**Figure 7i-j source data**

|  |  |  |  |
| --- | --- | --- | --- |
|  | distal midgut | proximal midgut - caudal half | proximal midgut - proximal half |
| embryo | # GFP+ (%) | # Ret+ (%) | # GFP+/Ret+ (%) | # GFP-/Ret+ (%) | # GFP+ (%) | # Ret+ (%) | # GFP+/Ret+ (%) | # GFP-/Ret+ (%) | # GFP+ (%) | # Ret+ (%) | # GFP+/Ret+ (%) | # GFP-/Ret+ (%) |
| Pax2Cre | 1 | 50 (45.05) | 100 (90.09) | 39 (35.14) | 61 (54.95) | 138 (32.02) | 368 (85.38) | 75 (17.40) | 293 (67.98) | 79 (28.01) | 219 (77.66) | 16 (5.67) | 203 (71.99) |
| 2 | 22 (40.74) | 52 (96.30) | 20 (37.04) | 32 (59.26) | 75 (26.60) | 231 (81.91) | 24 (8.51) | 207 (73.40) | 75 (26.60) | 231 (81.91) | 24 (8.51) | 207 (73.40) |
| 3 | 28 (35.90) | 77 (98.72) | 27 (34.62) | 50 (64.10) | 59 (27.96) | 183 (86.73) | 31 (14.69) | 152 (72.04) | 27 (21.43) | 107 (84.92) | 8(6.35) | 99 (78.57) |
| 4 | 97 (44.70) | 200 (92.17) | 80 (36.87) | 120 (55.30) | 137 (51.70) | 237 (89.43) | 109 (41.13) | 128 (48.30) | 142 (48.80) | 255 (87.63) | 106 (36.43) | 149 (51.20) |
| Pax2Cre/Ednrb | 1 | 5 (71.43) | 2 (28.57) | 0 (0) | 2 (28.57) | 29 (31.52) | 66 (71.74) | 3 (3.26) | 63 (68.48) | 75 (24.19) | 252 (81.29) | 17 (5.48) | 235 (75.81) |
| 2 | 3 (42.86) | 4 (57.14) | 0 (0) | 4 (57.14) | 24 (20.51) | 97 (82.91) | 4 (3.42) | 93 (79.49) | 75 (21.25) | 285 (80.74) | 7 (1.98) | 278 (78.75) |
| 3 | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 17 (21.25) | 64 (80.00) | 1 (1.25) | 63 (78.75) | 42 (21.76) | 153 (79.27) | 2 (1.04) | 151 (78.24) |
| 4 | 6 (20.69) | 25 (86.21) | 2 (6.9) | 23 (79.31) | 48 (22.02) | 176 (80.73) | 6 (2.75) | 170 (77.98) | 103 (24.41) | 345 (81.75) | 26 (6.16) | 319 (75.59) |
| 5 | 5 (29.41) | 12 (70.59) | 0 (0) | 12 (70.59) | 242 (23.73) | 144 (81.36) | 9 (5.08) | 135 (76.27) | 84 (24.28) | 284 (82.08) | 22 (6.36) | 262 (75.72) |
| 6 | 0 (0) | 1 (100.00) | 0 (0) | 1 (100.00) | 34 (25.95) | 105 (80.15) | 8 (6.11) | 97 (74.05) | 43 (26.54) | 128 (79.01) | 9 (5.56) | 119 (73.46) |
| 7 | 6 (26.09) | 18 (78.26) | 1 (4.35) | 17 (73.91) | 159 (31.93) | 378 (75.90) | 39 (7.83) | 339 (68.07) | \* |
| 8 | 9 (33.33) | 19 (70.37) | 1 (3.70) | 18 (66.67) | 141 (28.54) | 400 (80.97) | 47 (9.51) | 353 (71.46) | 29 (25.00) | 39 (80.17) | 6 (5.17) | 87 (75.00) |
| 9 | 7 (14.89) | 43 (91.49) | 3 (6.38) | 40 (85.11) | 196 (32.94) | 446 (74.96) | 47 (7.90) | 399 (67.06) | \* |
| Wnt1Cre | 1 | 118 (64.48) | 141 (77.05) | 76 (41.53) | 65 (35.52) | 125 (54.35) | 197 (85.65) | 92 (40.00) | 10.5 (45.65) | 349 (58.95) | 497 (83.95) | 254 (42.91) | 243 (41.05) |
| 2 | 40 (57.97) | 57 (82.61) | 28 (40.58) | 29 (42.03) | 82 (47.40) | 137 (79.19) | 46(26.59) | 91 (52.60) | 282 (57.43) | 386 (78.62) | 177 (36.05) | 209 (42.57) |
| 3 | 197 (62.34) | 230 (72.78) | 111 (35.13) | 119 (37.66) | 221 (61.90) | 250 (70.03) | 114 (31.93) | 136 (38.10) | \* |
| 4 | \* | \* | 406 (65.91) | 461 (74.84) | 251 (40.75) | 210 (34.09) |
| Wnt1Cre/Ednrb | 1 | 7 (63.64) | 8 (72.73) | 4 (36.36) | 4 (36.36) | 141 (51.46) | 230 (80.70) | 93 (32.63) | 137 (48.07) | 109 (58.89) | 136 (74.73) | 63 (34.62) | 73 (40.11) |
| 2 | 0 (0) | 11 (100.00) | 0 (0) | 11 (100.00) | 100 (13.29) | 205 (88.74) | 74 (32.03) | 131 (56.71) | 81 (52.26) | 130(83.87) | 56 (36.13) | 74 (47.74) |
| 3 | 11 (33.33) | 28 (84.85) | 6 (18.18) | 22 (66.67) | 99 (45.21) | 181 (82.65) | 61 (27.85) | 120 (54.79) | 44 (57.89) | 49 (64.47) | 32 (42.11) | 32 (42.11) |
| 4 | 3 (42.86) | 4 (57.14) | 0 (0) | 4 (57.14) | 75 (47.17) | 132 (83.02) | 48 (30.19) | 84 (52.83) | 36 (45.00) | 69 (86.25) | 25 (31.25) | 44 (55.00) |
| 5 | \* | \* | 36 (52.17) | 50 (72.46) | 17 (24.64) | 33 (47.83) |
| 6 | 2 (40.00) | 4 (80.00) | 1 (20.00) | 3 (60.00) | 67 (51.94) | 105 (81.40) | 43 (33.33) | 62 (48.06) | \* |

\*: cell count not included due to partial loss of histological sections or uneven immunohistochemical signals.

**Figure 7q-r source data**

|  |  |
| --- | --- |
| Wnt1Cre/control | Wnt1Cre/Ednrb |
| embryo | # Cre | # pTyr1015 (%) | # pTyr1096 (%) | embryo | # Cre | # pTyr1015 (%) | # pTyr1096 (%) |
| 1 | 13 | 13 (100) |  | 1 | 14 | 9 (64.3) |  |
| 2 | 3 | 2 (66.7) |  | 2 | 3 | 0 (0) |  |
| 3 | 14 | 11 (78.6) |  | 3 | 19 | 9 (47.37) |  |
| 4 | 13 | 12 (92.3) |  | 4 | 5 | 0 (0) |  |
| 5 | 11 | 11 (100) |  | 5 | 16 | 4 (25.0) |  |
| 6 | 23 | 19 (82.6) |  | 6 | 19 | 9 (47.4) |  |
| 7 | 20 | 18 (90.0) |  | 7 | 19 | 9 (47.4) |  |
| 8 | 17 | 15 (88.2) |  | 8 | 1 | 0 (0) |  |
| 9 | 9 | 9 (100) |  | 9 | 8 | 5 (62.5) |  |
| 10 | 3 | 3 (100) |  | 10 | 14 |  | 14 (100) |
| 11 | 24 | 21 (87.5) |  | 11 | 1 |  | 0 (0) |
| 12 | 21 | 20 (95.2) |  | 12 | 0 |  | n/a |
| 13 | 23 | 22 (95.7) |  | 13 | 11 |  | 6 (54.5) |
| 14 | 26 | 23 (88.5) |  | 14 | 2 |  | 2 (100) |
| 15 | 16 |  | 16 (100) | 15 | 5 |  | 5 (100) |
| 16 | 12 |  | 10 (83.3) | 16 | 6 |  | 4 (66.7) |
| 17 | 20 |  | 14 (70.0) | 17 | 4 |  | 4 (100) |
| 18 | 25 |  | 25 (100) | 18 | 2 |  | 2 (100) |
| 19 | 9 |  | 8 (88.9) |  |  |  |  |
| 20 | 8 |  | 7 (87.5) |  |  |  |  |
| 21 | 13 |  | 10 (76.9) |  |  |  |  |
| 22 | 1 |  | 1 (100) |  |  |  |  |
| 23 | 11 |  | 11 (100) |  |  |  |  |
| 24 | 8 |  | 7 (87.5) |  |  |  |  |