

Supplementary Figure 1

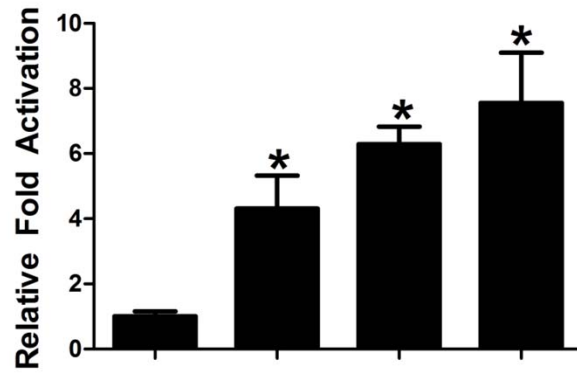
1	GTC	AGG	ATC	ATG	GGA	GAG	AAT	GGC	CCT	CTC	TCG	GAG	ACA	GCC	ATG	45
0				M	G	E	N	G	P	L	S	E	T	A	M	12
46	CTC	TTT	GAA	GAC	GAG	GAA	GAG	GAT	GTG	GAC	AAA	CTT	GGC	CGA	GAA	90
13	L	F	E	D	E	E	E	D	V	D	K	L	G	R	E	27
91	GAG	GAA	GAC	GAG	GAC	AAG	ATG	GCA	AAC	TTT	GAC	AAA	GAC	GGC	AAC	135
28	E	E	D	E	D	K	M	A	N	F	D	K	D	G	N	42
136	ATG	ATC	TCG	GGC	CCC	TCG	TCC	TCC	TCG	GGA	ACC	GTC	TAC	GAT	CGC	180
43	M	I	S	G	P	S	S	S	S	G	T	V	Y	D	R	57
181	ACC	ACC	GTT	CTC	ATC	GAG	CAG	GAC	CCG	ATC	CGT	CTG	GAT	GAG	GAA	225
58	T	T	V	L	I	E	Q	D	P	I	R	L	D	E	E	72
226	GGA	GAA	GAG	GAC	GGT	ATG	ACG	TTC	CTG	CCG	GAG	GGA	GAG	GGA	GAC	270
73	G	E	E	D	G	M	T	F	L	P	E	G	E	G	D	87
271	GAG	GGA	TCT	CTG	GCC	TTC	ATG	GGT	GAC	CCT	GAC	GGC	ATG	TCA	CAG	315
88	E	G	S	L	A	F	M	G	D	P	D	G	M	S	Q	102
316	GGG	TAC	ATC	CAC	CAC	ACC	ATC	TCG	CCG	GAC	CAA	ATC	CAG	TTC	ATC	360
103	G	Y	I	H	H	T	I	S	P	D	Q	I	Q	F	I	117
361	ATT	AAC	CCC	GGG	TCC	ACA	CCT	ATG	CCA	CGA	AAC	ATC	GAG	GGC	GCC	405
118	I	N	P	G	S	T	P	M	P	R	N	I	E	G	A	132
406	ACG	CTG	ACA	TTA	CAC	TCT	GAG	TGC	CCA	GAG	ACC	AAG	CAG	AGA	GAG	450
133	T	L	T	L	H	S	E	C	P	E	T	K	Q	R	E	147
451	GTG	AAG	AGA	TAC	CAG	TGT	CTG	TTC	GAA	GGC	TGT	ACG	CGC	ACC	TAC	495
148	V	K	R	Y	Q	C	L	F	E	G	C	T	R	T	Y	162
496	AGC	ACG	GCG	GGA	AAC	CTG	CGC	ACT	CAT	CAG	AAG	ACG	CAC	CGT	GGC	540
163	S	T	A	G	N	L	R	T	H	Q	K	T	H	R	G	7
541	GAA	TAC	ACG	TTT	GTT	TGC	AAC	CAG	CAA	GGC	TGC	GGC	AAA	GCC	TTC	585
178	E	Y	T	F	V	C	N	Q	Q	G	C	G	K	A	F	192
586	CTC	ACA	TCC	TAC	AGC	CTG	AAG	ATC	CAC	GTC	CGC	GTC	CAC	ACA	AAG	630
193	L	T	S	Y	S	L	K	I	H	V	R	V	H	T	K	207
631	GAA	AAA	CCC	TTC	GAG	TGT	GAC	GTC	CAG	GGC	TGT	GAG	AAA	GCC	TTC	675
208	E	K	P	F	E	C	D	V	Q	G	C	E	K	A	F	222
676	AAC	ACT	CTC	TAC	AGA	CTG	AAA	GCA	CAC	CAG	AGG	CTG	CAC	ACC	GGG	720
223	N	T	L	Y	R	L	K	A	H	Q	R	L	H	T	G	237
721	AAG	ACG	TTT	AAC	TGT	GAA	TCA	GAG	GGA	TGC	ACC	AAG	TAC	TTC	ACC	765
238	K	T	F	N	C	E	S	E	G	C	T	K	Y	F	T	252
766	ACA	CTC	AGT	GAC	CTG	AGG	AAG	CAC	ATC	CGC	ACA	CAC	ACT	GGC	GAA	810
253	T	L	S	D	L	R	K	H	I	R	T	H	T	G	E	267

811	AAA	CCC	TTC	CGG	TGT	GAT	CAC	GAT	GGC	TGT	GGT	AAG	GCT	TTC	GCT	855
268	K	P	F	R	C	D	H	D	G	C	G	K	A	F	A	282
856	GCT	AGT	CAT	CAC	CTG	AAA	ACA	CAT	GTA	CGG	ACA	CAC	ACT	GGA	GAG	900
283	A	S	H	H	L	K	T	H	V	R	T	H	T	G	E	297
901	AAA	CCG	TTT	TTC	TGT	CCC	AGC	GAC	GGC	TGT	GAG	AAA	ACC	TTC	AGC	945
298	K	P	F	F	C	P	S	D	G	C	E	K	T	F	S	312
946	TCT	CAG	TAC	AGT	CTG	AAG	AGC	CAC	ATC	CGG	GGT	CAC	GAC	AAA	GGC	990
313	S	Q	Y	S	L	K	S	H	I	R	G	H	D	K	G	327
991	CCA	TCG	TTC	ACC	GTG	AGC	AGT	CAT	CCA	CTG	TCA	GAG	GAT	GCG	AAT	1035
328	P	S	F	T	V	S	S	H	P	L	S	E	D	A	N	342
1036	CAC	TCG	CTG	TGC	CTC	AGT	GAT	TTG	AGC	CTC	ATT	TCA	ACA	GAC	TCT	1080
343	H	S	L	C	L	S	D	L	S	L	I	S	T	D	S	357
1081	GAG	CTC	CAG	GAG	AAC	CAC	AAT	TCT	CAG	GGT	TTG	GAT	CTG	AAC	AGC	1125
358	E	L	Q	E	N	H	N	S	Q	G	L	D	L	N	S	372
1126	GTC	ACC	CCC	ATA	CGA	ATC	TTT	GAG	CTC	ATG	TTC	CAG	AGT	CCA	GAG	1170
373	V	T	P	I	R	I	F	E	L	M	F	Q	S	P	E	387
1171	AAC	AGC	GTC	AGC	GAG	GAC	GAC	CCC	AAA	CCT	ACA	GAA	AGC	CTA	GCA	1215
388	N	S	V	S	E	D	D	P	K	P	T	E	S	L	A	402
1216	GAG	TCT	TTT	GGA	CTT	GAG	CCG	TCG	CCT	CAG	ACA	GCC	CCT	GCA	GAC	1260
403	E	S	F	G	L	E	P	S	P	Q	T	A	P	A	D	417
1261	GCG	TCC	ACT	CAT	CCA	GCG	TTC	CCT	CAG	CCT	CCT	CCA	TCC	ACC	TGT	1305
418	A	S	T	H	P	A	F	P	Q	P	P	P	S	T	C	432
1306	TCC	TCT	TCC	TGC	TCC	ATC	ACA	GCT	CCT	GCT	CAG	GAT	GCT	CAG	ACT	1350
433	S	S	S	C	S	I	T	A	P	A	Q	D	A	Q	T	447
1351	CCT	CCC	ACA	ACA	CAG	CAA	GCC	CCG	CCC	CCT	GCT	GTC	AGC	AGC	TCG	1395
448	P	P	T	T	Q	Q	A	P	P	P	A	V	S	S	S	462
1396	TCA	CAG	ACC	TCC	TCC	TTC	CCC	AGT	GCT	CCG	CCC	AGC	TCG	TCA	CAG	1440
463	S	Q	T	S	S	F	P	S	A	P	P	S	S	S	Q	477
1441	CCT	GCA	GAA	GTA	TCG	TCT	CCA	TCT	GCA	CCC	TCA	GCC	ACT	CAG	CAC	1485
478	P	A	E	V	S	S	P	S	A	P	S	A	T	Q	H	492
1486	TAC	ATG	ATG	GCT	CAG	CCG	GTG	TCG	TCT	CCA	TCT	GCA	GCC	AGT	GTC	1530
493	Y	M	M	A	Q	P	V	S	S	P	S	A	A	S	V	507
1531	TCC	AGT	GTG	CCG	GCT	GGG	ACA	GCA	GAG	GTG	ACG	GCC	GCA	GTG	ACG	1575
508	S	S	V	P	A	G	T	A	E	V	T	A	A	V	T	522
1576	CAC	ACA	GTG	CCT	TTG	GCT	GCT	CCT	CCT	ACA	ATC	AGC	ATC	GCC	CCC	1620
523	H	T	V	P	L	A	A	P	P	T	I	S	I	A	P	537
1621	ACA	CTC	GGC	CTG	CAG	CCC	AGC	CTT	GTC	ATG	TCA	GAC	CAG	AAC	CTG	1665
538	T	L	G	L	Q	P	S	L	V	M	S	D	Q	N	L	552

Supplementary Figure 2

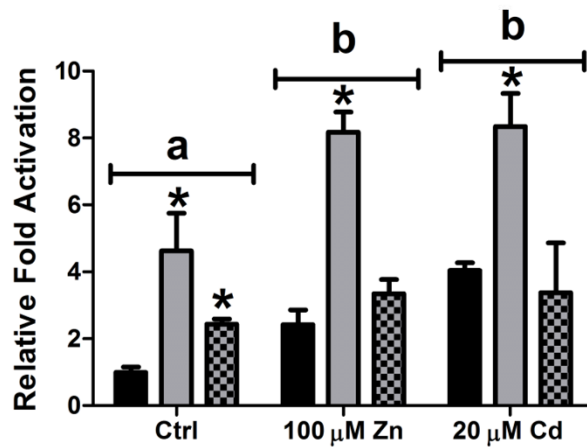
A

Human α A Crystallin Promoter



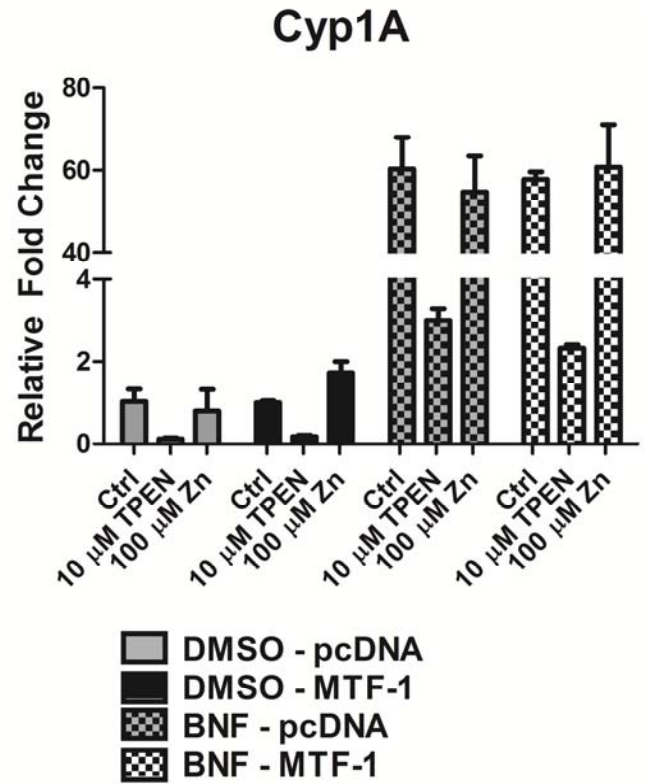
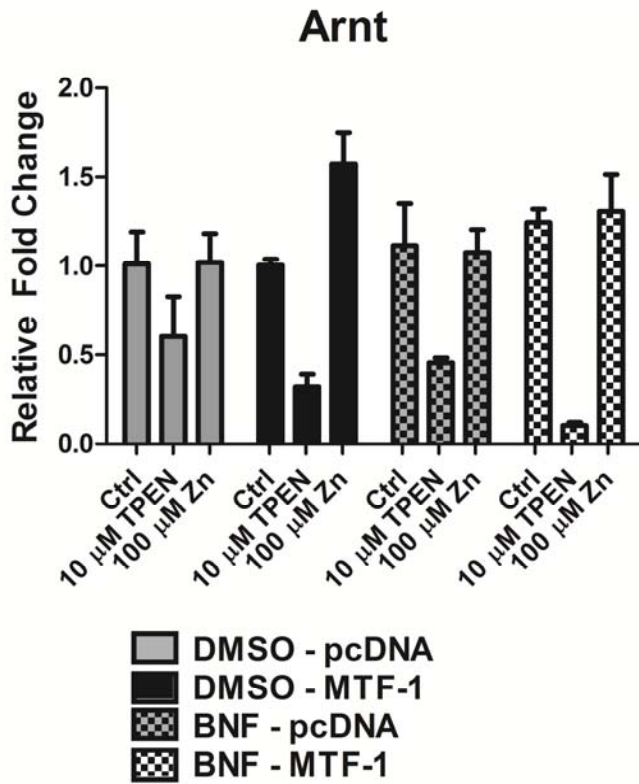
α A crystallin promoter	+	+	+	+
zebrafish MTF-1	+	+	+	+
Zinc concentration (μ M)	0	25	50	75

B

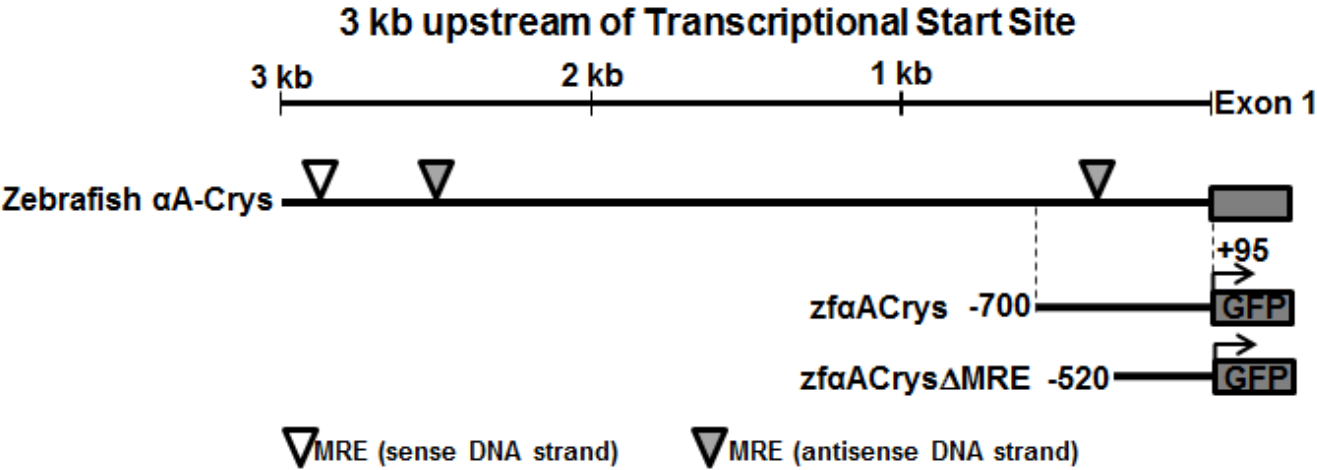


- aA-Crystallin
- aA-Crys + zfMTF-1
- aA-Crys + zfMTF-1 + dnMTF-1

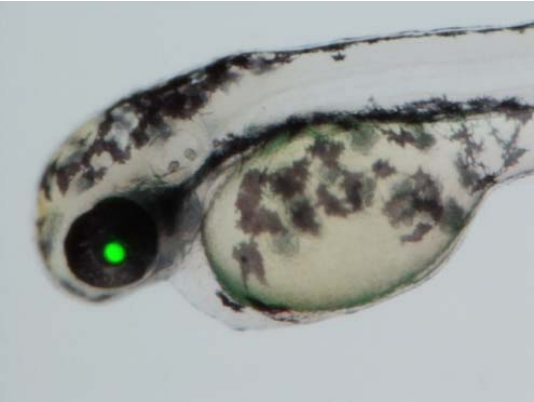
Supplementary Figure 3



Supplementary Figure 4



zfaACrys



zfaACrys Δ MRE

