

Figure S1 (Related to Figure 1) Expression of innate immune response gene in *X. tropicalis* and *X. laevis* RNA-seq datasets. Expression of *Tp53inp1*, *Tp53* and *C3ar1* genes in *X. tropicalis* (A) and *X. laevis* (B) in transcripts per million from publicly available RNA-seq datasets.

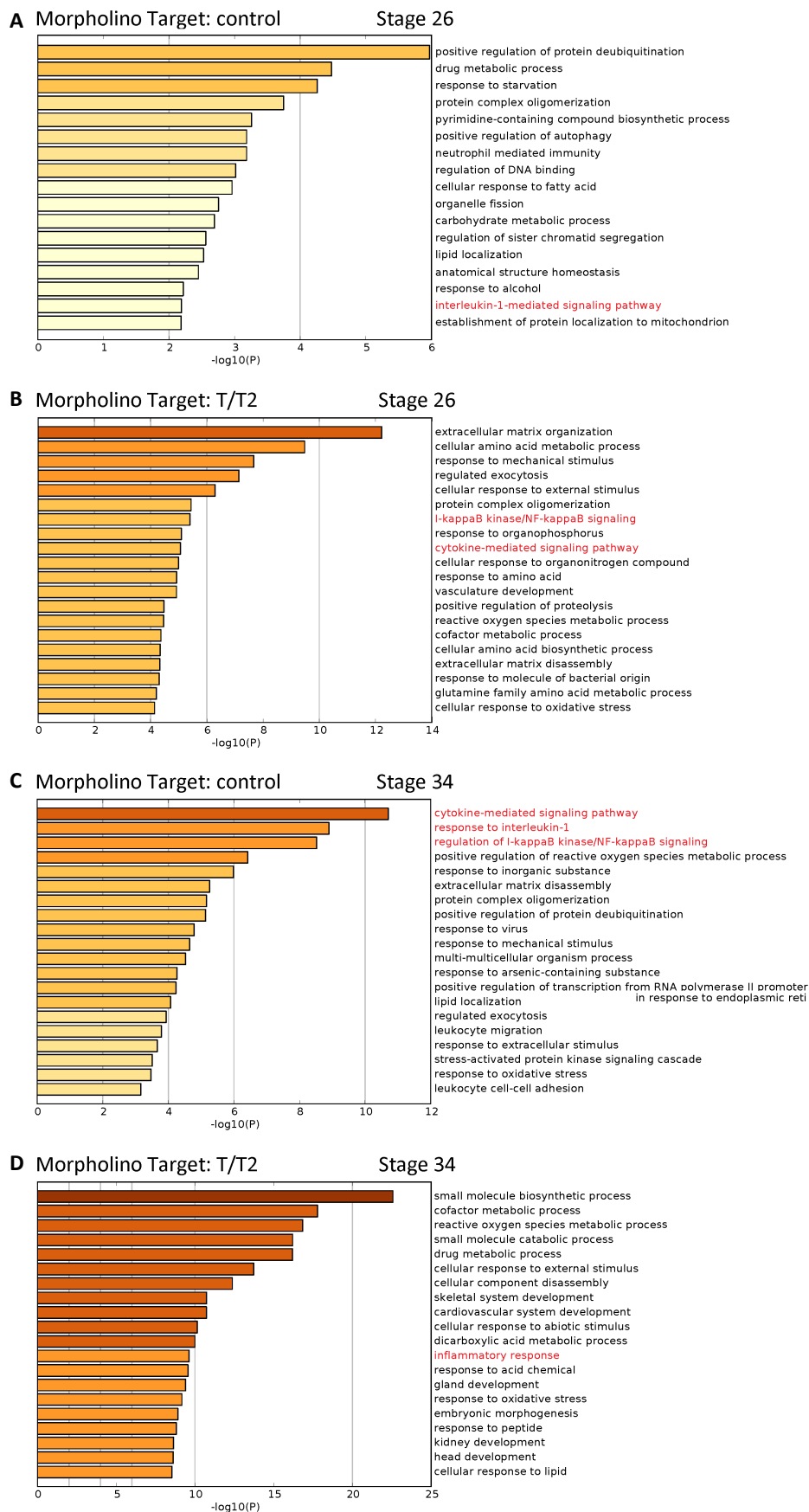


Figure S2 (Related to figure 2 and 3) Gene ontology analysis of differentially expressed genes by various morpholinos in Gentsch et al. datasets. Gene ontology analysis of the control MO and T/T2 morpholino at stage 26 (A,B) and stage 34 (A,B). We used the criteria overlap ≥ 3 , p-value ≤ 0.01 and enrichment ≥ 1.5 to define significance. Red asterisk (*) indicates innate immunity related GO terms.

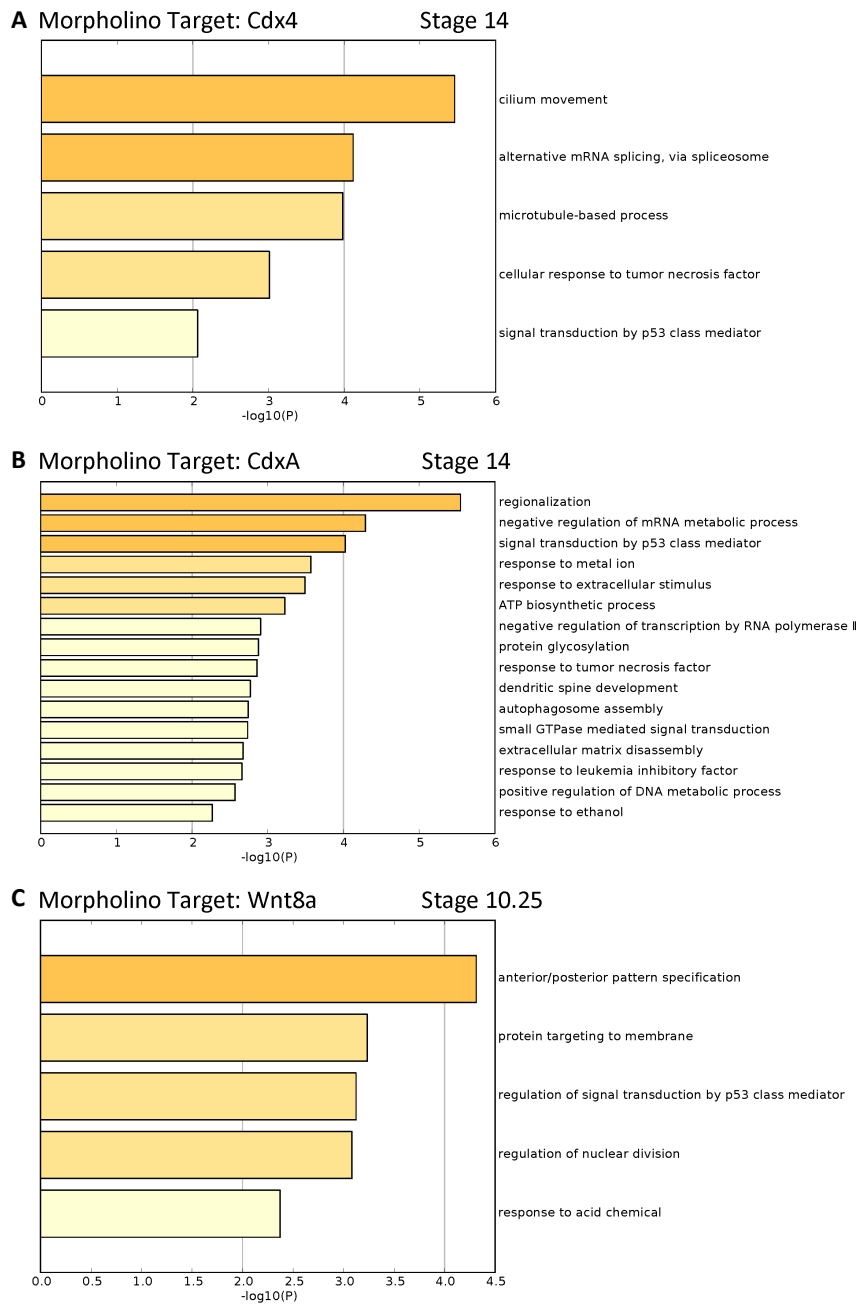


Figure S3 (Related to figure 2 and 3) Gene ontology analysis of differentially expressed genes by various morpholinos in available *X. tropicalis* datasets. Gene ontology analysis of the Cdx4 MO (A), Cdx1/2/4 MO (B), and Wnt8a MO (C). We used the criteria overlap ≥ 3 , p-value ≤ 0.01 and enrichment ≥ 1.5 to define significance.

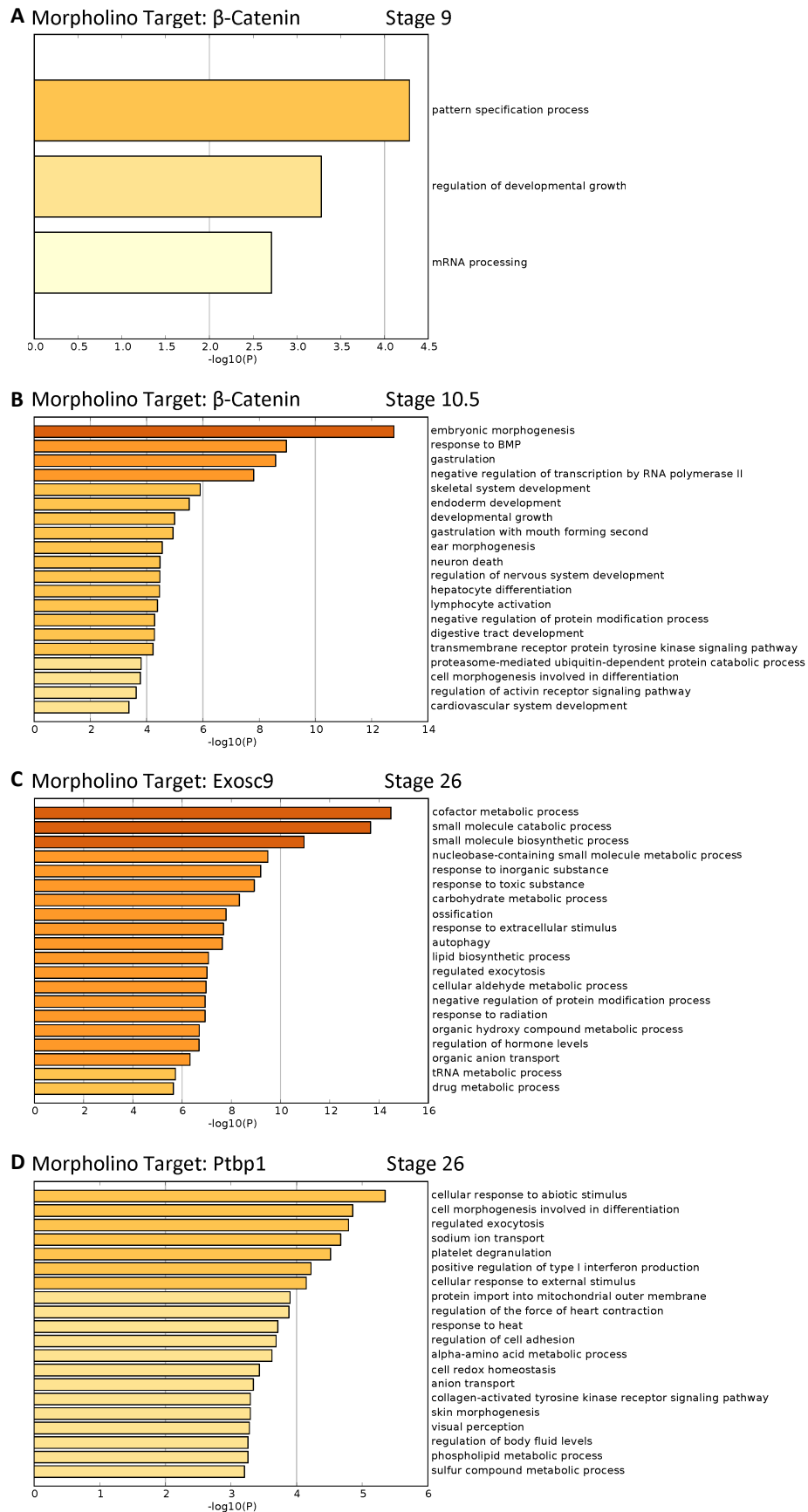


Figure S4 (Related to figure 2 and 3) Gene ontology analysis of differentially expressed genes by various morpholinos in available *Xenopus laevis* datasets. Gene ontology analysis of the β -catenin MO at stage 9 and 10 (A,B), Exosc9 MO (C) and Ptpb1 MO (D). We used the criteria overlap ≥ 3 , p -value ≤ 0.01 and enrichment ≥ 1.5 to define significance.

Accession	Experimental Morpholino(s)	Control Morpholino	Replicates	Organism	Collection Stage	Collected Tissue	Citation
GSE72657	Wnt8a	Yes	3	<i>X. tropicalis</i>	St 10	Whole embryo	Nakamura et al., 2016
GSE53654	Foxh1	No	1	<i>X. tropicalis</i>	St 10	Whole embryo	Chiu et al., 2014
GSE56169	E2a	Yes	2	<i>X. tropicalis</i>	St 10	Whole embryo	Wills et al., 2015
DRA000516, DRA000517, DRA000518, DRA001093, DRA001094, DRA001095	Lim1+Otx2+Otx5, Gsc	Yes	1	<i>X. tropicalis</i>	St 11	Whole embryo	Yasuoka et al., 2014
GSE86382	Mov10	Yes	2 or 3	<i>X. laevis</i>	St 10	Whole embryo	Skariah et al., 2018
GSE93195	Beta-catenin	No	2 or 3	<i>X. laevis</i>	Stage 9 and 10	Whole embryo	Ding et al., 2017
GSE76995	Tbp + Tlf + Tbp2, Gcn5 (Antisense DNA)	No	2	<i>X. laevis</i>	St 10	Whole embryo	Gazdag et al., 2016
GSE76915	Ascl1	Yes	3	<i>X. laevis</i>	St 10	Whole embryo	Gao et al., 2016
GSE50593	Rfx2	No	2	<i>X. laevis</i>	Stage 20	Isolated ectoderm	Kwon et al., 2014
GSE45786	Tcf21	Yes	1	<i>X. laevis</i>	St 44 – 45	Whole embryo	Tandon et al., 2013
GSE71006	Cdx1, Cdx2, Cdx4, Cdx1/2/4	Yes	3	<i>X. tropicalis</i>	Stage 14	Whole embryo	Marlétaz et al., 2015
GSE48663	Tbxt/Tbxt2	Yes	3	<i>X. tropicalis</i>	Stage 32	Whole embryo	Gentsch et al., 2013
GSE89271	Foxn4	No	2	<i>X. laevis</i>	Stage 18	Isolated ectoderm	Campbell et al., 2016
PRJEB8711	Ptbp1, Exosc9	No	1	<i>X. laevis</i>	Stage 26	Whole embryo	Noiret et al., 2016
PRJNA266550	Tra2b	Yes	3	<i>X. laevis</i>	Stage 14	Whole embryo	Dichmann et al., 2015
GSE96655	Tbxt/Tbxt2	Yes	3	<i>X. tropicalis</i>	Stage 24 and Stage 36	Whole embryo	Gentsch et al., 2018

Table S1 (Related to Figure 1-4) List of RNA-seq datasets that contained a morpholino experiment used in this study.

Tropicalis	Tp53inp1		Tp53		C3ar1	
	Reported	Measured	Reported	Measured	Reported	Measured
Control MO	0.97	0.84	1.06	0.96	0.97	1.01
Tra2b MO	1.05	1.07	1.37	1.36	1.43	1.22
Cdx2 MO	1.15	1.35	0.84	0.93	1.55	1.57
Cdx1 MO	1.23	1.33	1.06	1.05	2.69	2.5
Cdx4 MO	2.43	2.55	1.38	1.39	3.19	3.64
CdxA MO	2.06	2.06	1.37	1.27	5.27	4.63
Control MO	1.58	1.48	1.62	1.52	4.37	5.37
T/T2 MO	3.92	3.7	2.67	2.37	14.08	14.8
Laevis	Tp53inp1.L		Tp53.L		C3ar1.L	
	Reported	Measured	Reported	Measured	Reported	Measured
Ptbp1 MO	0.87	1.15	0.74	0.75	0.79	0.99
Rfx2 MO	1.74	1.54	1.68	1.36	0.9	1.03
Exosc9 MO	1.62	1.6	1.57	1.52	3.59	0.72

Table S2 (Related to Figure 1) Comparison of fold change generated between our analysis and the Gentsch et al. (2018) analysis.