

**S1 Table. Expression of *Fgf9/16/20*, *Foxd.b*, *Tbx6.b*, *Efna.d*, and *Tfap2-r.b* in morphant embryos of maternal factors.**

| Genes examined    | MO                  | Number of embryos | Number of cells that expressed genes/Number of cells counted* <sup>1</sup> |                           |                           |                          |
|-------------------|---------------------|-------------------|--|---------------------------|---------------------------|--------------------------|
|                   |                     |                   | animal anterior (a-line)   | animal posterior (b-line) | vegetal anterior (A-line) | vegetal posterior (B5.1) |
| <i>Fgf9/16/20</i> | not injected        | 173               | 0  | 0                         | 640 / 692<br>(92.5%)      | 302 / 346<br>(87.3%)     |
|                   | control standard MO | 22                | 0  | 0                         | 88 / 88<br>(100%)         | 42 / 44<br>(95%)         |
|                   | <i>β-catenin</i> MO | 59                | 0  | 0                         | 0                         | 0                        |
|                   | <i>Gata.a</i> MO    | 36                | 0  | 0                         | 116 / 144<br>(81%)        | 48 / 72<br>(67%)         |
|                   | <i>Zic-r.a</i> MO   | 29                | 0  | 0                         | 93 / 116<br>(80%)         | 48 / 58<br>(83%)         |
| <i>Foxd.b</i>     | not injected        | 180               | 0  | 0                         | 716 / 720<br>(99%)        | 353 / 360<br>(98%)       |
|                   | control standard MO | 31                | 0  | 0                         | 124 / 124<br>(100%)       | 62 / 62<br>(100%)        |
|                   | <i>β-catenin</i> MO | 39                | 0  | 0                         | 6 / 156<br>(3.8%)         | 4 / 78<br>(5.1%)         |
|                   | <i>Gata.a</i> MO    | 33                | 0  | 0                         | 128 / 132<br>(97%)        | 53 / 66<br>(80%)         |
|                   | <i>Zic-r.a</i> MO   | 30                | 0  | 0                         | 120 / 120<br>(100%)       | 59 / 60<br>(98%)         |
| <i>Tbx6.b</i>     | not injected        | 180               | 0  | 0                         | 0                         | 360 / 360<br>(100%)      |
|                   | control standard MO | 35                | 0  | 0                         | 0                         | 70 / 70<br>(100%)        |
|                   | <i>β-catenin</i> MO | 25                | 0  | 0                         | 0                         | 0                        |
|                   | <i>Gata.a</i> MO    | 20                | 0  | 0                         | 0                         | 40 / 40<br>(100%)        |
|                   | <i>Zic-r.a</i> MO   | 30                | 0  | 0                         | 0                         | 2 / 60<br>(3.3%)         |

|                  |                        |     |                     |                     |                    |                   |
|------------------|------------------------|-----|---------------------|---------------------|--------------------|-------------------|
| <i>Efnad</i>     | not injected           | 185 | 733 / 740<br>(99%)  | 737 / 740<br>(99%)  | 0                  | 0                 |
|                  | control<br>standard MO | 35  | 140 / 140<br>(100%) | 140 / 140<br>(100%) | 0                  | 0                 |
|                  | <i>β-catenin</i> MO    | 49  | 103 / 196<br>(53%)  | 165 / 196<br>(84%)  | 81 / 196<br>(41%)  | 22 / 98<br>(22%)  |
|                  | <i>Gata.a</i> MO       | 55  | 21 / 220<br>(10%)   | 49 / 220<br>(22%)   | 0                  | 0                 |
|                  | <i>Zic-r.a</i> MO      | 55  | 159 / 220<br>(72%)  | 193 / 220<br>(88%)  | 0                  | 3 / 110<br>(2.7%) |
| <i>Tfap2-r.b</i> | not injected           | 139 | 490 / 556<br>(88%)  | 489 / 556<br>(88%)  | 0                  | 0                 |
|                  | control<br>standard MO | 36  | 144 / 144<br>(100%) | 144 / 144<br>(100%) | 0                  | 0                 |
|                  | <i>β-catenin</i> MO    | 27  | 98 / 108<br>(91%)   | 93 / 108<br>(86%)   | 100 / 108<br>(93%) | 10 / 54<br>(19%)  |
|                  | <i>Gata.a</i> MO       | 25  | 17 / 100<br>(17%)   | 15 / 100<br>(15%)   | 0                  | 0                 |
|                  | <i>Zic-r.a</i> MO      | 30  | 107 / 120<br>(89%)  | 104 / 120<br>(87%)  | 0                  | 0                 |

\*<sup>1</sup> Note that each embryo has four cells in each quadrant at the 16-cell stage. In the vegetal posterior quadrant, only the anterior B5.1 pair was counted, because the posterior B5.2 pair was not transcriptionally active.