

# The mechanoreception in *Drosophila melanogaster* oocyte under modeling micro- and hypergravity

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Table S1. The stiffness (in pN/nm) of the *Drosophila melanogaster* oocytes under simulated micro- and hypergravity without or with addition agents.

Exposure time Group and conditions of pre-incubation		0 min	30 min	90 min	210 min
No pre-incubation	C	30.7 ± 1.0	30.8 ± 1.4	31.2 ± 1.2	29.6 ± 0.7
	s μg	30.4 ± 1.4	30.6 ± 1.3	25.5 ± 1.2*↓	24.8 ± 1.2*↓
	hg	31.4 ± 1.0	26.7 ± 1.8*↓	27.0 ± 2.4*↓	29.5 ± 1.4
Pre-incubation in 0.65% NaCl without any agents 3 hours, RT	C	31.0 ± 1.4	31.5 ± 0.9	31.3 ± 1.8	30.6 ± 1.6
	s μg	30.8 ± 1.5	31.1 ± 1.6	25.8 ± 1.8*↓	26.2 ± 1.4*↓
	hg	30.6 ± 1.1	26.7 ± 1.7*↓	26.3 ± 1.4*↓	31.2 ± 1.1
Pre-incubation in 0.65% NaCl + 2 μM cytochalasine B 3 hours, RT	C	30.4 ± 1.2	31.0 ± 1.6	30.5 ± 2.1	30.0 ± 1.1
	s μg	30.9 ± 1.4	31.5 ± 1.3	26.0 ± 1.2*↓	26.3 ± 1.8*↓
	hg	30.4 ± 1.2	26.7 ± 2.1*↓	26.3 ± 1.4*↓	30.8 ± 1.6
Pre-incubation in 0.65% NaCl + 10 μM colchicine 3 hours, RT	C	31.1 ± 2.1	31.5 ± 1.1	30.4 ± 1.5	30.4 ± 1.0
	s μg	31.1 ± 1.4	30.4 ± 1.2	25.8 ± 0.7*↓	26.0 ± 1.4*↓
	hg	31.5 ± 1.7	26.6 ± 2.0*↓	26.0 ± 1.2*↓	25.8 ± 0.9*↓
Pre-incubation in 0.65% NaCl + 40mM acrylamide 3 hours, RT	C	26.4 ± 0.8*↓	27.0 ± 1.4*↓	26.6 ± 1.4*↓	25.8 ± 1.2*↓
	s μg	26.2 ± 0.9*↓	27.1 ± 1.2*↓	25.9 ± 0.8*↓	26.7 ± 1.1*↓
	hg	26.7 ± 1.2*↓	25.9 ± 1.2*↓	26.2 ± 1.2*↓	25.3 ± 1.2*↓
Pre-incubation in 0.65% NaCl + 100nM calyculin A 3 hours, RT	C	36.1 ± 1.8*↑	35.7 ± 1.6*↑	35.6 ± 1.0*↑	35.3 ± 1.3*↑
	s μg	34.7 ± 1.6*↑	35.9 ± 1.5*↑	30.1 ± 1.2	30.2 ± 1.7
	hg	35.3 ± 1.4*↑	28.2 ± 2.0&↓	30.5 ± 1.1	30.4 ± 2.0

C – control, s μg – simulated microgravity, hg – hypergravity at the 2g level. RT – room temperature. \* – p < 0.05 in comparison with the according control group without any agents, & – p < 0.1 in comparison with the according control group without any agents. ↑ – increase relative to the reference value. ↓ – decrease relative to the reference value.

Table S2. The cellular respiration (in  $\text{pmol O}_2 \cdot \text{ml}^{-1} \cdot \text{min}^{-1} \cdot \text{oocyte}^{-1}$ ) of the *Drosophila melanogaster* oocytes under simulated micro- and hypergravity.

Exposure time Group		0 min	30 min	90 min	210 min
V0	C	$11.7 \pm 1.0$	$12.0 \pm 0.4$	$11.2 \pm 0.8$	$10.7 \pm 1.6$
	s $\mu\text{g}$	$12.1 \pm 0.4$	$12.2 \pm 0.4$	$9.7 \pm 0.4$	$10.3 \pm 1.2$
	hg	$12.2 \pm 1.6$	$12.2 \pm 0.6$	$10.2 \pm 1.0$	$9.1 \pm 0.8$
Vglu+mal	C	$16.6 \pm 1.2$	$16.6 \pm 1.3$	$16.0 \pm 1.8$	$16.6 \pm 1.3$
	s $\mu\text{g}$	$17.7 \pm 2.0$	$15.7 \pm 0.5$	$14.4 \pm 1.4$	$17.0 \pm 1.6$
	hg	$15.8 \pm 2.1$	$16.9 \pm 2.0$	$14.5 \pm 0.7$	$13.7 \pm 1.3$
Vmax	C	$22.6 \pm 1.8$	$21.3 \pm 1.6$	$21.3 \pm 0.9$	$21.6 \pm 2.2$
	s $\mu\text{g}$	$20.8 \pm 1.3$	$20.8 \pm 1.2$	$20.9 \pm 1.0$	$18.9 \pm 1.9$
	hg	$22.6 \pm 1.3$	$22.5 \pm 1.0$	$19.0 \pm 1.0$	$20.8 \pm 1.3$
V(II)	C	$23.6 \pm 1.3$	$24.2 \pm 2.1$	$23.4 \pm 2.0$	$22.7 \pm 1.9$
	s $\mu\text{g}$	$22.9 \pm 2.6$	$26.6 \pm 2.6$	$22.9 \pm 1.1$	$22.3 \pm 2.2$
	hg	$22.8 \pm 1.2$	$24.0 \pm 1.2$	$22.7 \pm 0.4$	$21.7 \pm 1.1$
V(IV)	C	$265 \pm 16$	$265 \pm 22$	$277 \pm 23$	$259 \pm 20$
	s $\mu\text{g}$	$284 \pm 21$	$278 \pm 24$	$270 \pm 12$	$262 \pm 18$
	hg	$297 \pm 24$	$287 \pm 20$	$266 \pm 21$	$264 \pm 28$

C – control, s  $\mu\text{g}$  – simulated microgravity, hg – hypergravity at the 2g level. V0 – basal oxygen absorption. Vglu+mal – oxygen absorption after supplement 10mM glutamate+5mM malate (substrates of the complex I respiratory chain). Vmax – maximal oxygen absorption after supplement 2mM ADP. V(II) – oxygen absorption after 0.5  $\mu\text{M}$  rotenone implementation (inhibitor of the complex I respiratory chain) and 10 mM succinate addition (substrate of the complex II respiratory chain). V(IV) – oxygen absorption after 5  $\mu\text{M}$  antimycin A implementation (inhibitor of the complex III respiratory chain) and 0.5 mM TMPD + 2 mM ascorbate addition (artificial substrates of the complex IV respiratory chain).