

SUPPORTING INFORMATION

Modeling Suggests TRPC3 Hydrogen Bonding and Not Phosphorylation Contributes to the Ataxia Phenotype of the *Moonwalker* Mouse

Sonya M. Hanson, Mark S. P. Sansom, Esther B. E. Becker

Supplemental Tables S1-S3

In the following tables, the number of models seen for each potential hydrogen bonding partner to the T635 hydroxyl are listed. Partners in bold are those investigated more thoroughly in the main text. At the bottom are the most frequently seen hydrogen bonding partners, usually those adjacent to T635 also on the S4-S5 linker.

Table S1. Summary of models. All 100 models of the multi-template apo TRPV1 (PDB ID: 3J5P) – Kv – chimera structure (PDB ID: 2R9R) are analyzed.

Number of models	T635 as Donor or Acceptor	T635 H-Bond Partner
1	Acceptor	Y736
5	Both	T635
8	Either	R634
8	Donor	D638
22	Donor	L632
23	Donor	V636
48	Donor	S631

Table S2. Summary of models. The top 10 models according to the MODELLER scoring function are analyzed for the variety of templates used. Multi-template models are TRPV1 apo (PDB ID: 3J5P), RTX/DkTX-bound (PDB ID: 3J5Q), or capsaicin-bound (PDB ID: 3J5R) structures with the S4-S5 linker of the Kv-chimera structure (PDB ID: 2R9R).

Number of models	Template (S1 – S6 region)	T635 H-Bond Partner
2	Multi-template (3J5P)	R634
2	Multi-template (3J5P)	L632
4	Multi-template (3J5P)	V636
7	Multi-template (3J5P)	S631
1	3J5P	D638
2	3J5P	L632
3	3J5P	S631
4	3J5P	V636
1	2R9R	I732
1	2R9R	T635
2	2R9R	L632
3	2R9R	V636
5	2R9R	S631
1	Multi-template (3J5Q)	L632
2	Multi-template (3J5Q)	V636
2	Multi-template (3J5Q)	R634
2	Multi-template (3J5Q)	T635
4	Multi-template (3J5Q)	S631
1	Multi-template (3J5R)	T635
1	Multi-template (3J5R)	L632
5	Multi-template (3J5R)	V636
6	Multi-template (3J5R)	S631

Table S3. Summary of models. Analysis of the initial ten models on 2R9R, for which modeling was performed separately from the 100 models in *Table S2* and before the existence of any TRPV1 structures.

Number of models	T635 as Donor or Acceptor	T635 H-Bond Partner
1	Acceptor	S735
1	Both	T635
2	Donor	V636
4	Donor	S631

Supplemental Figures

Figure S1. Procheck analysis for models with novel T635 hydrogen-bonding partners. A series of Ramachandran plot analyses for six models of mTRPC3, showing broadly reasonable models. The analysis was performed using the PROCHECK tool. PDB coordinates for these six models have been made available.

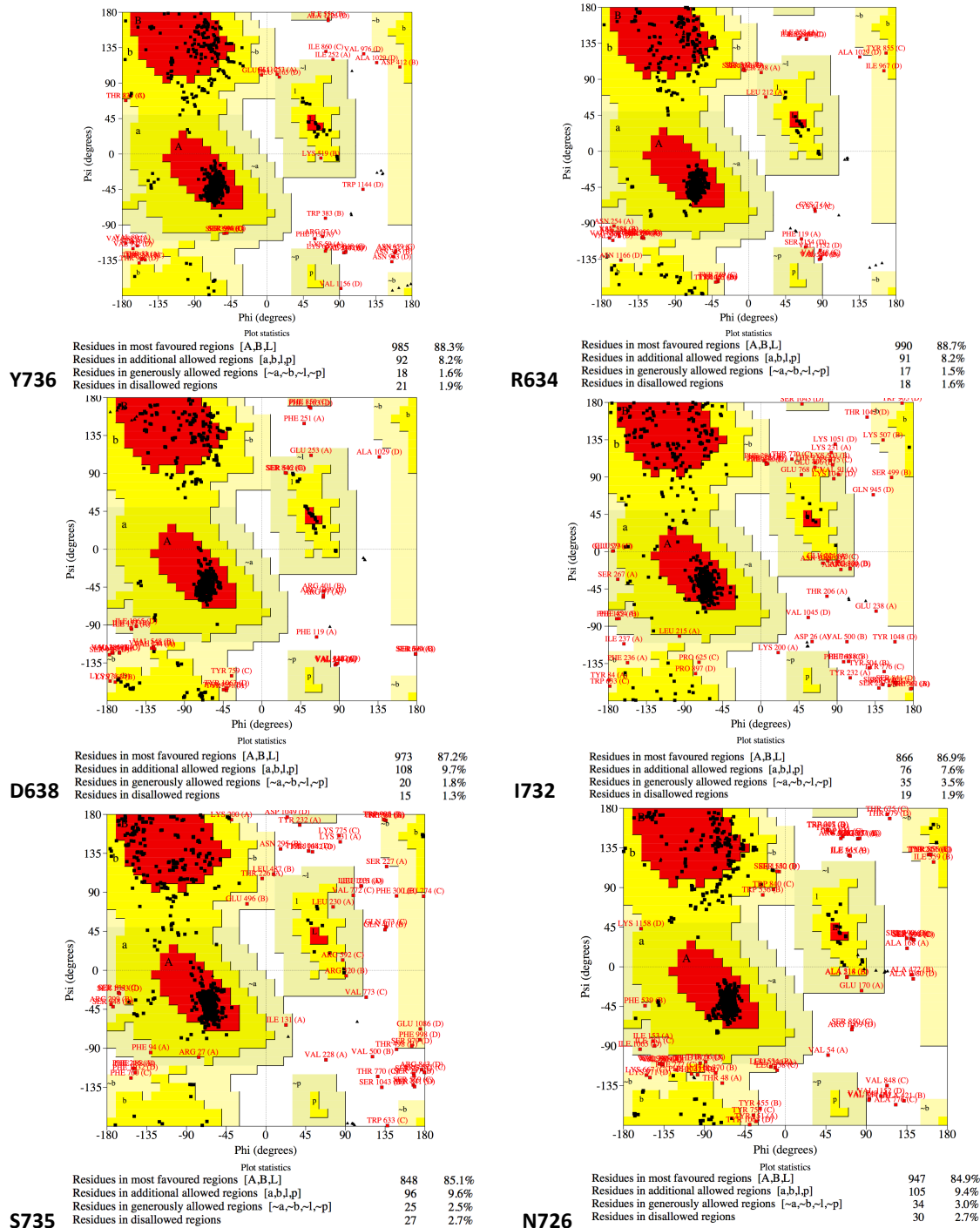


Figure S2. The TRPC3 mutants S735L and S735V did not induce significant amounts of cell death compared to wild-type (WT) TRPC3 upon overexpression in Neuro-2a cells (mean±SEM, n=3, ANOVA followed by Newman-Keuls post-hoc test)

