

## Supplementary Materials

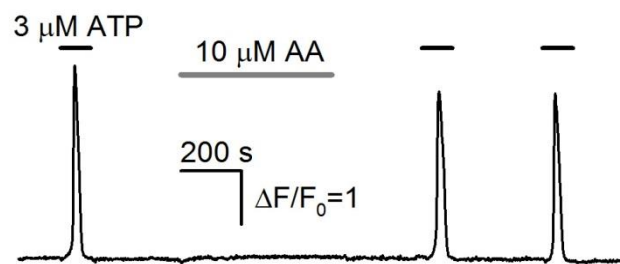
### 1. RT-PCR analysis of expression of K2P channels in MSCs

*Table 1S. Sequences of gene-specific primers*

Target gene	5'-sequence-3' (Forward/Reversed)	Product size (bp)
KCNK1 (TWIK1)	GATTGGGATCACGTGTTACC TTAAGCCTCTTCCTTGCACC	334
KCNK2 (TREK1)	GTGGAAGATACGTTTATTAAGTGG CTCTGAACCTCTCCACCTC	361
KCNK3 (TASK1)	TCATCACCACCATCGGCTAC GTAGTAGGCCTGGAAGAAG	305
KCNK4 (TRAAK)	AAGCCATCTTCTTGAAGTGG ACTACTCGCAGCCAGTTC	319
KCNK5 (TASK2)	ACCGTCATTACCACCATTTGG TAG TTG GCG CTG GGG TTC	377
KCNK6 (TWIK2)	TGTCTTGGCTGAGCATGCGT GCCAGGAAGAGGTAGACTG	275
KCNK7	CATCCTCACCACCACAGG GTCCTAGAAGCAAGTAACCAAG	430, 530, 630, or 730 depending on splice variant
KCNK9	ACGGTCATCACCACCATAGG AAGCTCCACTCCTCACAC	293
KCNK10 (TREK2)	AACTGTCATTACGACCATAGGG GCCTTGATTTACCCACCTC	528
KCNK12	GGTGTCAACCATAGGTTTTCG ATGAGCAGCACGTGGTAC	279
KCNK13	TCATCGTGCTCTACCTGC GTTGTCATCCCAAACCCTATG	274
KCNK15 (TASK5)	CGTCATCACTACCATCGAGTAC CAGGTTCTCCGTGGACAC	211
KCNK16	ACAGTCGTCACTACCATAGG CTCCACATGGCTGAAGAC	276
KCNK17	ACTCGCTGATCCGGGATG CCCAGTGGTTTACTCCCTG	264
KCNK18	TTCAGCACCGTGGGCTATG CGTGAAGGACATGTGCCAAG	320
CD73	AAGACATGACTCTGGTGACC CTGTCACAAAGCCAGGTCC	266
CD90	GTCACAGTGCTCAGAGAC TACAAAAAGACAGCCAGAGG	344
CD105	AGCAGAGCTTTGTGCAGGTC GCTGATGATGTTCAAGCGCATG	317

## 2. Effects of arachidonic acid on cytosolic $Ca^{2+}$ in MSCs.

In a number of experiments, the responsiveness of MSCs to AA and ATP, an effective  $Ca^{2+}$  mobilizer, was assayed with  $Ca^{2+}$  imaging. As illustrated in Fig.1S, 10  $\mu$ M AA affected cytosolic  $Ca^{2+}$  inessentially in all cells assayed (n=76), while purinergic MSCs (9 cells) responded to 3  $\mu$ M ATP with marked  $Ca^{2+}$  transients sufficient to activate  $Ca^{2+}$ -gated  $K^+$  channels (Tarasov et al. Pflugers Arch. 2017; 469: 349-362).



**Figure 1S.** Representative monitoring of intracellular  $Ca^{2+}$  in MSC stimulated by 3  $\mu$ M ATP and 10  $\mu$ M AA.

**Method.** For  $Ca^{2+}$  imaging, cells were plated onto a photometric chamber of nearly 150  $\mu$ l volume. This chamber was a disposable coverslip (Menzel-Glaser) with an attached ellipsoidal resin wall. The chamber bottom was coated with Cell-Tak (BD Biosciences), enabling strong cell adhesion. Attached cells were then loaded with the  $Ca^{2+}$  indicator Fluo-4 for 20 min at room temperature (23–25°C) by adding Fluo-4AM (4  $\mu$ M) or Fluo-4AM (4  $\mu$ M) + NP-EGTA-AM (4  $\mu$ M) and Pluronic (0.02%) (all from Molecular Probes) to a bath solution. Loaded cells were rinsed with the bath solution three times and kept at 4°C for 1 hour prior to recordings. Generally, the incubation of MSCs at low temperature stabilized intracellular  $Ca^{2+}$  and decreased a fraction of spontaneously oscillating cells.

Cells loaded with Fluo-4 were imaged using a fluorescent microscope Axiovert 135 equipped with an objective Plan-Neofluar 20 $\times$ /0.75 (Zeiss) and ECCD camera LucaR (Andor Technology). Fluo-4 fluorescence was excited at 480 $\pm$ 5 nm using LED controlled by a computer. Fluo-4 emission was collected at 535 $\pm$ 20 nm. Serial fluorescent images were captured every second and analyzed using the Imaging Workbench 6 software (INDEC). Deviations of cytosolic  $Ca^{2+}$  from the resting level were quantified by a relative change in the intensity of Fluo-4 fluorescence ( $\Delta F/F_0$ ) recorded from an individual cell.