

Supplementary material

Supplementary Figure 1. Effects of Ca^{2+}_o on TRPC6/7 chimeras

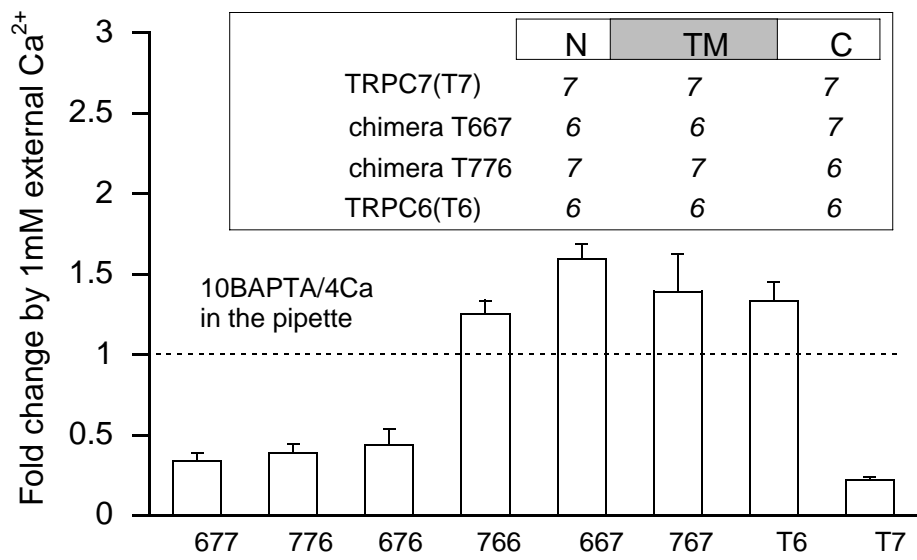
Relative changes (fold change; see Fig.1 legend for definition) by 1 mM Ca^{2+}_o in CCh-evoked currents recorded from six TRPC6/7 chimera-expressing cells (-60mV). Conventional whole-cell recording (10BAPTA/4Ca-internal solution). The inset depicts the structural arrangement of chimeras, where N, TM and C denote the amino-terminus, transmembrane domain and carboxy terminus of TRPC channels, respectively. $n = 5-10$.

Supplementary Figure 2. C-terminus determines the pattern of Ca^{2+}_i response

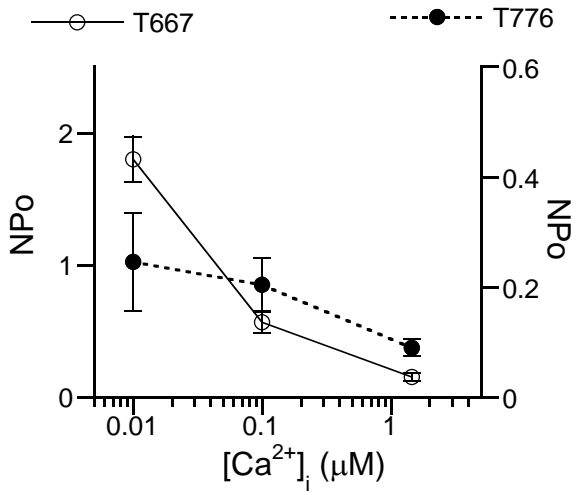
I/O recording at -60mV . A; NPo- $[\text{Ca}^{2+}]_i$ relationships for two TRPC6/7 chimeras T667 ($n=6$) and T776 ($n = 10$). B; NPo- $[\text{Ca}^{2+}]_i$ relationships for T667 with or without mutCaM coexpression. $n = 5$. C; effects of mutCaM coexpression on T776 activity. $[\text{Ca}^{2+}]_i$: $0.11\mu\text{M}$. $n = 5$. D; typical NPo-time plot for CCh-activated T667 channels at different $[\text{Ca}^{2+}]_i$, with $10\mu\text{M}$ IP₃ or $1\mu\text{M}$ wild-type CaM. $n = 6$. P value: unpaired t-test.

Supplementary Figure 3. CLUSTALW amino acid alignments of putative TM5-6 linker region between TRPC7, 6 and 5 channels

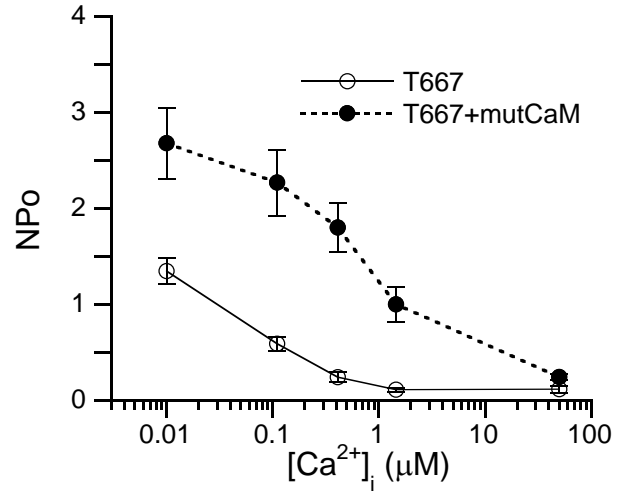
‘*’, ‘:’ and ‘.’ denote the amino acid identity/similarity.



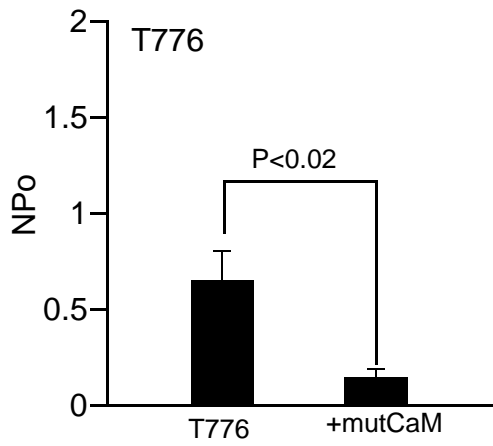
A



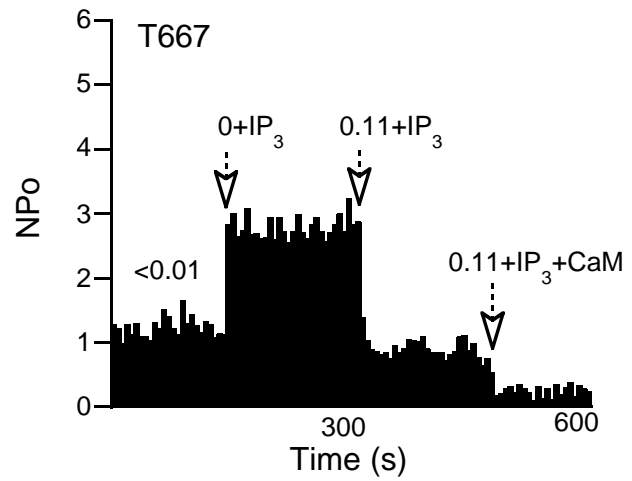
B



C



D



Supplementary Figure 3

hTRPC5 (542-601) YETRAIDEPNNCKGIRCEKQNNAFSTLFE^ETLQSLFWSVFGLLNLYVTNVKARHE^FT^EEFVG
mTRPC6 (644-703) FVAFMIGMFNLYSYYIGAKQNEAFTTV^EE^SFKTLFWAIFGLSE^VKSVVINYNHKFI^ENI^G
mTRPC7 (590-649) FVAFMIGMFNLYSYYRGAKYNPAFTTV^EE^SFKTLFWSIFGLSE^VISVVLKYD^HKFI^ENI^G
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