

Figure S1A

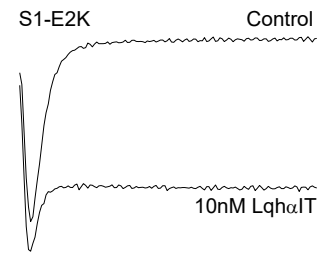
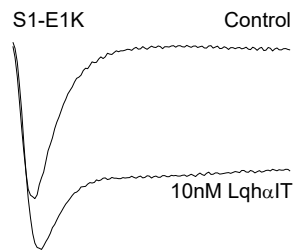
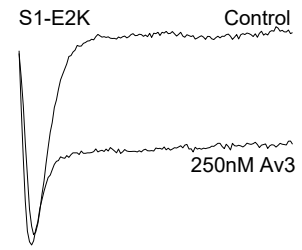
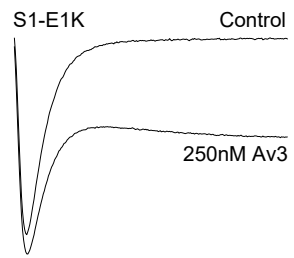


Figure S1B

Conservation																																																					
NaChBac	19	I	V	N	H	R	A	F	T	F	T	V	I	A	L	I	L	F	N	A	L	I	V	G	I	E	-	-	-	T	Y	P	R	I	Y	A	D	H	K	W	L	F	Y	R	I	D	L	V	L	L	W	65	
NavAb	8	I	V	E	S	S	F	F	T	K	F	I	I	Y	L	I	V	L	N	G	I	T	M	G	L	E	T	S	K	T	F	M	Q	S	F	G	V	Y	T	T	L	F	-	-	-	N	Q	I	V	I	T	54	
Nav1.4-HS DIII	1027	I	V	E	H	N	W	F	E	T	F	I	V	F	M	I	L	L	S	S	G	A	L	A	F	E	-	-	-	D	I	Y	I	E	Q	R	R	V	I	R	T	I	L	E	Y	A	D	K	V	F	T	Y	1074
Nav1.7-HS DIII	1088	I	V	E	H	S	W	F	E	S	F	I	V	L	M	I	L	L	S	S	G	A	L	A	F	E	-	-	-	D	I	Y	I	E	R	K	K	T	I	K	I	I	L	E	Y	A	D	K	I	F	T	Y	1135
Nav1.2-Rat DIII	1204	I	V	E	H	N	W	F	E	T	F	I	V	F	M	I	L	L	S	S	G	A	L	A	F	E	-	-	-	D	I	Y	I	E	Q	R	K	T	I	K	T	M	L	E	Y	A	D	K	V	F	T	Y	1251
BgNa_v1-1a DIII	1266	L	I	E	N	K	Y	F	E	T	A	V	I	T	M	I	L	L	S	S	L	A	L	A	L	E	-	-	-	D	V	H	L	P	H	R	P	I	L	Q	D	I	L	Y	Y	M	D	R	I	F	T	V	1313

S1

Conservation																																																					
NaChBac	66	I	F	T	I	E	I	A	M	R	F	L	A	S	N	P	K	S	A	F	F	R	S	S	W	N	W	F	D	F	L	I	V	A	A	G	H	I	-	-	-	-	-	-	-	-	-	F	A	G	A	Q	107
NavAb	55	I	F	T	I	E	I	I	L	R	I	-	-	Y	V	H	R	I	S	F	F	K	D	P	W	S	L	F	D	F	F	V	V	A	I	S	L	V	-	-	-	-	-	-	-	-	-	P	T	S	S	93	
Nav1.4-HS DIII	1075	I	F	I	M	E	M	L	L	K	W	V	A	Y	G	F	K	V	-	Y	F	T	N	A	W	C	W	L	D	F	L	I	V	D	V	S	I	I	S	L	V	A	N	W	L	G	Y	S	E	L	G	1123	
Nav1.7-HS DIII	1136	I	F	I	L	E	M	L	L	K	W	I	A	Y	G	Y	K	T	-	Y	F	T	N	A	W	C	W	L	D	F	L	I	V	D	V	S	L	V	T	L	V	A	N	T	L	G	Y	S	D	L	G	1184	
Nav1.2-Rat DIII	1252	I	F	I	L	E	M	L	L	K	W	V	A	Y	G	F	Q	M	-	Y	F	T	N	A	W	C	W	L	D	F	L	I	V	D	V	S	L	V	S	L	T	A	N	A	L	G	Y	S	E	L	G	1300	
BgNa_v1-1a DIII	1314	I	F	F	I	E	M	L	I	K	W	L	A	L	G	F	K	K	-	Y	F	T	N	A	W	C	W	L	D	F	I	I	V	M	V	S	L	I	N	F	V	A	S	L	V	G	A	G	G	I	Q	1362	

S2

S3

Conservation																						
NaChBac	108	F	V	T	V	L	R	I	L	R	V	L	R	V	L	R	A	I	S	V	V	127
NavAb	94	G	F	E	I	L	R	V	L	R	V	L	R	L	F	R	L	V	T	A	V	113
Nav1.4-HS DIII	1124	P	I	K	S	L	R	T	L	R	A	L	R	P	L	R	A	L	S	R	F	1143
Nav1.7-HS DIII	1185	P	I	K	S	L	R	T	L	R	A	L	R	P	L	R	A	L	S	R	F	1204
Nav1.2-Rat DIII	1301	A	I	K	S	L	R	T	L	R	A	L	R	P	L	R	A	L	S	R	F	1320
BgNa_v1-1a DIII	1363	A	F	K	T	M	R	T	L	R	A	L	R	P	L	R	A	M	S	R	M	1382

S4

Figure S2A

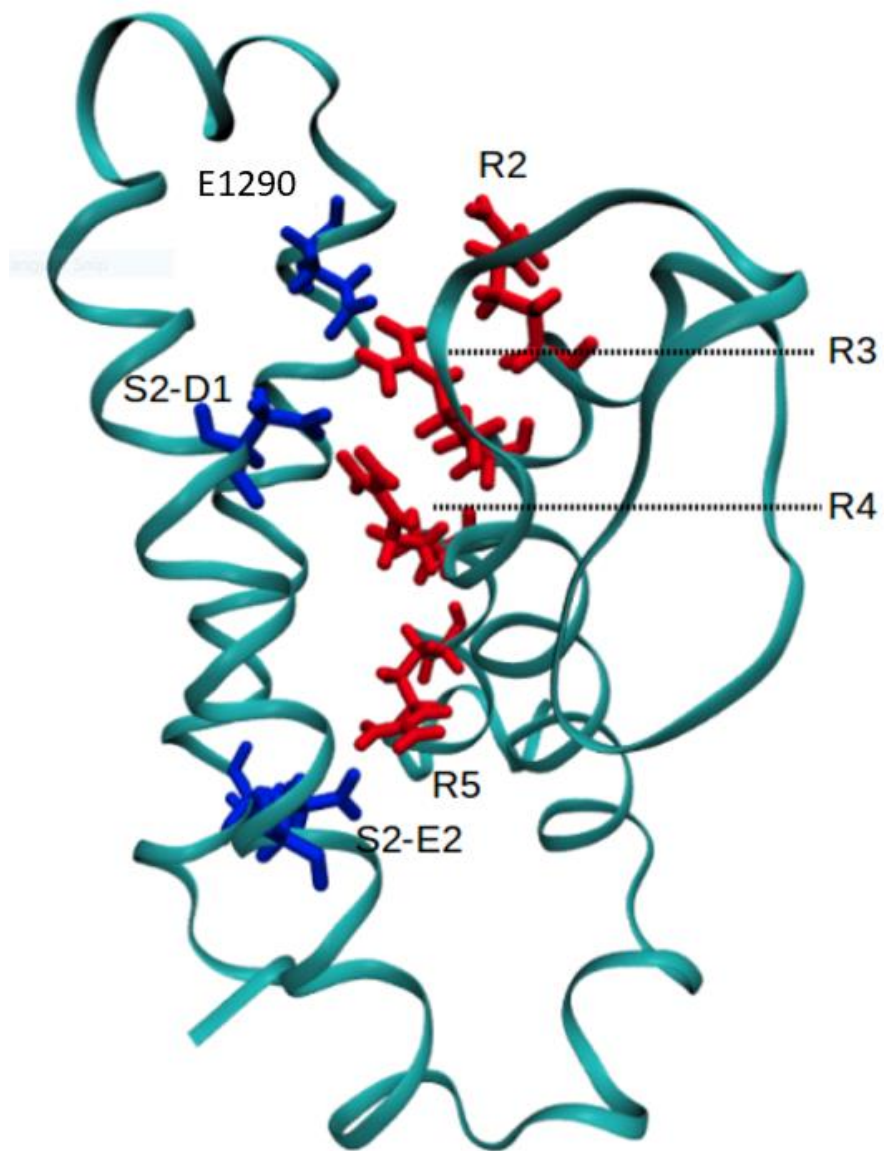


Figure S2B

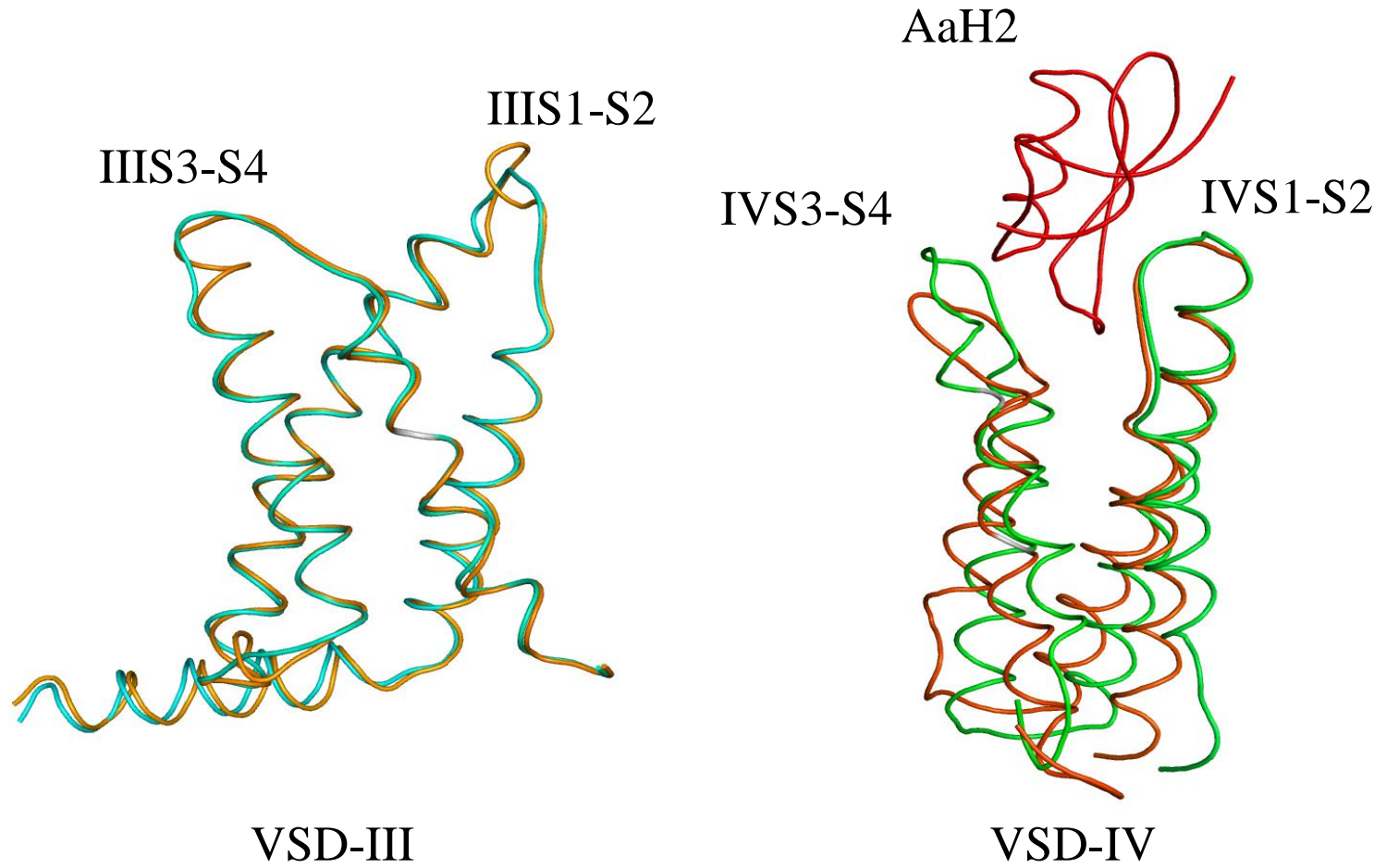


Figure S3A

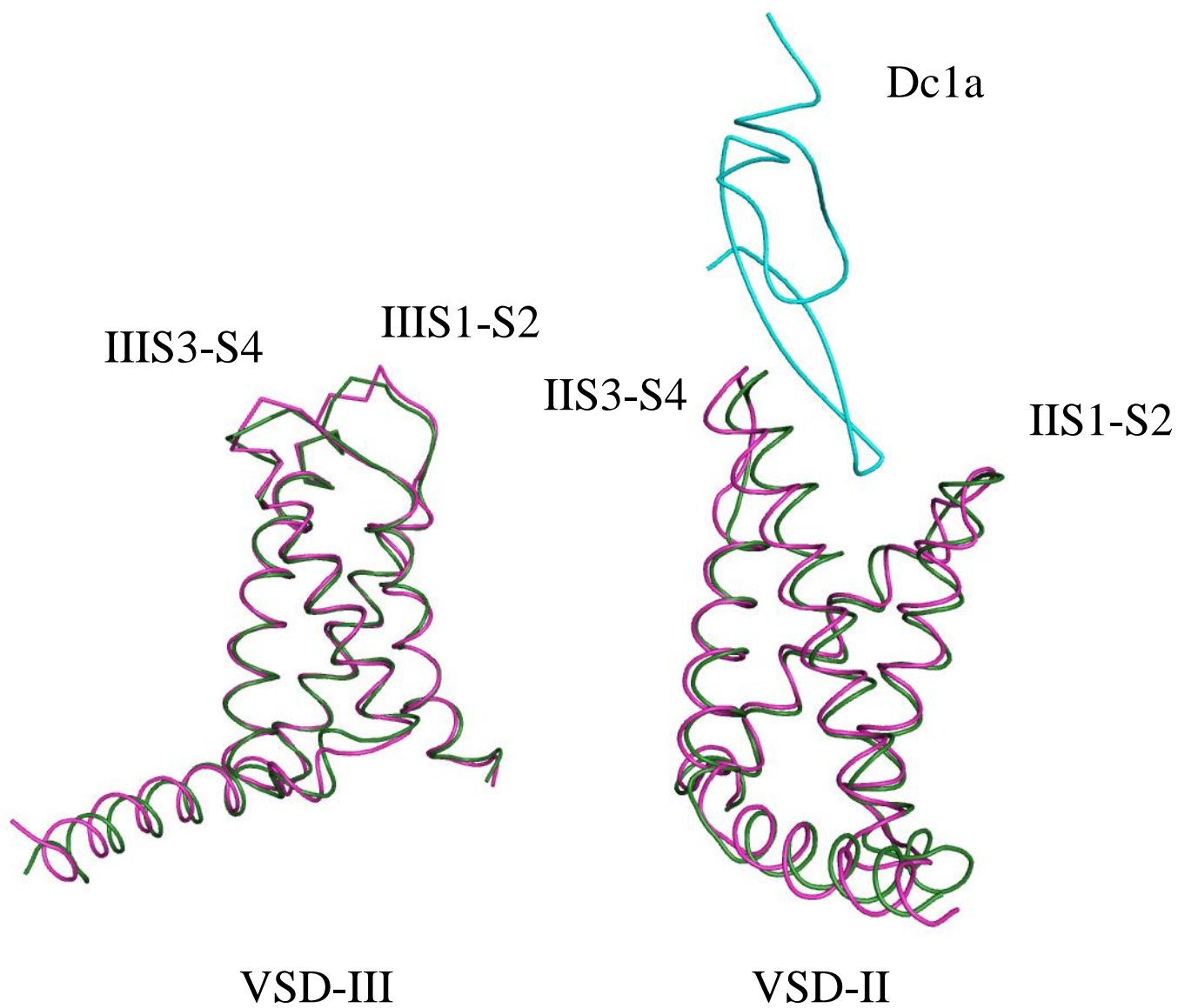


Figure S3B