

Figure.S1 Localization of Trpm in wildtype mature oocytes. Representative image of anti-Trpm staining of a mature oocyte from ORP2 wildtype females. Scale bar = $100 \mu m$.



Figure.S2 Localization of Trpm in *kmr* mutant oocytes. Representative images of anti-Trpm staining in mature oocytes from kmr^2 (n=13) females. Scale bar = 100 μ m.

Movie S1 (separate file)

Calcium waves in spherical oocytes from homozygous *kugelei*^{N103-2} mutant females, detected with *nos-GCaMP6m*.

20 FPS

160 frames

1 sec per frame

Movie S2 (separate file)

Calcium rise induced by a microneedle at the anterior pole of wildtype oocytes, detected with $mat\alpha 4$ -GAL4-VP16 > UASp-GCaMP3.

5 FPS

20 frames

10 sec per frame

Movie S3 (separate file)

Calcium rise induced by a microneedle at the waist of wildtype oocytes, detected with *mat* α 4-*GAL4-VP16* > *UASp-GCaMP3*.

5 FPS

39 frames

10 sec per frame

Movie S4 (separate file)

Calcium rise induced by a microneedle at the posterior pole of wildtype oocytes, detected with $mat\alpha 4$ -GAL4-VP16 > UASp-GCaMP3.

5 FPS

20 frames

10 sec per frame

Movie S5 (separate file)

Calcium waves in oocytes from heterozygous *kmr*¹ females, detected with *nos-GCaMP6m*. False color LUT was used to make the calcium wave more evident.

36 FPS

360 frames

1 sec per frame

Movie S6 (separate file)

Calcium waves in oocytes from homozygous *kmr*¹ females, detected with *nos-GCaMP6m*. False color LUT was used to make the calcium wave more evident.

20 FPS

20 frames

1 sec per frame