

Table S2. *CG31320* and *HEATR2* orthologues share conserved upstream regulatory FOX motifs and X-boxes associated with a master cilia motility transcriptional program.

Organism	Name	Gene	FOX motif	Distance F to ATG	Distance F to txn	X box		Distance X to ATG	Distance between Xs	Distance F to X
<i>D. melanogaster</i>	<i>CG31320</i>	FBgn0051320	<u>ATAACA</u>	-591	+4	<u>GTAGCC</u>	AT <u>AGCAAC</u>	-536	-24	42
			<u>GACGCT</u>			TG <u>AGTAAC</u>	-512		65	
<i>H. sapiens</i>	<i>HEATR2</i>	ENSG00000164818	<u>ACTAACA</u>	-1036	-1016	<u>GCTCCT</u>	TAG <u>GATAAC</u>	-947	-15	89
			<u>ACCAATA</u>	-762	-722	<u>ACCACT</u>	ATC <u>ATCAAC</u>	-932		104
			<u>TCAAACA</u>	-379	-359	<u>GGGGTT</u>	CC <u>GGCGAC</u>	-167	-158	108
			<u>GCCTATA</u>	-275	-235	<u>GTCC</u>	CTT <u>AGTGAC</u>	-9		266
<i>G. gorilla</i>	<i>HEATR2</i>	ENSGGOG00000013100	<u>GACAATA</u>	-142	-142	<u>GGGGCT</u>	CC <u>GGCGAC</u>	-172	-156	30
			<u>GTCC</u>			CTT <u>AGTGAC</u>	-16		126	
<i>B. taurus</i>	<i>HEATR2</i>	ENSBTAG00000048140	<u>GCCAATA</u>	-97	-97	<u>GCAGCC</u>	A <u>GCAGAC</u>	-167	-151	-70
			<u>GTCC</u>			CCT <u>AGTGAC</u>	-16		81	
<i>S. scrofa</i>	<i>HEATR2</i>	ENSSSCG00000027809	<u>ACCAACA</u>	-345	-305	<u>GTAATC</u>	CGC <u>GCCAAC</u>	-50	-34	280
			<u>GCCAATA</u>	-98	-58	<u>GCTCC</u>	CCT <u>GGTGAC</u>	-16		324
<i>C. lupus</i>	<i>HEATR2</i>	ENSCAFG00000011256	<u>TCCAATA</u>	-408	(-51)	<u>GTCC</u>	GC <u>TGCAAC</u>	-545 (-188)		128
			<u>GCCAATA</u>	-97	253	<u>GTGCTC</u>	CGC <u>GCCAAC</u>	-77	-61	20
			<u>GTCC</u>			CCT <u>GGCGAC</u>	-16		81	
<i>M. musculus</i>	<i>Heatr2</i>	ENSMUSG00000025857	<u>GCCAATT</u>	-237	-213	<u>TCAGCC</u>	TCG <u>AGCAAC</u>	-85	-69	137
			<u>GTCC</u>			TT <u>GGAGAC</u>	-16		-16	
<i>R. norvegicus</i>	<i>Heatr2</i>	ENSRNOG00000021312	<u>GCCAATA</u>	-241	-241	<u>GCTGCC</u>	TCG <u>AGCAAC</u>	-85	-69	141
			<u>GTCC</u>			TT <u>GGAGAC</u>	-16		-16	
<i>D. ordii</i>	<i>Heatr2</i>	ENSDORG0000000580	<u>GTCATCA</u>	-141	-141	<u>GCTGTC</u>	GCG <u>AGCGAC</u>	-95	-79	46
			<u>GTCC</u>			TT <u>AGTGAC</u>	-16		225	
<i>C. porcellus</i>	<i>Heatr2</i>	ENSCPOG00000004219	<u>CCCAACA</u>	-211	-211	<u>CCCGCC</u>	CC <u>CACAAC</u>	-178	-162	33
			<u>GTCC</u>			TT <u>GGTGAC</u>	-16		195	
<i>G. gallus</i>	<i>HEATR2</i>	ENSGALG00000003684	<u>ATAAATA</u>	-174	-174	<u>AGCATT</u>	A <u>AAGCAC</u>	-126	-96	48
			<u>GCGTCC</u>			TT <u>AGCAAC</u>	-30		144	
<i>X. tropicalis</i>	<i>heatr2</i>	ENSXETG00000021643	<u>GCAAACC</u>	-283	-283	<u>GTTGCC</u>	T <u>AGCAAC</u>	-114	-28	113
			<u>TCCAACA</u>	-1	-1	<u>CCTGTT</u>	GC <u>TGAGAC</u>	-86		85
<i>T. rubripes</i>	<i>HEATR2</i>	ENSTRUG00000003816	<u>GTCAACA</u>	-380	-380	<u>ACAGCC</u>	AAT <u>CACGAC</u>	-57	-41	5
			<u>GCCAATC</u>	-62	-62	<u>GTTGTC</u>	AT <u>AGCAAC</u>	-16		46

RYMAAYA

RYYNY N(1-3) RRNRAC
GTTGCC AT GGCAAC