Table S1 Primer sequences for target genes

Gene	Primer Sequence 5' → 3'	Accession nr.	Reference
ef1aα	Fw CCCCTCCAGGACGTTTACAAA Rev CACACGGCCCACAGGTACA	BT059133.1	Ingerslev et al. (2006). Expression profiling and validation of reference gene candidates in immune relevant tissues and cells from Atlantic salmon (*Salmo salar* L.). Molec Immunol *43*, 1194-1201.
S20	Fwd GCAGACCTTATCCGTGGAGCTA Rev TGGTGATGCGCAGAGTCTTG	NM_001140843.1	Olsvik et al. (2005). Evaluation of potential reference genes in real-time RT-PCR studies of Atlantic salmon. BMC Molec Biol *6*, 21
hprt1	Fwd CGTGGCTCTCTGCGTGCTCA Rev TGGAGCGGTCGCTGTTACGG	BT043501.1	Andreassen et al. (2009). Characterization of full-length sequenced cDNA inserts (FLIcs) from Atlantic salmon (*Salmo salar*). BMC Genomics *10*, 502.
bdnf	Fwd ATGTCTGGGCAGACCGTTAC Rev GTTGTCCTGCATTGGGAGTT	GU108576.1	Vindas et al. (2014). Coping with unpredictability: Dopaminergic and neurotrophic responses to omission of expected reward in Atlantic salmon (*Salmo salar* L.). PLoS ONE *9*, e85543.
pcna	Fwd TGAGCTCGTCGGGTATCTCT Rev CTCGAAGACTAGGGCGAGTG	BT056931.1	Vindas et al. (2014). Coping with unpredictability: Dopaminergic and neurotrophic responses to omission of expected reward in Atlantic salmon (*Salmo salar* L.). PLoS ONE *9*, e85543.
neurod	Fwd CAATGGACAGCTCCCACATCT Rev CCAGCGCACTTCCGTATGA	BT058820.1	Leong et al. (2010). Salmo salar and Esox lucius full-length cDNA sequences reveal changes in evolutionary pressures on a post-tetraploidization genome. BMC Genomics *11*, 279-279.
5-HT$_{1A\alpha}$	Fwd ATGCTGGTCCTCTACGGGCG Rev CGTGGTTCACCGCGCCGTTT	AGKD01067361.1 : 7182-7844*	Thörnqvist et al. (2015). Natural selection constrains personality and brain gene expression differences in Atlantic salmon (Salmo salar). J Exp Biol *218*, 1077-1083.
5-HT$_{1A\beta}$	Fwd TTGATCATGCGTTCCCAGCCGA Rev AAAGGAATGTAGAACGCGCCGA	DY694524	Thörnqvist et al. (2015). Natural selection constrains personality and brain gene expression differences in Atlantic salmon (Salmo salar). J Exp Biol *218*, 1077-1083.
5HTTA	Fwd ACAAACCACTCCCTCCTCCT Rev CGGCTACATGGCTGAAATGC	AGKD03016701.1 : 3425-5030*	Thörnqvist, *et al.* unpublished
5HTTB	Fwd TCATGGCCATCTTTGGAGGG Rev TTGTCACAGTTGGTCCAGGG	AGKD03016179.1 : 111470-112049*	Thörnqvist, *et al.* unpublished
crf	Fwd AACCAGCTCGACGACTCGATGG Rev GCTATGGGCTTGTTGCTGTAACTG	BT057824	Leong et al. (2010). Salmo salar and Esox lucius full-length cDNA sequences reveal changes in evolutionary pressures on a post-tetraploidization genome. BMC Genomics *11*, 279-279.
crfbp	Fwd TGAGCCCAACCAGGTCATCAATGT Rev TCCCTTCATCACCCAGCCATCAAA	BT059529	Leong et al. (2010). Salmo salar and Esox lucius full-length cDNA sequences reveal changes in evolutionary pressures on a post-tetraploidization genome. BMC Genomics *11*, 279-279.
crf$_1$	Fwd TGACCATCTGGGCTGTTGTGATCT Rev TAAGATTGGTGGACAGCAGGAGCA	------------	Nilson et al., unpublished
crf$_2$	Fwd ACCATGGATGCTACGATTTACCA Rev CTGTCTTGAAATGAATCCATCACACTGC	------------	Nilson et al., unpublished

Table S2 Mean (± SEM) relative transcript abundance of target genes (to the reference gene *S20)*, serotonin (5-HT) and dopamine (DA) neurochemistry, as well as plasma cortisol in reactive and proactive fish at basal and acute stress conditions in dorsolateral pallium (Dl), dorsomedial pallium (Dm) and ventral part of the ventral telencephalon (Vv). Two-Way ANOVA statistics for effect of coping style, stress and the interaction between style and stress (if it was maintained in the model which was indicated by "lack of fit" analysis), are given for each variable.

	Reactive		Proactive		ANOVA		
	Control (*n* = 10)	Stress (*n* = 14)	Control (*n* = 12)	Stress (*n* =8)	Style	Stress	Interaction
Dl							
pcna	0.27 ± 0.12	0.08 ± 0.02	0.07 ± 0.02	0.15 ± 0.05	$F_{(3,26)}$ = 1.71, p = 0.2	$F_{(3,26)}$ = 1.05, p = 0.31	$F_{(3,26)}$ = 8.04, **p = 0.009**
bdnf	0.17 ± 0.04	0.17 ± 0.02	0.17 ± 0.03	0.38 ± 0.08	$F_{(3,35)}$ = 4.02, **p = 0.05**	$F_{(3,35)}$ = 6.2, **p = 0.02**	$F_{(3,35)}$ = 4.62, **p = 0.04**
neurod	0.06 ± 0.03	0.03 ± 0.005	0.04 ± 0.008	0.05 ± 0.01	$F_{(2,24)}$ = 1.47, p = 0.24	$F_{(2,24)}$ = 0.13, p = 0.72	------
5-HT$_{1A\alpha}$	0.01 ± 0.004	0.03 ± 0.01	0.02 ± 0.001	0.02 ± 0.005	$F_{(2,27)}$ = 0.02, p = 0.88	$F_{(2,27)}$ = 3.3, p = 0.08	------
5-HT$_{1A\beta}$	0.02 ± 0.004	0.01 ± 0.001	0.02 ± 0.008	0.01 ± 0.006	$F_{(2,13)}$ = 0.02, p = 0.89	$F_{(2,13)}$ = 1.56, p = 0.23	------
5-HTTA	------	0.006 ± 0.001	0.005 ± 0.001	0.004 ± 0.001	------	------	------
5-HTTB	------	------	------	------	------	------	------
crf	0.04 ± 0.02	0.02 ± 0.003	0.02 ± 0.004	0.02 ± 0.003	$F_{(2,31)}$ = 1.47, p = 0.24	$F_{(2,31)}$ = 1.79, p = 0.19	------
crfbp	0.04 ± 0.01	0.03 ± 0.005	0.03 ± 0.007	0.04 ± 0.01	$F_{(2,29)}$ = 0.12, p = 0.73	$F_{(2,29)}$ = 0.35, p = 0.55	------
crf$_1$	0.005 ± 0.001	0.006 ± 0.001	0.005 ± 0.001	0.009 ± 0.001	$F_{(2,26)}$ = 6.55, **p = 0.02**	$F_{(2,26)}$ = 4.25, p = 0.05	------
crf$_2$	------	0.009 ± 0.002	0.02 ± 0.006	0.01 ± 0.002	------	------	------
5-HT	125 ± 11	131 ± 11	125 ± 11	105 ± 6	$F_{(2,40)}$ = 1.41, p = 0.24	$F_{(2,40)}$ = 0.31, p = 0.58	------
5-HIAA	26 ± 4	42 ± 4	22 ± 2	31 ± 3	$F_{(2,40)}$ = 4.16, p = 0.05	$F_{(2,40)}$ = 14.9, **p < 0.001**	------
DA	92 ± 11	82 ± 12	72 ± 12	48 ± 10	$F_{(2,39)}$ = 5.98, **p = 0.02**	$F_{(2,39)}$ = 2.89, p = 0.1	------
DOPAC	10 ± 1	9 ± 2	6 ± 2	5 ± 1	$F_{(2,39)}$ = 8.13, **p = 0.007**	$F_{(2,39)}$ = 0.27, p = 0.6	------
Dm							
pcna	0.09 ± 0.02	0.08 ± 0.01	0.08 ± 0.01	0.07 ± 0.01	$F_{(2,34)}$ = 0.12, p = 0.73	$F_{(2,34)}$ = 0.41, p = 0.53	------
bdnf	0.14 ± 0.03	0.1 ± 0.02	0.14 ± 0.03	0.14 ± 0.02	$F_{(2,33)}$ = 0.5, p = 0.48	$F_{(2,33)}$ = 0.99, p = 0.33	------
neurod	0.03 ± 0.01	0.02 ± 0.002	0.01 ± 0.002	0.02 ± 0.006	$F_{(2,34)}$ = 1.04, p = 0.31	$F_{(2,34)}$ = 0.35, p = 0.56	------
5-HT$_{1A\alpha}$	0.01 ± 0.002	0.009 ± 0.001	0.01 ± 0.002	0.02 ± 0.004	$F_{(2,34)}$ = 5.78, **p = 0.02**	$F_{(2,34)}$ = 0.03, p = 0.86	------
5-HT$_{1A\beta}$	0.003 ± 0.0004	0.004 ± 0.0005	0.005 ± 0.001	0.008 ± 0.001	$F_{(2,22)}$ = 13.7, **p = 0.001**	$F_{(2,22)}$ = 4.3, p = 0.05	------
5-HTTA	0.004 ± 0.001	0.003 ± 0.001	0.004 ± 0.0001	0.004 ± 0.001	$F_{(2,13)}$ = 0.62, p = 0.44	$F_{(2,13)}$ = 0.1, p = 0.76	------
5-HTTB	------	------	------	------	------	------	------
crf	0.03 ± 0.01	0.01 ± 0.003	0.01 ± 0.002	0.02 ± 0.002	$F_{(2,30)}$ = 0.52, p = 0.48	$F_{(2,30)}$ = 3.19, p = 0.08	------
crfbp	0.01 ± 0.001	0.009 ± 0.002	0.008 ± 0.001	0.01 ± 0.002	$F_{(3,26)}$ = 0.39, p = 0.54	$F_{(3,26)}$ = 0.05, p = 0.83	$F_{(3,26)}$ = 6.16, **p = 0.02**
crf$_1$	0.006 ± 0.001	0.005 ± 0.001	0.005 ± 0.001	0.006 ± 0.002	$F_{(2,37)}$ = 0.05, p = 0.83	$F_{(2,37)}$ = 0.04, p = 0.83	------
crf$_2$	------	------	------	------	------	------	------
5-HT	208 ± 4	174 ± 6	163 ± 8	205 ± 17	$F_{(2,37)}$ = 0.01, p = 0.92	$F_{(2,37)}$ = 0.4, p = 0.53	------
5-HIAA	22 ± 4	23 ± 2	18 ± 2	33 ± 4	$F_{(3,39)}$ = 0.9, p = 0.35	$F_{(3,39)}$ = 7.2, **p = 0.01**	$F_{(3,39)}$ = 5.15, **p = 0.03**
DA	76 ± 24	65 ± 12	36 ± 5	49 ± 10	$F_{(2,37)}$ = 1.44, p = 0.24	$F_{(2,37)}$ = 0.16, p = 0.69	------

DOPAC	10 ± 3	9 ± 2	8 ± 2	4 ± 1	$F_{(2,35)} = 1.69$, $p = 0.2$	$F_{(2,35)} = 1.41$, $p = 0.24$	------
Vv							
pcna	0.17 ± 0.07	0.06 ± 0.02	0.17 ± 0.04	0.09 ± 0.02	$F_{(2,24)} = 0.33$, $p = 0.57$	$F_{(2,24)} = 5.45$, $\mathbf{p = 0.03}$	------
bdnf	0.16 ± 0.05	0.05 ± 0.01	0.07 ± 0.02	0.39 ± 0.14	$F_{(3,23)} = 3.22$, $p = 0.09$	$F_{(3,23)} = 1.59$, $p = 0.22$	$F_{(3,23)} = 11.69$, $\mathbf{p = 0.002}$
neurod	0.26 ± 0.25	0.04 ± 0.01	0.02 ± 0.005	0.03 ± 0.009	$F_{(2,12)} = 0.43$, $p = 0.53$	$F_{(2,12)} = 3.9$, $p = 0.07$	------
$5\text{-}HT_{1A\alpha}$	0.02 ± 0.008	0.02 ± 0.002	0.04 ± 0.01	0.03 ± 0.004	$F_{(2,24)} = 2.75$, $p = 0.11$	$F_{(2,24)} = 0.33$, $p = 0.57$	------
$5\text{-}HT_{1A\beta}$	0.01 ± 0.002	0.008 ± 0.0006	0.02 ± 0.006	0.01 ± 0.005	$F_{(2,19)} = 4.84$, $\mathbf{p = 0.04}$	$F_{(2,19)} = 1.32$, $p = 0.26$	------
5-HTTA	0.006 ± 0.001	0.003 ± 0.0004	0.01 ± 0.005	------	------	------	------
5-HTTB	------	------	------	------	------	------	------
crf	------	------	------	------	------	------	------
crfbp	------	------	------	------	------	------	------
crf_1	------	------	------	------	------	------	------
crf_2	------	------	------	------	------	------	------
5-HT	------	------	------	------	------	------	------
5-HIAA	------	------	------	------	------	------	------
DA	577 ± 69	462 ± 26	545 ± 72	503 ± 87	$F_{(2,33)} = 0.01$, $p = 0.93$	$F_{(2,33)} = 1.65$, $p = 0.21$	------
DOPAC	34 ± 12	22 ± 2	36 ± 7	29 ± 9	$F_{(2,28)} = 0.01$, $p = 0.97$	$F_{(2,28)} = 0.57$, $p = 0.46$	------
Plasma							------
Cortisol	5 ± 1	150 ± 24	6 ± 2	96 ± 17	$F_{(3,108)} = 14$, $\mathbf{p < 0.001}$	$F_{(3,108)} = 143$, $\mathbf{p < 0.001}$	$F_{(3,108)} = 9.36$, $\mathbf{p = 0.002}$

Table S3 Mean (± SD) Cq values and efficiencies for target genes in reactive and proactive fish at basal and acute stress conditions in dorsolateral pallium (Dl), dorsomedial pallium (Dm) and ventral part of the central telencephalon (Vv). The total number of individuals per group is depicted as N, while *n* indicates the number of individuals with a Cq ≤ 34.5 per target gene.

		Reactive				Proactive			
	Efficiency	Control	N = 10	Stress	N = 14	Control	N = 12	Stress	N = 8
Dl									
pcna	1.84 ± 0.02	29.6 ± 1.8	*n* = 6	30.5 ± 1.8	*n* = 10	30.3 ± 2.2	*n* = 11	29.3 ± 2	*n* = 8
bdnf	1.87 ± 0.004	30 ± 2	*n* = 9	28.4 ± 1.6	*n* = 14	28.6 ± 2	*n* = 12	28.1 ± 2.3	*n* = 8
neurod	1.81 ± 0.01	30.6 ± 3.1	*n* = 3	32.3 ± 2	*n* = 11	30.4 ± 3.4	*n* = 10	31.9 ± 1.4	*n* = 7
$5\text{-}HT_{1A\alpha}$	1.86 ± 0.01	32.2 ± 2.4	*n* = 6	31.3 ± 1.2	*n* = 10	31.9 ± 1	*n* = 12	31.4 ± 0.2	*n* = 6
$5\text{-}HT_{1A\beta}$	1.83 ± 0.004	33.7 ± 0.6	*n* = 3	33.2 ± 0.7	*n* = 5	32.9 ± 0.5	*n* = 4	33.5 ± 0.7	*n* = 4
5-HTTA	1.86 ± 0.02	----	----	33.2 ± 0.8	*n* = 4	33.7 ± 0.6	*n* = 6	33.2 ± 0.6	*n* = 2
5-HTTB	1.81 ± 0.03	25.2 ± 0.4	*n* = 2	----	----	----	----	----	----
crf	1.89 ± 0.003	32.1 ± 1.8	*n* = 7	31.9 ± 1.4	*n* = 13	31.2 ± 1.3	*n* =11	31 ± 1.1	*n* = 7
crfbp	1.84 ± 0.004	33.2 ± 1.5	*n* = 7	31.9 ± 1.6	*n* = 11	31.3 ± 1.5	*n* = 12	32.5 ± 2.9	*n* = 7
crf_1	1.88 ± 0.02	33.7 ± 0.9	*n* = 4	33.2 ± 0.6	*n* = 9	32.8 ± 0.9	*n* = 10	32.7 ± 1	*n* = 8
crf_2	1.8 ± 0.006	----	----	33.7 ± 0.7	*n* = 3	33.7 ± 0.5	*n* = 3	33.6 ± 0.9	*n* = 2
Dm									
pcna	1.85 ± 0.009	28.7 ± 1.3	*n* = 10	28.6 ± 1.3	*n* = 14	28.9 ± 1.2	*n* = 11	29.3 ± 1.9	*n* = 7
bdnf	1.88 ± 0.007	27.6 ± 1.4	*n* = 10	27.1 ± 1.3	*n* = 14	27.1 ± 2	*n* = 11	27.3 ± 1.9	*n* = 8
neurod	1.82 ± 0.001	32.7 ± 1.4	*n* = 9	32.6 ± 1	*n* = 12	32.4 ± 1.6	*n* = 10	32.9 ± 1	*n* = 7
$5\text{-}HT_{1A\alpha}$	1.88 ± 0.009	31.4 ± 0.8	*n* = 10	31 ± 0.6	*n* = 14	31 ± 1	*n* = 11	30.8 ± 0.9	*n* = 7
$5\text{-}HT_{1A\beta}$	1.84 ± 0.003	33.4 ± 0.8	*n* = 4	32.8 ± 0.8	*n* = 10	33.4 ± 0.9	*n* = 6	32.8 ± 1.2	*n* = 6
5-HTTA	1.87 ± 0.02	33.6 ± 0.5	*n* = 4	33.4 ± 0.7	*n* = 5	32.7 ± 0.5	*n* = 3	33.1 ± 1	*n* = 4
5-HTTB	1.82 ± 0.04	----	----	28.9 ± 6.5	*n* = 2	----	----	----	----
crf	1.89 ± 0.003	31 ± 1.4	*n* = 9	31 ± 1.5	*n* = 13	31.1 ± 1.4	*n* = 10	30.5 ± 1.1	*n* = 6
crfbp	1.83 ± 0.008	32.7 ± 0.9	*n* = 7	33.1 ± 0.9	*n* = 12	32.7 ± 1.2	*n* = 8	32.7 ± 0.8	*n* = 6
crf_1	1.89 ± 0.01	32.5 ± 0.7	*n* = 10	32.6 ± 0.7	*n* = 14	32.4 ± 0.8	*n* = 10	32.7 ± 0.6	*n* = 7
crf_2	1.77 ± 0.004	----	----	----	----	----	----	----	----
Vv									
pcna	1.84 ± 0.02	29.4 ± 2.3	*n* = 6	30 ± 2.4	*n* = 10	30.1 ± 1.5	*n* = 9	30.8 ± 2.6	*n* = 6
bdnf	1.87 ± 0.01	29.4 ± 3.1	*n* = 7	30.3 ± 2.2	*n* = 12	29.2 ± 2.2	*n* = 8	30.3 ± 2.4	*n* = 7
neurod	1.83 ± 0.02	33.2 ± 0.7	*n* = 6	32.1 ± 1.3	*n* = 7	32.7 ± 1.3	*n* = 8	33.8 ± 0.4	*n* = 6
$5\text{-}HT_{1A\alpha}$	1.86 ± 0.02	32.2 ± 1.8	*n* = 6	31.8 ± 1.7	*n* = 10	31.3 ± 1.9	*n* = 8	32.1 ± 2	*n* = 5
$5\text{-}HT_{1A\beta}$	1.83 ± 0.03	33.2 ± 0.8	*n* = 7	32.9 ± 1.3	*n* = 8	33 ± 1	*n* = 7	33.2 ± 1.1	*n* = 3
5-HTTA	1.86 ± 0.03	33.2 ± 0.6	*n* = 2	33.9 ± 0.7	*n* = 2	33.9 ± 0.5	*n* = 3	----	----
5-HTTB	1.84 ± 0.01	----		----		----		----	
crf	1.84 ± 0.01	32.5 ± 0.5	*n* = 3	33 ± 0.5	*n* = 7	32.7 ± 0.6	*n* = 5	32.9 ± 0.4	*n* = 2

crfbp	1.85 ± 0.02	32.9 ± 0.9	*n* = 3	33.3 ± 0.3	*n* = 4	31.8 ± 0.5	*n* = 4	----	----
crf₁	1.87 ± 0.02	33 ± 0.5	*n* = 3	33 ± 0.3	*n* = 5	33.6 ± 0.2	*n* = 4	32.9 ± 0.2	*n* = 2
crf₂	1.79 ± 0.01	----	----	34.3 ± 0.04	*n* = 2	34.4 ± 0.1	*n* = 2	----	----

Table S4 All monoamine neurochemistry and gene expression data used for the statistical analysis

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