

Table S2. Confirmation of Geminin down- and upregulated genes from microarrays: expression changes in embryos after Geminin overexpression or morpholino (MO) knockdown**A Effect of Geminin overexpression and knockdown on downregulated genes from microarrays**

Sample	Marker	Loss of expression		No change		Increased and/or ectopic expression		Number of embryos
		Number	Percentage	Number	Percentage	Number	Percentage	
xGem	Sall1	38	95	2	5	0	0	40
GemMO	Sall1	6	12	6	12	39	76	51
xGem	Szl	37	100	0	0	0	0	37
GemMO	Szl	0	0	5	19	21	81	26
xGem	Vent1	20	100	0	0	0	0	20
GemMO	Vent1	0	0	3	13	20	87	23
xGem	Vent2	13	87	2	13	0	0	15
GemMO	Vent2	0	0	5	17	24	83	29
xGem	Zic1	37	88	5	12	0	0	42
GemMO	Zic1	0	0	10	22	36	78	46
xGem	Zic3	29	83	6	17	0	0	35
GemMO	Zic3	3	7	20	48	19	45	42
xGem	Foxi1	13	100	0	0	0	0	13
GemMO	Foxi1	0	0	0	0	12	100	12
xGem	Grhl1	21	100	0	0	0	0	21
GemMO	Grhl1	4	14	0	0	24	86	28

B Effect of Geminin overexpression and knockdown on upregulated genes from microarrays

Sample	Marker	Loss of expression		No change		Increased and/or ectopic expression		Number of embryos
		Number	Percentage	Number	Percentage	Number	Percentage	
xGem	Fzd7	15	29	7	13	30	58	52
GemMO	Fzd7	26	49	27	51	0	0	53
xGem	H1F00	0	0	20	41	29	59	49
GemMO	H1F00	19	70	7	26	1	4	27
xGem	Oct25	0	0	16	20	64	80	80
GemMO	Oct25	55	85	10	15	0	0	65
xGem	Sox2	7	27	0	0	19	73	26
GemMO	Sox2	25	66	12	32	1	3	38
xGem	Sox3	4	13	0	0	28	88	32
GemMO	Sox3	18	56	13	41	1	3	32
xGem	Sox11	4	13	2	6	25	81	31
GemMO	Sox11	24	86	4	14	0	0	28
xGem	Zic2	0	0	0	0	53	100	53
GemMO	Zic2	12	26	35	74	0	0	47

Geminin Δ coil mRNA or MO were co-injected with β -galactosidase lineage tracer mRNA. After lineage labeling and in situ hybridization, embryos were selected for scoring only if the lineage-labeled region overlapped the marker gene. For each gene analyzed, numbers represent additive data from two to six experiments.