Table S1. Summary of results

|              | Markers        |                |                               |   |                |                |                 |                 |  |  |                |                           |  |  |
|--------------|----------------|----------------|-------------------------------|---|----------------|----------------|-----------------|-----------------|--|--|----------------|---------------------------|--|--|
| Treatment    | Pitx2          | Alx4           | MyoR                          | Tbx1  | Twist          | Myf5           | paraxis         | Pax3            | Isl1   | Nkx2.5   | Cyp26C1        | HoxB1                     | noggin   | Mkp3/Pyst                                      |
| RA           | down           | no<br>response | down                          | down;<br>response<br>weaker than<br>for Pitx2 and<br>MyoR | no<br>response | no<br>response | no<br>response  | no<br>response  | no response<br>in hm<br>(down in cm)                             | no<br>response<br>in hm<br>(down in<br>cm)       | no<br>response | up at<br>HH8 and<br>later | no<br>response                                 | no<br>response<br>anterior,<br>down in<br>p/hm |
| Bmp          | no<br>response | up             | up at<br>HH9                  | down  | no<br>response | no<br>response | down in<br>p/hm | down in<br>p/hm | up in hm at<br>HH5-6,<br>no response<br>later                    | up in hm<br>at HH5-6,<br>no<br>response<br>later | down           | no<br>response            | up   | up in a/hm                                     |
| noggin       | no<br>response | down           | down                          | slightly up   | no<br>response | no<br>response | slightly<br>up  | slightly<br>up  |  |  |                |                           | down   |  |
| Fgf          | down           | down           | up at<br>HH9                  | ир  | no<br>response | no<br>response | no<br>response  | no<br>response  | no response<br>in hm<br>(up within<br>endogenous<br>Isl1 domain) | no<br>response<br>in hm                          | down           | no<br>response            | up<br>anterior,<br>no<br>response<br>posterior | up   |
| SU5402       | up             | no<br>response | down                          | down  | no<br>response | no<br>response | no<br>response  | no<br>response  |  |  |                |                           |  | down   |
| Fgf +<br>Bmp |                | 111,000        | up<br>already<br>at HH7-<br>8 | upregulation<br>by Fgf<br>suppressed                      | 111,000        | 127,01100      | 111,000         | 111,000         |  |  |                |                           |  |  |

a/hm, anterior head mesoderm; cm, cardiac mesoderm; hm, head mesoderm; p/hm, posterior head mesoderm.