Premature contractions of the bladder are suppressed by interactions between TRPV4 and SK3 channels in murine detrusor PDGFRα^{+} cells

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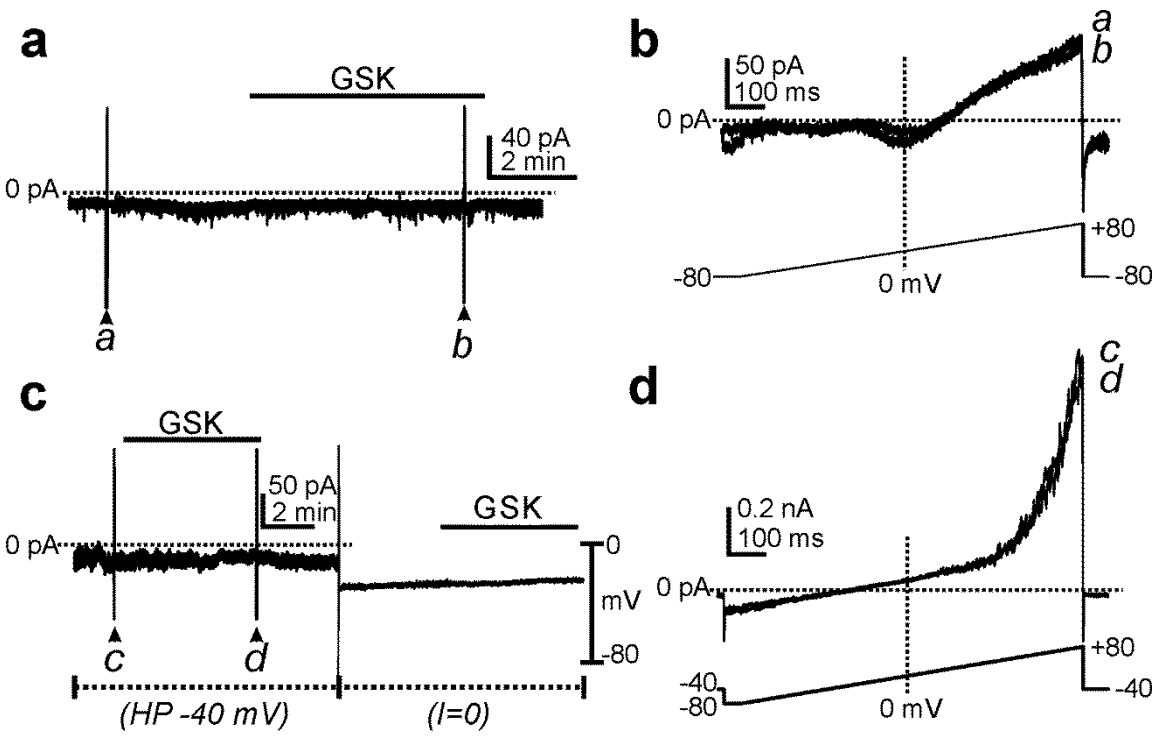
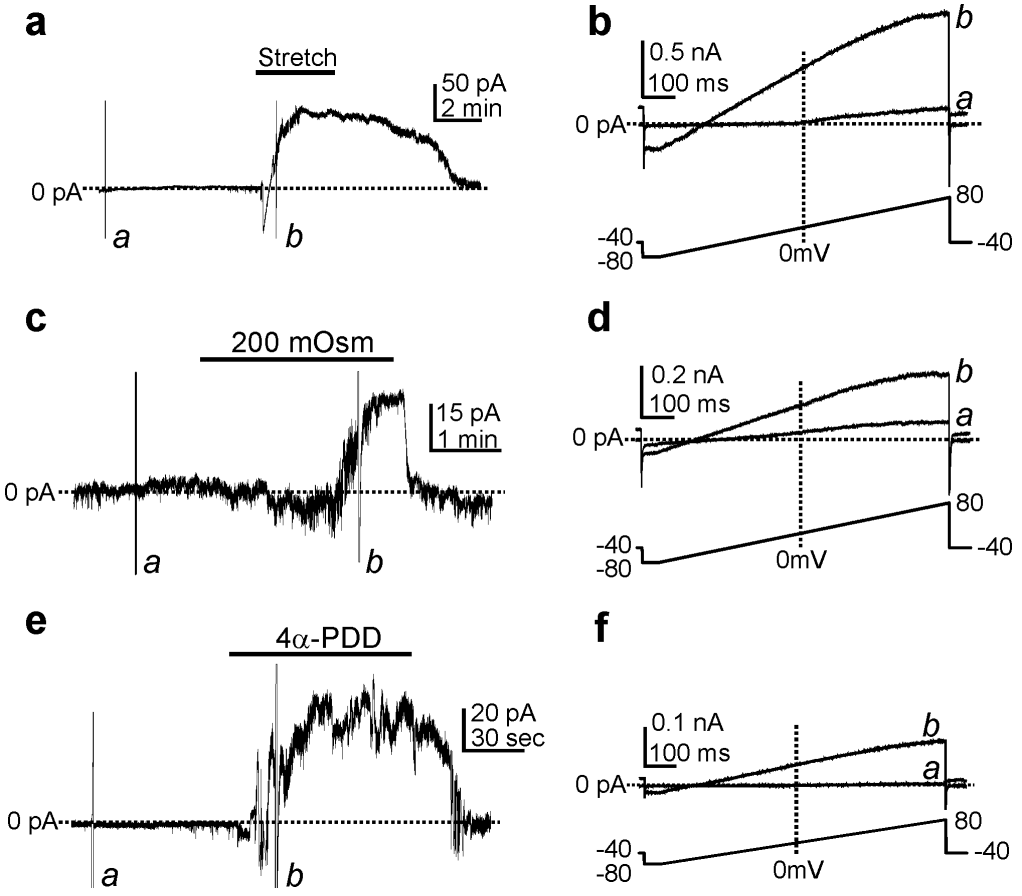
Supplementary Fig. S1: The effect of GSK on the detrusor smooth muscle cells.



Cells were dialyzed with Cs^+-rich (**a, b**) or K^+-rich (**c, d**) solutions. GSK (100 nM) did not evoke any current in smooth muscle cells with a holding potential of -80 mV (**a**). Expanded time scales from panel **a** during ramp depolarization (see inset) before (*a)* and after *(b)* GSK. GSK did not activate the outward current at a holding potential of -40 mV and had no effect on the membrane potential under current-clamp mode (*I=0,* **c**). Expanded time scales from panel **c** during ramp depolarization before (*c)* and after *(d)* GSK (**d**).

Supplementary Fig. S2: The property of TRPV4 channels in detrusor PDGFRα⁺ cells.



The effects of mechanical stretch, hypo-osmotic stress and 4α-Phorbol 12,13-didecanoate (4-α-PDD) on generation of outward currents were tested in PDGFRα⁺ cells dialyzed with K^+-rich solutions at a holding potential of -40 mV. Cell elongation (1-2 μm) induced initial inward current followed by the outward current at a holding potential of -40 mV (**a**). Expanded time scales (**b)** from panel **a** during ramp depolarization before (*a)* and after *(b)* cell elongation. Hypo-osmotic stress and 4α-PDD exposure induced inward currents followed by outward currents (**c** & **e**, respectively). Expanded time scales (**d** & **f**) showed ramp depolarizations from panel **c** and **e** before (*a)*, after *(b)* application of 200 mOsm solution and 4α-PDD.

Supplementary Table S1. Primer Sources

Gene Name	Sequence (Sense primer on top)	Accession #
Gapdh	GCCGATGCCCCCATGTTTGTGA GGGTGGCAGTGATGGCATGGAC	NM_008084
Pdgfra	ATGACAGCAGGCAGGGCTTCAACG CGGCACAGGTCACCACGATCGTTT	NM_011058
Myh11	CAGCTGGAAGAGGCAGAGGAGG AACAAATGAAGCCTCGTTTCCTCTC	NM_013607
Kit	CGCCTGCCGAAATGTATGACG GGTTCTCTGGGTTGGGGTTGC	NM_021099
Uchl1	CGATGGAGATTAACCCCGAGATG TTTTCATGCTGGGCCGTGAG	NM_011670
Trpc1	CTGTGGATTATTGGGATGATTTGGTCA CACTTTGAGGGCAAAGGTTGCCAA	NM_011643
Trpc2	CTCCTCCTGGCTGGGCTTG GGTGAAGCTGAGCATGCTGGTG	NM_011644
Trpc3	CAGCCAACACGATATCAGATAAT AAGTTCATAACGAAGGCTGGAGATATC	NM_019510
Trpc4	CCATGACTGGTGGAATCTAAT GGTGCCACATGTCCCATGATT	NM_016984
Trpc5	CATCTCCCTGGTAGTGCTGCTG CACCTTCATCAAAGTAACTCATCCAGAG	NM_009428
Trpc6	GTGGTGCTTGCTGTTGTCATTG CTTCAAATCTGTCAGCTGCATTCATGAC	NM_013838
Trpc7	CTCATAATGAGAATCAAGATGTGCCTC CAGAATTCCTCATGCCAGCCT	NM_012035
Trpm1	CGTGGGTTGAAGTTGTTCCTTAGC TCGTTGATTTCCTCCAATCTCATTGAC	NM_018752

Trpm2	CTTCTGGAACAAACTGGACGTTGG GAAGATGTGCATGAGACGGAGAC	NM_138301
Trpm3	GCTGACCAGATAGACCGTAAGC GACAATCCATGCTCCTGTCTTGC	NM_001035239
Trpm4	GGAGCAGGTCCTCCTGGGACT GGCACCCCAGAAGTCCGACG	NM_175130
Trpm5	CAACTGGAACAAGTGTGACATGGTG GCAAAGATGTGGATGAGCCGAAGTG	NM_020277
Trpm6	CGGCTCATGGACTTCTTTGCTG GGCTCAAAGACGATGTCACGAG	NM_153417
Trpm7	GTGCGTTTGCTAGACTTTCTAGCC CAAGAGACCAAGATGGTTCTTCATGTG	NM_021450
Trpm8	GCTGGGAGTCTGCCGACCTT GGGTGCTGAAGTGGGTGGAGA	NM_134252
Trpv1	GAGAGCAAGAACATCTGGAAGCTGC GATGATGCCCACGTTGGTGTTCC	NM_001001445
Trpv2	GAGCTGGACTGGACTGCTAGAGTAC TTCAGCACAGCCTTCATCAGGCAC	NM_011706
Trpv3	GAAGCGACTGAAGAAGCGCATCTTC TAGGAGACCACGTTGATGTAGAAGG	NM_145099
Trpv4	GTGCTGGAGATCCTGGTGTACAAC GTCAGCTTGTGCATGAGGAAGTCAG	NM_022017
Trpv5	AGACCAAGACTGGAACCAGCACG TCCCAGAGCTCCTCTTTGCCG	NM_001007572
Trpv6	GAGCCGAGACGAGCAGAACCT CCCATGGCTCCTCTCTGGTGC	NM_022413