**Table S1.** Real-time PCR primer sequences 1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Target gene** | **Primer sequence Forward (5’→3’)** | **Primer sequence Reverse (5’→3’)** | **Temperature (°C)** | **Accession number** |
| ***TOR*** | TCCCACTTTCCACCAACT | ACACCTCCACCTTCTCCA | 61.4 | JX854449 |
| ***Col1α1*** | CAACAGCCGCTTCACATACA | GGCGATGTCAATAATAGGCAG | 58.0 | HM363526.1 |
| ***Col1α2*** | CAAGAACAGCATCGCCTACAT | AGATGGTTTATTCGTTCTGTATTCA | 58.0 | HM771241.1 |
| ***TGF-β1*** | TTGGGACTTGTGCTCTAT | AGTTCTGCTGGGATGTTT | 55.9 | EU099588 |
| ***Smad4*** | ATCACCGCCATCACCACTAAC | TATTCCTGGGGACACCACTCT | 58.0 | HQ596213.1 |
| ***Smad2*** | GTCCTCCATCTTGCCTTTCAC | CTTCTCGCACCATTTCTCCTC | 58.0 | DQ912858.1 |
| ***TNF-α*** | CGCTGCTGTCTGCTTCAC | CCTGGTCCTGGTTCACTC | 58.4 | HQ696609 |
| ***CK2α*** | GCCAGCCCTTGTGTTTGAAT | TGTGAGGTTTGACATCCCGA | 61.4 | KJ729126 |
| ***CK2β*** | GGAGAAGTATCAGCAGGGAGAC | CCATACACTTAGGGCAGTAGAGC | 57.0 | KF193860 |
| ***β-actin*** | GGCTGTGCTGTCCCTGTA | GGGCATAACCCTCGTAGAT | 61.4 | M25013 |

1 TOR, target of rapamycin; Col1α1/2, collagen type I alpha 1/2; TGF-β1, transforming growth factor-beta1; Smad4/2, a member of SMADs that are involved in the modulation of transforming growth factor beta ligands; TNF-α, tumor necrosis factor-alpha; CK2, protein kinase casein kinase 2.

**Table S2.** Correlation analysis of parameters in the muscle of on-growing grass carp (*Ctenopharyngodon idella*).

|  |  |  |  |
| --- | --- | --- | --- |
| Independent parameters | Dependent parameters | Correlation coefficients | *P* |
| Protein content | p-TORSer2448 protein level | +0.710 | =0.114 |
|  | p-S6K1Ser389 protein level | +0.761 | =0.079 |
| Collagen content | Col1α1 mRNA level | +0.935 | <0.01 |
|  | Col1α2 mRNA level | +0.860 | <0.05 |
| Col1α1 mRNA level | TGF-β1 mRNA level | +0.965 | <0.01 |
|  | Smad4 protein level | +0.940 | <0.01 |
|  | p-Smad2Ser467 protein level | +0.812 | <0.05 |
|  | p-TORSer2448 protein level | +0.748 | =0.087 |
| Col1α2 mRNA level | TGF-β1 mRNA level | +0.878 | <0.05 |
|  | Smad4 protein level | +0.886 | <0.05 |
|  | p-Smad2Ser467 protein level | +0.913 | <0.05 |
|  | p-TORSer2448 protein level | +0.882 | <0.05 |
| p-TORSer2448 protein level | CK2α mRNA level | +0.716 | =0.109 |
|  | CK2β mRNA level | +0.784 | =0.065 |