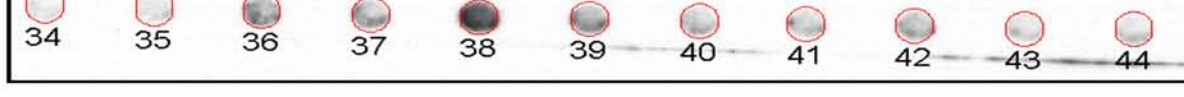
1:10



1:20



1:40

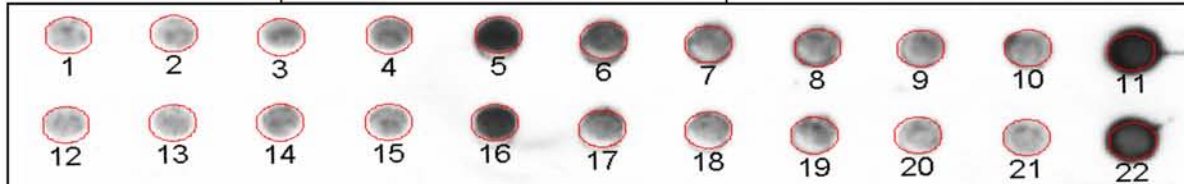


Fractions: 1 2 3 4 5 6 7 8 9 10 11

AC1 in SAN Tissue

Dilutions:

1:5



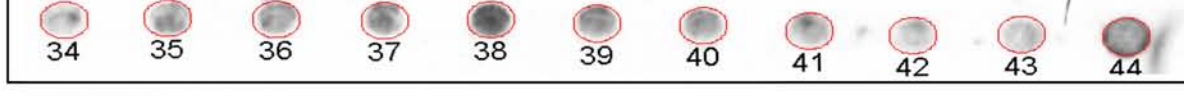
1:10



1:20



1:40

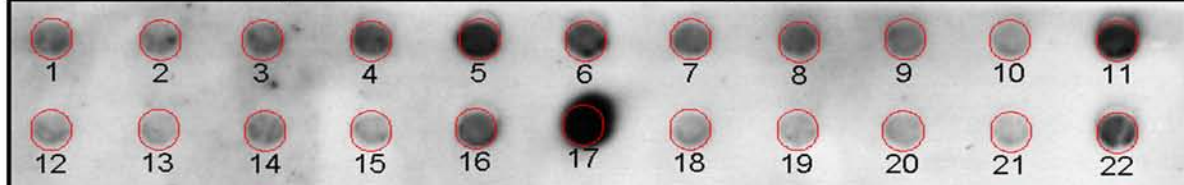


Fractions: 1 2 3 4 5 6 7 8 9 10 11

AC8 in SAN Tissue

Dilutions:

1:5



1:10



1:20



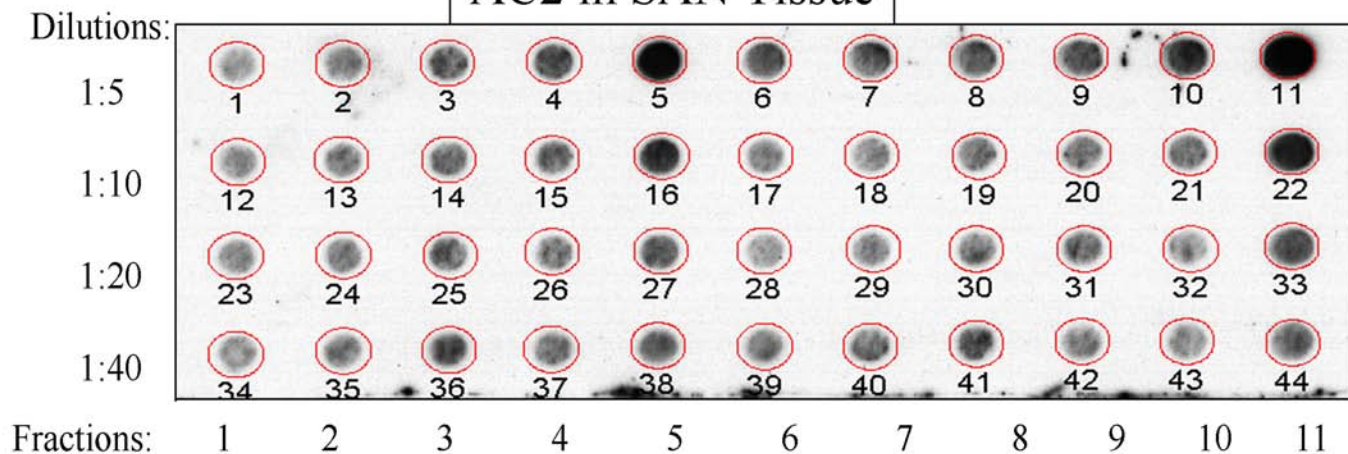
1:40



Fractions: 1 2 3 4 5 6 7 8 9 10 11

B.

AC2 in SAN Tissue



AC5/6 in SAN Tissue

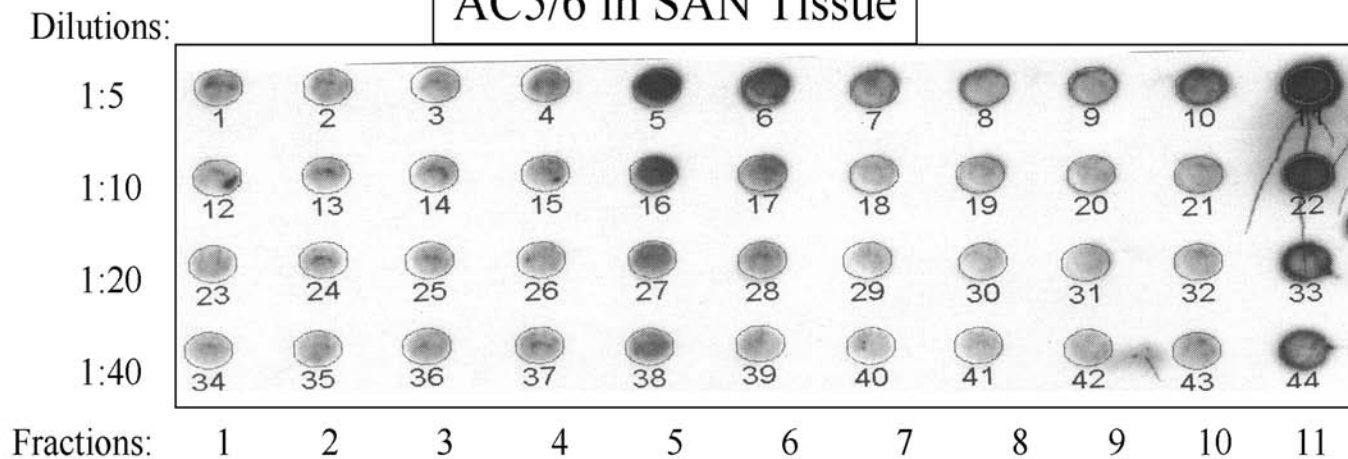
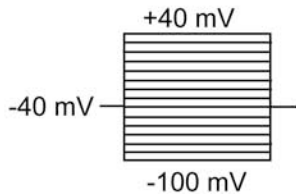
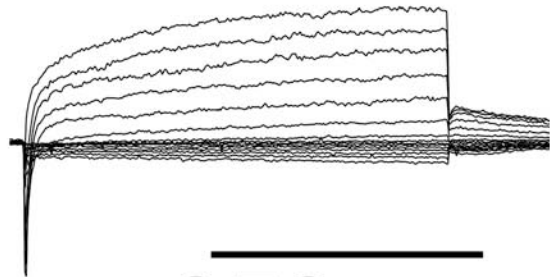
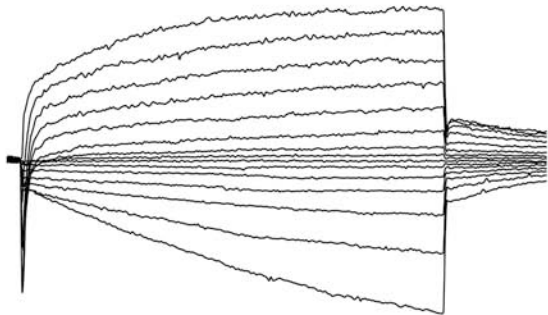


Fig. S-3

Control

CsCl, 2 mM

500 pA



250 ms

Table S-1. The list of primers for adenylate cyclases studied by q-RT-PCR in rabbits.

Genes and accession #	Comments	Primers	Amplicon size (bp)
Adcy1	Adenylate cyclase 1	5'- TGGCAGCTGCTGCTGGTCAC-3' 5'-CCACCGCGAGCCCGAAGC-3'	84
Adcy2	Adenylate cyclase 2	5'- TACAGCCAGGTCCTGTTTCA-3' 5'-CCCATGGTCTTCAGGTCTTT -3'	72
Adcy3	Adenylate cyclase 3	5'-GACCAGCAGCAGTTCAACAC -3' 5'-GCAAACAGGATGCTGACATT -3'	61
Adcy4	Adenylate cyclase 4	5'- ATCAGGAAACTTCGGGTAGC-3' 5'-ATATGGTTGGCCAATGTGAC -3'	143
Adcy5 Z29371	Adenylate cyclase 5	5'-CATGTTTCATGTGCAACTCCA -3' 5'- ATGGATCACGCTGATGTTGT-3'	70
Adcy6	Adenylate cyclase 6	5'- GCTGCGGAGAATCACTGTC -3' 5'- TACCCCATCTCCACACAG -3'	114
Adcy8	Adenylate cyclase 8	5'-TGGCTGCCCTAACAAGAAAT -3' 5'-ACTCCGCAAGTCGATGGTAT -3'	122
Adcy9	Adenylate cyclase 9	5'- GGTCAGAGAGCCAAGGAGTC -3' 5'- CAATGACCTCAAAGCCAGAA -3'	67
Sac AY212921	Soluble adenylate cyclase	5'- CGGTGGTCATCAAATGTAGC -3' 5'- CAAAGACCAGCATGGAGATG -3'	123
18S RNA	18S ribosomal RNA	5'- CGCGGTTCTATTTTGTGGTTT -3' 5'- GCGCCGGTCCAAGAATTT -3'	103

Table S-2 Serial dilutions dot immunoassays of sucrose gradient fractionated sinoatrial node tissue

Markers											
GM1	Fraction No										
dilution	1	2	3	4	5	6	7	8	9	10	11
1:5	1004916	1117906	1115364	4358096	76990260	73506088	10323656	1223268	1252658	1228214	1226924
1:10	943118	1001734	985500	1867122	72178085	52923632	1329378	1082952	1228078	1196430	1204782
Cav 3	Fraction No										
dilution	1	2	3	4	5	6	7	8	9	10	11
1:5	8736576	10653762	14340976	27604197	77341748	53032558	19368172	15202408	12872722	12658780	22847345
1:10	10662154	14850806	19178894	23547755	73272374	33806052	18028376	15205902	11503816	10076030	15188648
1:20	14463823	15282844	19840662	22047644	62041562	29405703	19041653	16229476	22050063	9090148	11484846
1:40	5755300	7273886	24054097	19486050	47607195	23463425	13749712	13432195	17326430	9592856	10103988
AC 1	Fraction No										
dilution	1	2	3	4	5	6	7	8	9	10	11
1:5	20996593	22290170	26767785	38248444	77353396	60677976	47082152	47357079	41616003	42949452	91413992
1:10	20717284	20843816	28957491	28217096	69374777	41929915	34040805	37329133	28982894	29003139	82410546
1:20	17105482	18760772	25299732	27183652	51998669	34851775	30456226	33833503	27663744	26595678	64508808
1:40	17639393	25650062	25808352	28347966	46152364	30136105	25824728	24330530	15765460	17332682	44568947
AC 8	Fraction No										
dilution	1	2	3	4	5	6	7	8	9	10	11
1:5	54683752	49569445	56994635	63815253	81613201	68824218	54876245	60256779	54360263	39067029	80712164
1:10	38600053	33693770	46446296	31541488	62259069	97166772	35064888	29198174	31219296	24404798	58271295
1:20	36150846	34411446	54693733	27585790	52884549	27185970	25905202	35444498	25875098	13048604	23035940
1:40	36358020	23938200	42057381	25861290	38834211	24095440	36994859	44962392	33300664	12291896	9729742
AC 2	Fraction No										
dilution	1	2	3	4	5	6	7	8	9	10	11
1:5	7045082	10848698	14992051	18016947	42858015	18776863	18171290	17196569	18495989	26101008	50641657
1:10	8251942	10193342	12227502	12242160	24824218	9750784	8750766	10837160	10902922	12434134	32568652
1:20	9211106	10397672	13087936	10497630	15847356	7452174	9038890	10646170	11749471	8797580	19933384
1:40	8967706	10690906	16148290	11574736	14406354	11367578	12144758	14946819	10377620	8964632	15066322
AC 5/6	Fraction No										
dilution	1	2	3	4	5	6	7	8	9	10	11
1:5	50334686	42077399	37285423	50480797	91981838	84418127	65557102	57537137	61625809	80416618	102172020
1:10	43840684	37238499	38299625	43616024	77859218	63512921	37773042	41815195	40363587	49684673	98424306
1:20	36079159	33422524	35703738	39035975	60620224	51592907	27987083	28269519	34326649	40108650	86000150
1:40	33082006	37331354	41935292	45324297	58025951	38249241	28146818	29177626	38841094	45429343	79688770