

Figure S1. Initial validation of candidate biomarkers. The mRNA expression levels of DFFA, DPY30, DRG1, EIF3D, GRB2 and HMGB1 in 5 hepatobiliary system cancer cell lines and a normal biliary epithelial cell line (HiBECs) detected by RT-qPCR.

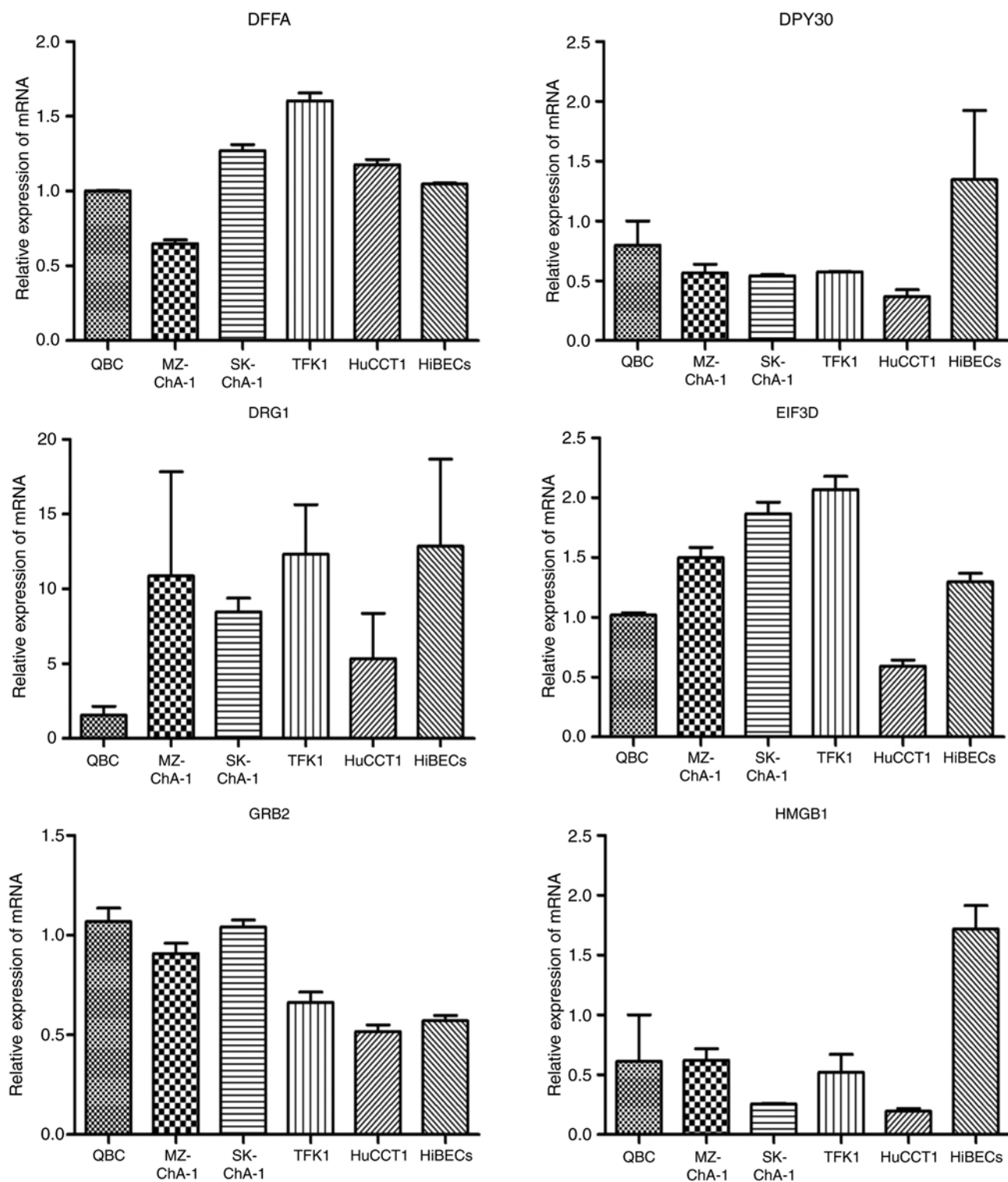


Figure S2. Initial validation of candidate biomarkers. The mRNA expression levels of MCM5, NAA20, TPD52, EFNA1, PDE12 and DNAJB1 5 hepatobiliary system cancer cell lines and a normal biliary epithelial cell line (HiBECs) detected by RT-qPCR.

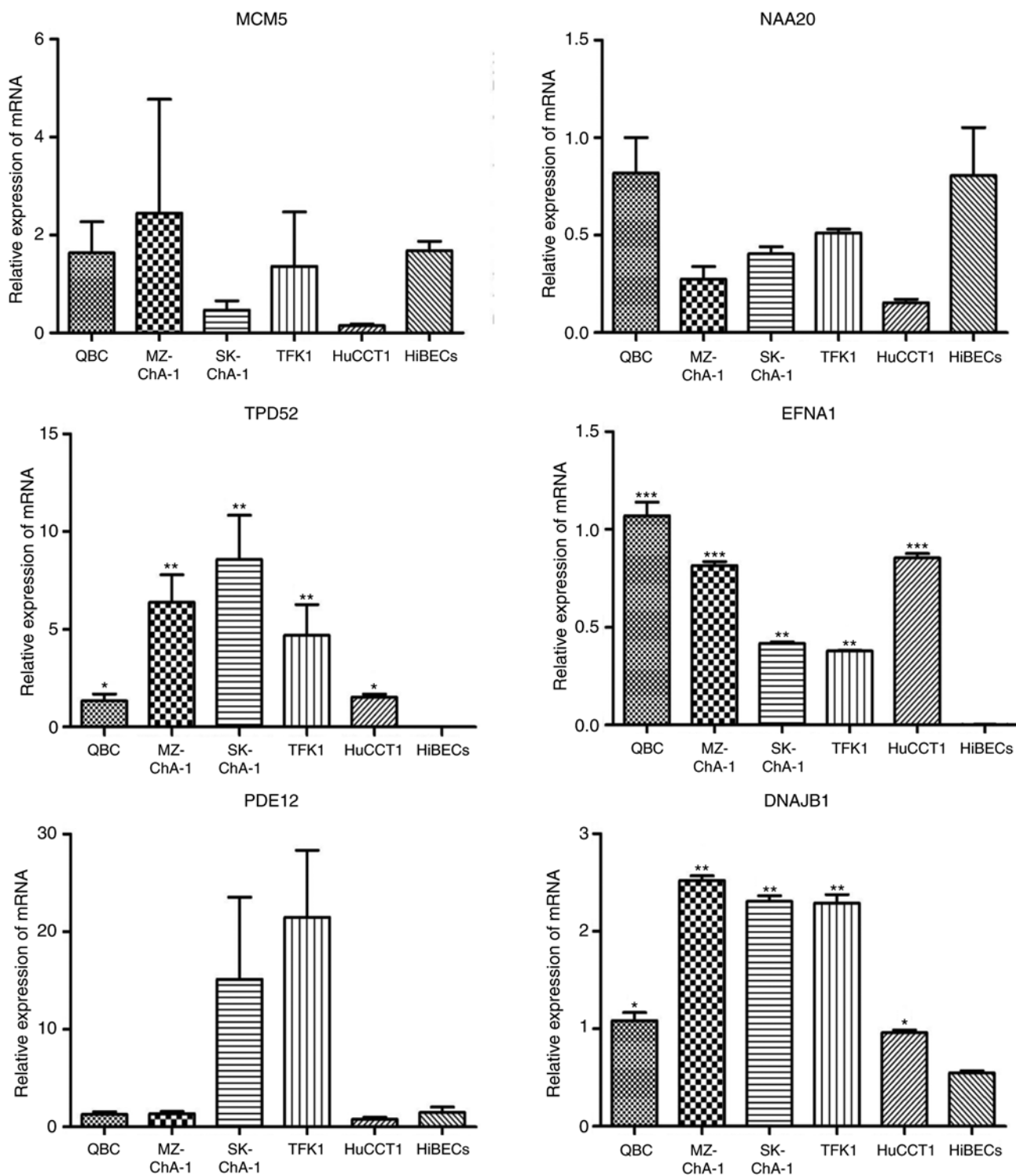


Figure S3. Initial validation of candidate biomarkers. The mRNA expression levels of PTMS, TACC3, SNRPA1, SRP14, STMN1 and STXBP1 in 5 hepatobiliary system cancer cell lines and a normal biliary epithelial cell line (HiBECs) detected by RT-qPCR.

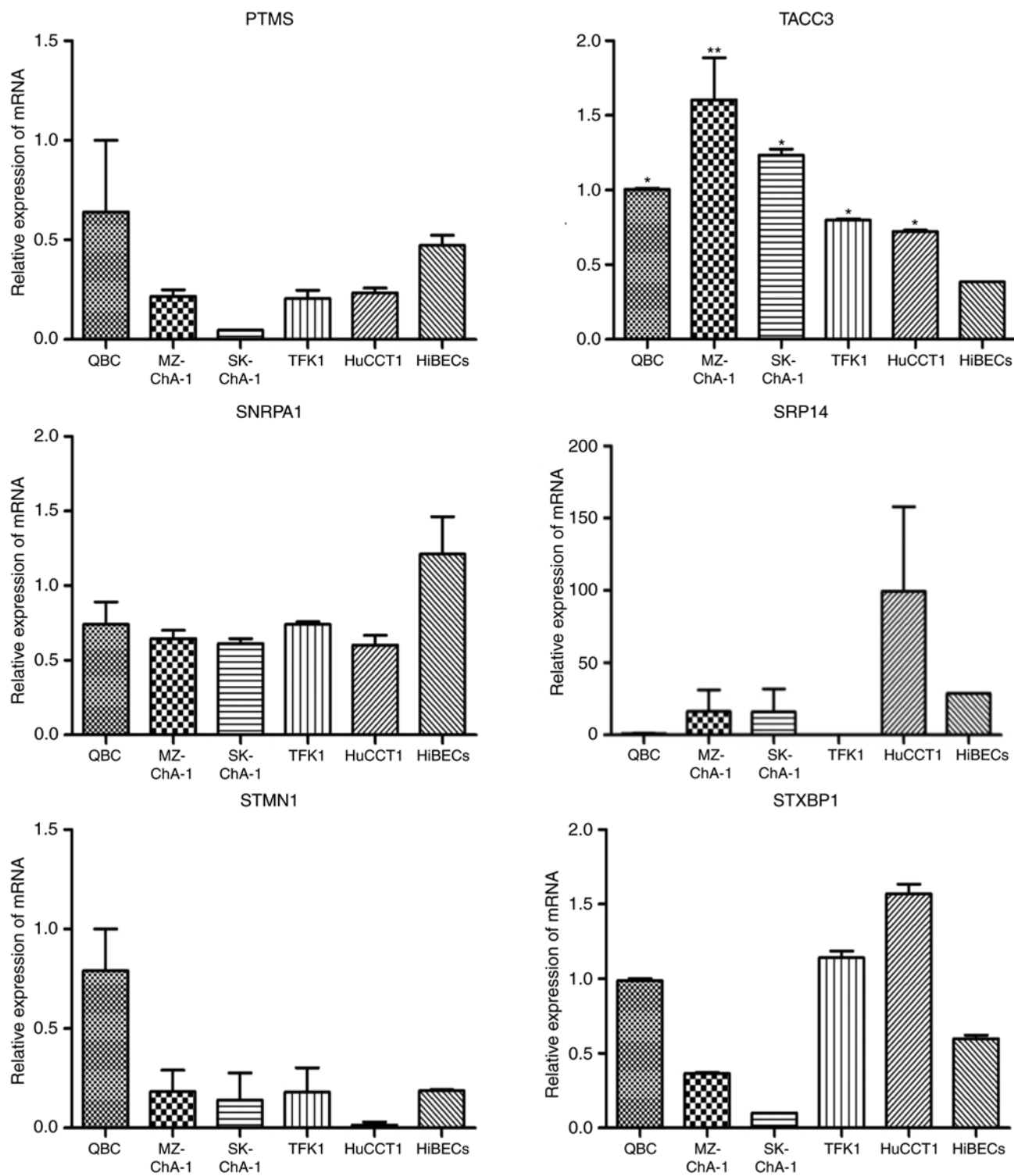


Figure S4. Initial validation of candidate biomarkers. The mRNA expression levels of TIMM8A, TK1, TYMS and YBX1 in 5 hepatobiliary system cancer cell lines and a normal biliary epithelial cell line (HiBECs) detected by RT-qPCR.

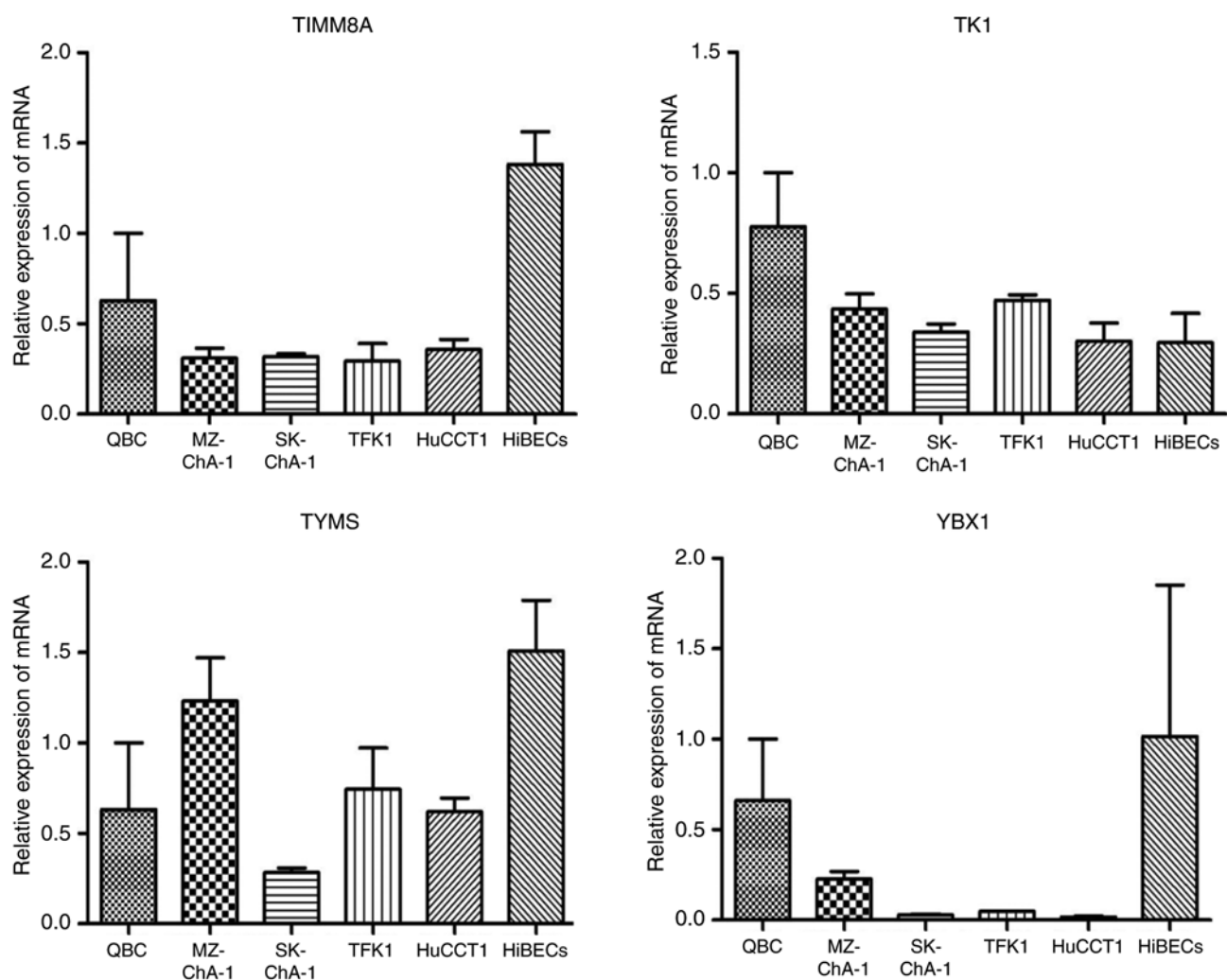


Table S1. Sequences of primers used for RT-qPCR in this study.

Gene	Sense (5'-3')	Antisense (5'-3')
TPD52	TCGGAAGAGGAGCAGGAAGA	GACGAAAAAGCAGCTGAGGC
DNAJB1	GACCCATTCTCTGGCTTCCC	TCTTTCCGTCGGGGTTTAGC
EFNA1	AGGCCCATGACAATCCACAG	CAGAAGTGGAAGGAGCAGCA
TACC3	TGAGGAAAGCAGCAGTGAGG	CCAGACTTGGTGTACCTCC
GRB2	TAGAACAGGTGCCACAGCAG	TTAGACGTTCCGGTTCACGG
DFFA	TCCAGATGCTTGTTGACGCT	CTTGGACTGACGCACTTCCT
YBX1	TGCAGCAGACCGTAACCATT	CTGCACAGGAGGGTTGGAAT
PDE12	CCCCAAACTCAGCCTCGAAT	GTCAAAAGTGCAGGTGCCAG
STMN1	CCAGAAATCCCCCTTTCCCC	CCAGCTGCTTCAAGACCTCA
STXBP1	AGGACGACGACCTGTGGATA	TCCACTCGGCAGAGTTTGTC
TK1	ACATCGTGGAGTTCTGCGAG	GTGGTACTTGTCTGCTCCCC
SRP14	TGGTGTGTTGGAGAGCGAG	CAAAGCCCTCCACAGTACCC
HMGB1	CAAACCTTGTCGGGAGGAGCA	GGGTGCATTGGGATCCTTGA
PTMS	TGTCGGAGAAAAGCGTGGAG	CTGTCTTCTGCCGTTTGGGA
TIMM8A	TTCCTCCTCCTCTTCCTCCG	AGCGCTGCTTTTGGAGTCTCT
MCM5	AGCTCCTACATCCGTGTCCT	CCTCGGCGAGTAAGTCCATC
DPY30	AGATGCTGGAGGGACAAACG	TCTGATCCAGGTAGGCACGA
SNRPA1	TGCCGTATAGGTGAGGGACT	AGATGCCAGAGGGTCCAGAT
DRG1	GATGTGGCCAAGACAGGTGA	CTGATGACACCAGGCACAGT
NAA20	CTTTACCTGCGACGACCTGT	AGGTGCCTCTGCAACAATGA
EIF3D	TGAAAGACTCCTCACGCCAC	ATTTGCCCTCCTCCAGCTTC
TYMS	CTGGGGCAGATCCAACACAT	GCCCAAGTCCCCTTCTTCTC
GAPDH	CTCTGAGCCTCCTCCAATTCA	GTTACACCGACCTTCACCA