**Supplementary files for -** **ROCK and the actomyosin network control biomineral growth and morphology during sea urchin skeletogenesis**

Eman Hijaze1, Tsvia Gildor1, Ronald Seidel2,&, Majed Layous1, Mark Winter3, Luca Bertinetti2, Yael Politi2 and Smadar Ben-Tabou de-Leon1,\*

1Department of Marine Biology, Leon H. Charney School of Marine Sciences, University of Haifa, Haifa 31905, Israel.

2B CUBE Center for Molecular Bioengineering, Technische Universität Dresden, 01309 Dresden, Germany.

3Department of Electrical Engineering, Computer Science and Mathematics, Technische Universiteit Delft, Delft 2628CD, Netherlands

&Current address: Section Biomedical Imaging, Molecular Imaging North Competence Center (MOIN CC), Dept. Radiology and Neuroradiology, University Medical Center Kiel, Kiel University, 24118 Kiel, Germany.

\*Correspondence: Smadar Ben-Tabou de-Leon (sben-tab@univ.haifa.ac.il)

**This PDF file includes:** Supplementary files 1a-1d

**Supplementary file 1a**

|  |  |  |
| --- | --- | --- |
| **Condition** | **# replicates** | **# embryos scored** |
| DMSO (control) | 8 | 438 |
| Y0 10µM | 3 | 122 |
| Y25 10µM | 3 | 109 |
| Y0 30µM | 3 | 120 |
| Y20 30µM | 3 | 103 |
| Y25 30µM | 3 | 108 |
| y0 40µM | 3 | 93 |
| y20 40µM | 3 | 123 |
| y25 40µM | 3 | 101 |
| y0 80µM | 8 | 377 |
| y20 80µM | 3 | 116 |
| y25 80µM | 7 | 369 |
| Wash 80µM | 5 | 268 |

**Supplementary file 1b**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **# of spicules** | **Avrg. Length** | **Stdev. Length** | **Avrg. Thickness** | **Stdev. Thickness** | **Avrg. Volume** | **Stdev. Volume** | **Avrg. Area** | **Stdev. Area** |
| **Control\_48h** | 44 | 497.2 | 62.43 | 3.7 | 0.44 | 6860.28 | 1999.61 | 5822.46 | 1121.57 |
| **Control\_72h** | 51 | 697.4 | 71.69 | 4.4 | 0.37 | 14673.2 | 2747.3 | 9896.75 | 1199.63 |
| **Y25\_48h** | 93 | 187.93 | 50.18 | 3.92 | 0.53 | 2925.29 | 973.86 | 2324.51 | 606.62 |
| **Y25\_72h** | 94 | 276.29 | 81.8 | 4.46 | 0.65 | 5799.48 | 2408.91 | 4002.78 | 1250.25 |

**Supplementary file 1c**

|  |  |
| --- | --- |
|  | **Y25 48hpf** |
| **Control 48hpf** | Length: p=2.2e-63, t=31.0771 |
|  | Thickness: p=0.02, t=-2.342 |
|  | Volume: p=8.1e-32, t=15.5207 |
|  | Area: p=6.3e-50, t=23.6854  |
|  | **Y25 72hpf** |
| **Control 72hpf** | Length: p=3.9e-65, t=30.8792 |
|  | Thickness: p=0.5, t=-0.6798 |
|  | Volume: p=2.2e-43, t=20.1038 |
|  | Area: p=1.2e-58, t=27.4415 |

**Supplementary file 1d**

|  |  |  |
| --- | --- | --- |
| **Treatment** | **# replicates** | **# scored embryos** |
| **DMSO (control)** | 5 | 176 |
| **LatA >20hpf** | 4 | 152 |
| **LatA >25hpf** | 4 | 140 |
| **Bleb >20hpf** | 4 | 162 |
| **Bleb>25hpf** | 4 | 144 |
| **LatA+Bleb>20hpf** | 3 | 96 |
| **LatA+Bleb>25hpf** | 3 | 114 |