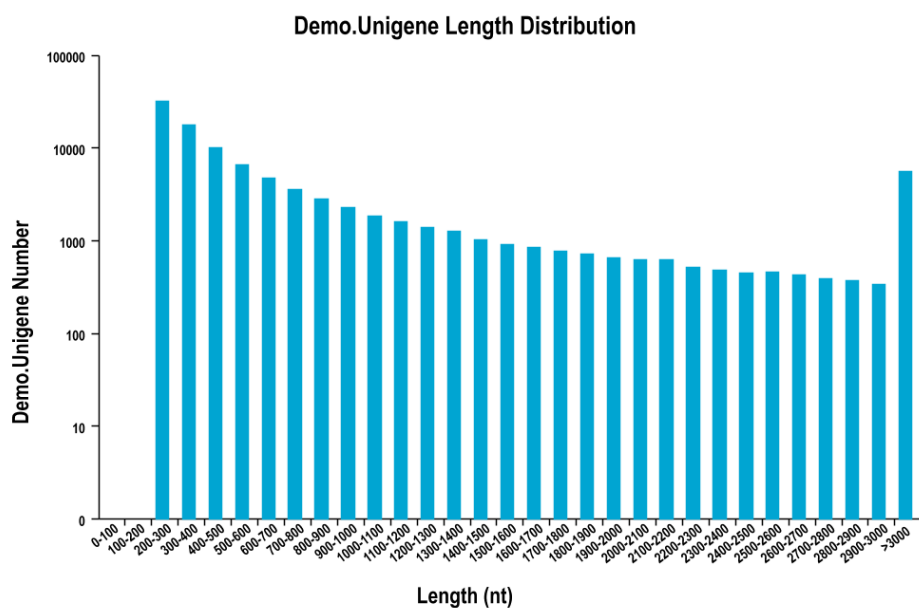
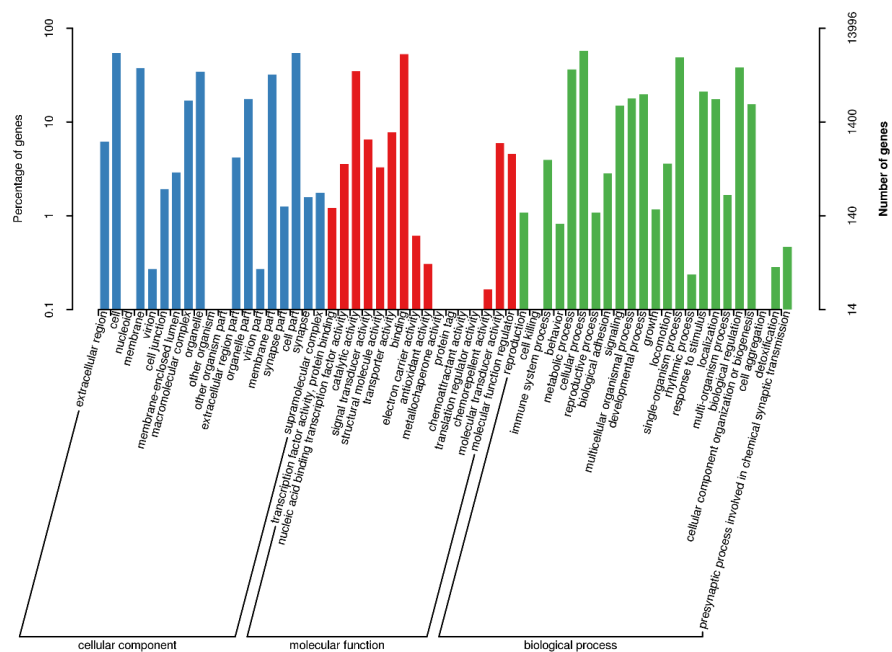


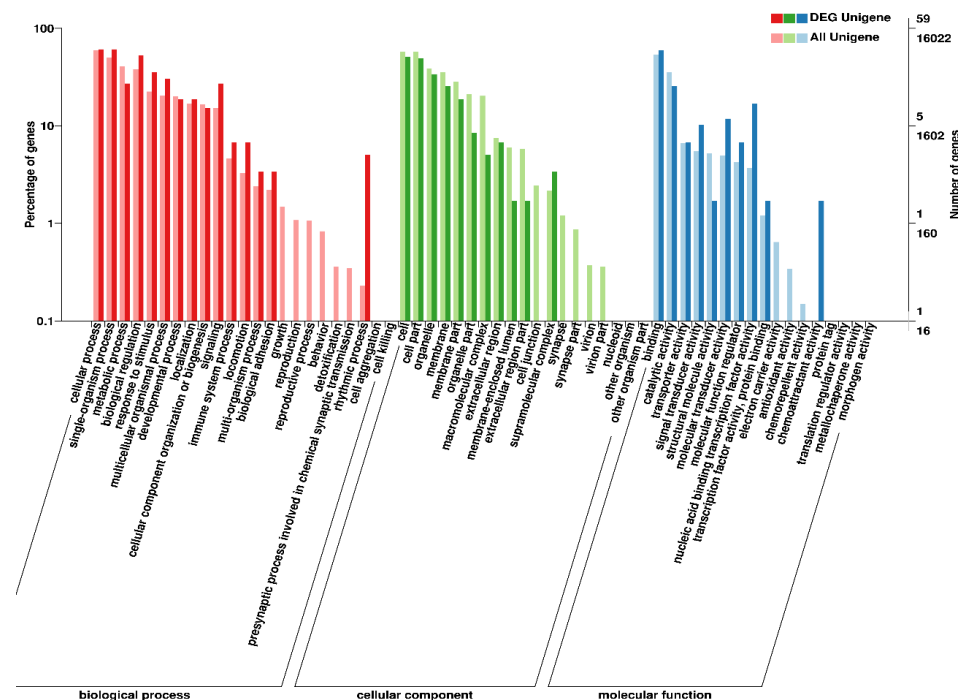
**Figure S1.** The information of decrease of DO and the number of loss balance fish with time.



**Figure S2** Length distribution of the unigenes from heart transcriptomes of bighead carp under hypoxia stress.

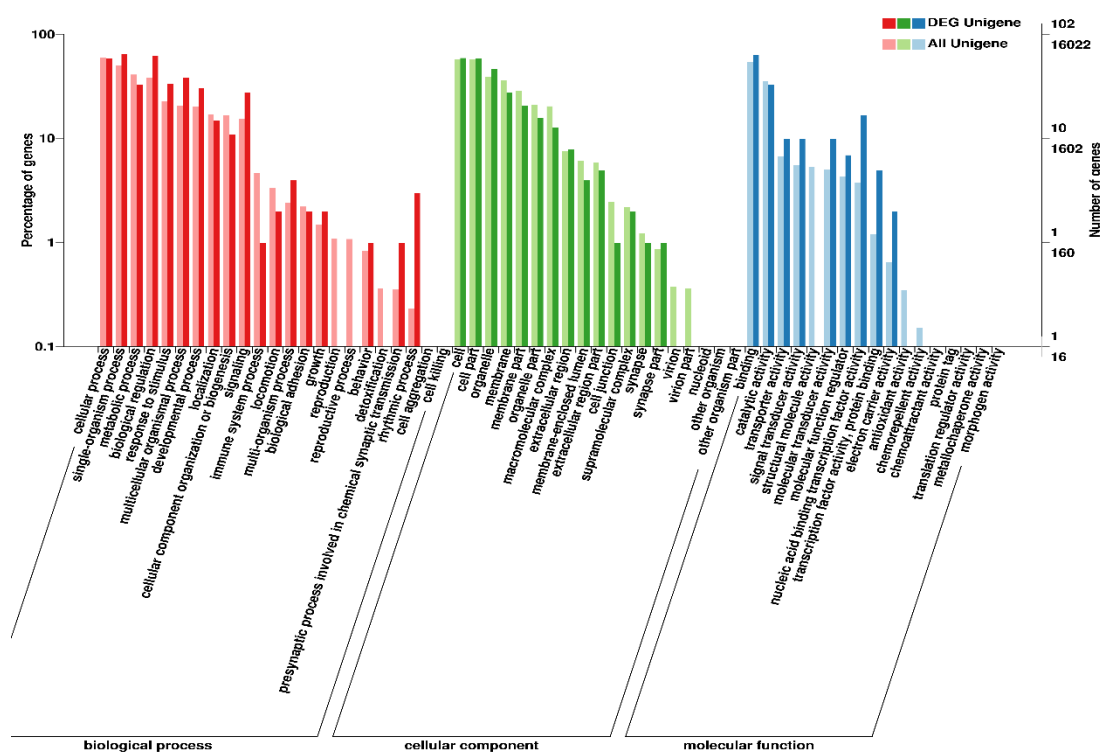


(a)

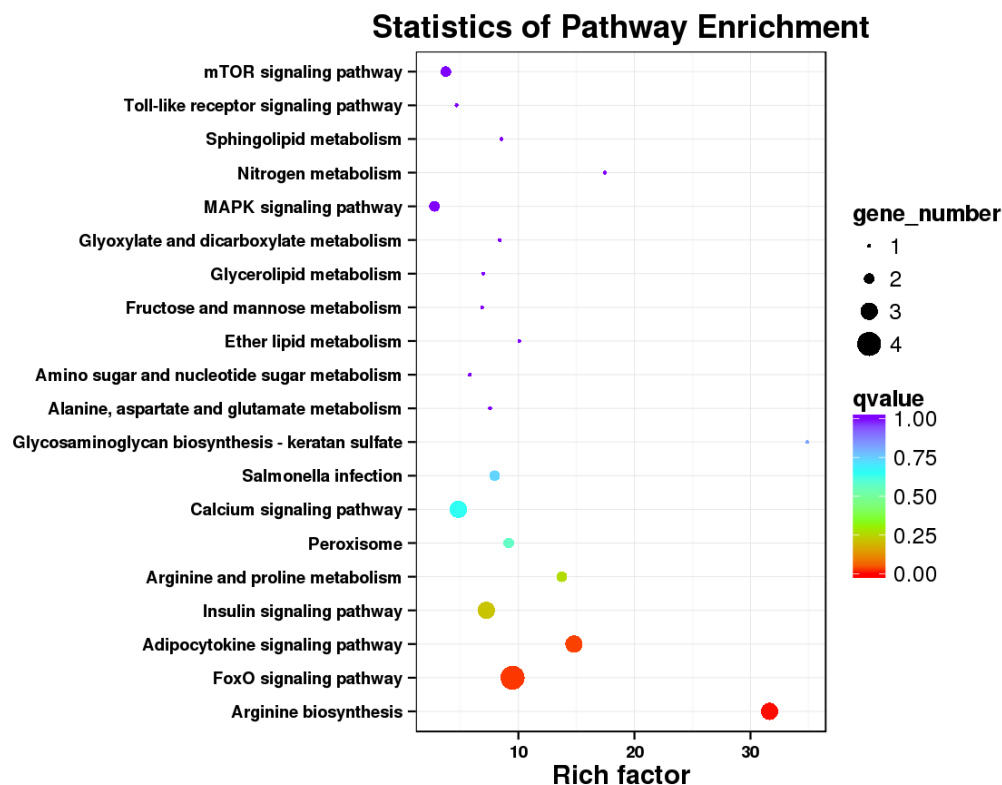


(b)

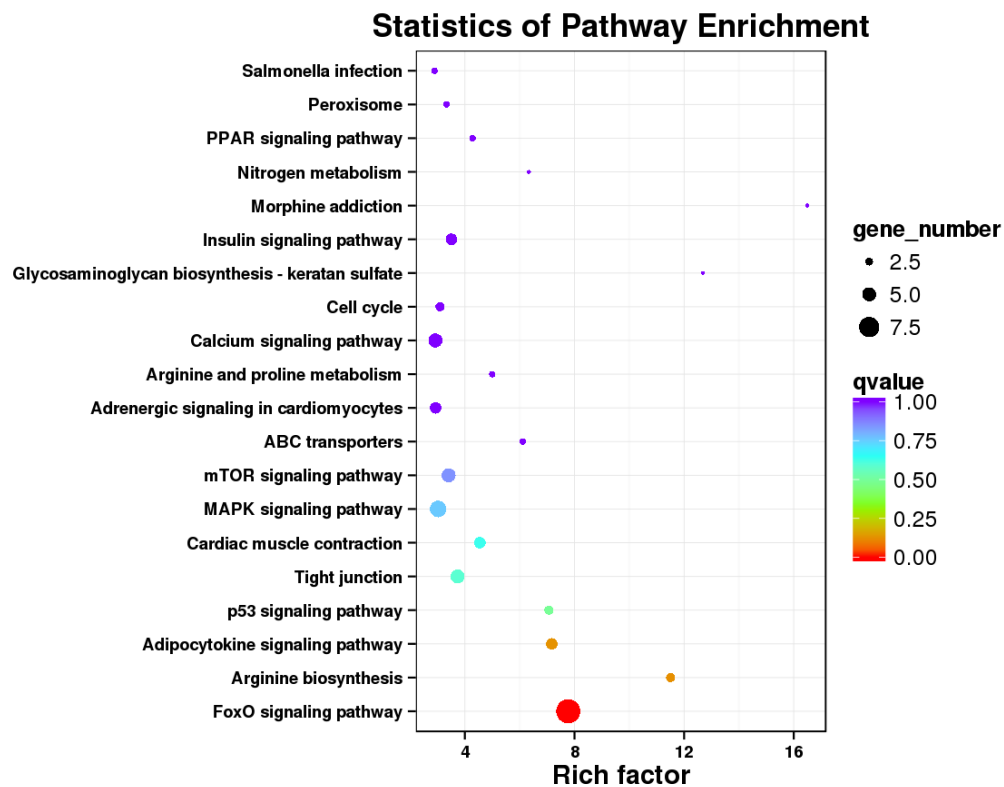
**Figure S3.** (a). Gene ontology classification of all unigenes in heart transcriptomes of bighead carp under hypoxia stress; (b). Gene ontology classification of the DEGs from NC vs HS group of transcriptomes of bighead carp under hypoxia stress.



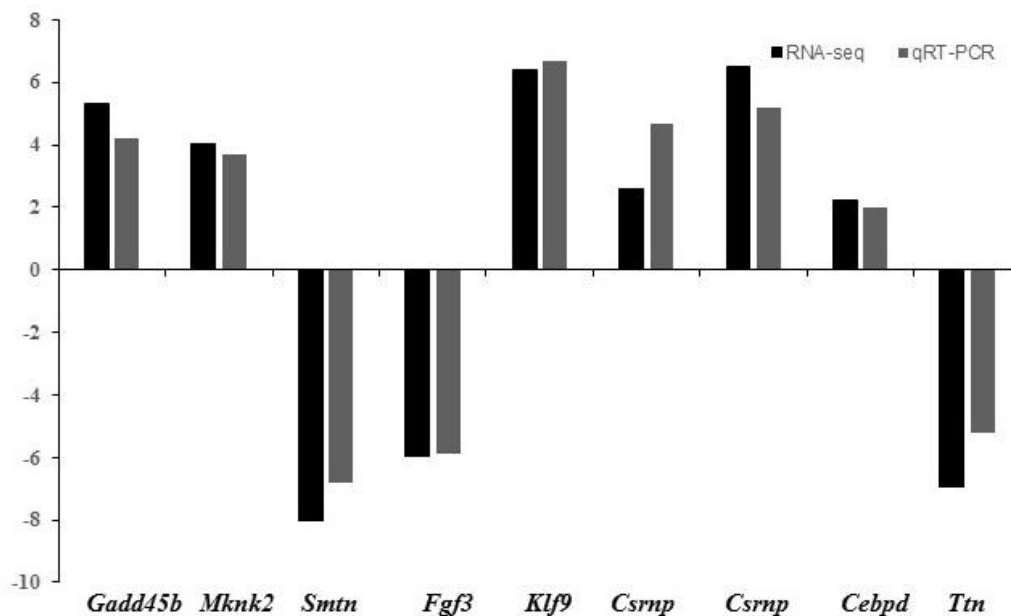
**Figure S4.** Gene ontology classification of the DEGs from NC vs HT group of transcriptomes of bighead carp under hypoxia stress.



**Figure S5.** KEGG pathway enrichment of the DEGs from NC and HS groups of transcriptomes of bighead carp under hypoxia stress.



**Figure S6.** KEGG pathway enrichment of DEGs from NC and HT group of transcriptomes of bighead carp under hypoxia stress.



**Figure S7.** Illustration of qRT-PCR confirmation results for 9 randomly selected DEGs from the heart transcriptome of bighead carp under hypoxia stress. Gene expression levels are expressed as mean normalized ratios ( $n = 3, \pm SE$ ).  $\beta$ -Actin is used as a reference gene.

**Table S1.** Sequence statistics for individual paired-end reads from RNA-Seq libraries of bighead carp.

Samples	Clean reads	Q30	GC content	Mapped reads	Mapped ratio
HS1	27,118,672	95.07%	46.31%	22,426,752	82.70%
HS2	30,586,580	95.27%	46.41%	25,140,568	82.19%
HS3	29,372,299	95.09%	46.91%	23,745,084	80.84%
HT2	24,517,927	95.14%	46.77%	20,250,040	82.59%
HT2	21,941,179	93.96%	44.75%	18,204,812	82.97%
HT3	23,433,598	94.96%	46.07%	19,428,720	82.91%
HC1	31,345,416	95.17%	46.93%	25,874,293	82.55%
HC2	21,088,217	94.81%	44.72%	17,567,178	83.30%
HC3	23,534,816	95.03%	46.62%	19,298,044	82.00%

**Table S2.** Length distribution of the assembled transcriptomic contigs in bighead carp under hypoxia stress.

Length (bp)	Total Number of Unigenes	Percentage of Unigenes	Total Number of Transcripts	Percentage of Transcripts
200-300	31790	31.53%	36702	17.73%
300-500	27816	27.59%	37161	17.95%
500-1000	19960	19.80%	40266	19.45%
1000-2000	11009	10.92%	41885	20.24%
2000+	10240	10.16%	50952	24.62%
Total Number	100817		206970	
Total Length	85734049		303781753	
N50 Length	1633		2675	
Mean Length	850.392781		1467.757419	



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