

The β -actin gene of carp (*Ctenopharyngodon idella*)

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The nucleotide sequence is very similar to that of the β -actin gene of *Cyprinus carpio* (Liu et al., GENE submitted). The proximal promoter elements (nt 121-188) are capitalized as are the exons (beginning at 211, ending at the protein termination site at 3323). There are two poly (A) sites at 3860 and 3950. The AUG initiation site is at 1606 (exon 2). The a.a. sequence of the two carp genes is identical; there are 20 silent nt changes in the coding region. GenBank number M25013.

ttt gat ca aaaa tc gct ta ggc ctt g tttc tct cag ct agt ct agc ttc ccc t tttt ca ctctogag ttg ca aga aa g caa gtg tag ca atg tg cagc gac 100
agc cgg gt gtg tg acg ct gga ccaa acctt ttg atg agc cgt aca gta gct gct ccc 200
agc ttt tc aacc ct cac tt tga gctc ctg cac agc gca ggg ac ggc ca ta 300
AGtgaggt tga tt ttt ca gct ttt a at tta aa cct gt aat tat ga tgt at 400
act aag tt accgg tct tt tog ctt a ta a gt ttt aa cct ct gct tca aa ac 500
cct aact tt tat ga ctg ta ctg gac a tgt ca ggt gg aaa cy aag gta tccy 600
tta aca tt caa ga tgc gct gat t ctg ag cag cy aag tg ctg cag aag g 700
ctg ggt aa tct aa ttc act ta tgc g atc act ta a at tat ca aag at t ggtt 800
ata atg ta gta tg cag ca tgc atcc ca ct gct tt cctt aaa act gaa ag 900
aat ttt aa taa ct ggg gt. aaa gfgt tcc gtt ct tt aa agt ttt at aa 1000
taa act ga aag cy atg ct ggt gat c ca ca agt gc ttcy gtt tta gt ct 1100
ggg cag ac acc cy toj aa act cgg t tgt gt aat tg ata cc agy cga ggt 1200
gtg atg aa tgt to gaa at ctg ttc c ttt tt act ga acc at aoy aca ct gy 1300
ATG Gta at aat ga gag aa tgc aga c gga ct tcc tt tgt ct ggc ata tcty 1400
atg aaa ca gga ag tgy ac tcc aca t act gct gca ct gac act ct ttc 1500
cag cca tgg a gga tga aa tgg cgc act ggt gct gca ct gac act ct ttc 1600
ATC CAT cgt tgggt cgt cc cag aca t tct gtt gag aa acy gga tag tt c 1700
ttt aca aat ta aca to act tcc ttt ca tct acag ccc t ATG GTC GGTA 1800
ATC CTG ACC ctt gaa gct acc ccc aic g ac accgt at tgc a cca act gga 1900
ccc cag ag gac ca ccc cg tcc tcc t cnc ag agc ccc ccc ct gaa ccc caaa 2000
ttt gaa gt ctc tt gtc tg tcc tgc t tae tct ttg cc tgc ct gtt ttg cag t 2100
ctt ttg ct gga acc gaa gy tta tct a gat gt gct at aactt ttt gaa ca tc 2200
tcc aca ta acc cct gpa at ggg tgc g tgt ct tcc tt tgt ct ggt ttg cag t 2300
cgg cca ttt gac gt tcc ca tcc agc ccc ca tccc a tcc tcc cgt ctg acc 2400
gcc cact ct acc aggg t t a tcc cct g ag a ggg aat tgc tcc gta tca 2500
gcc tnc acc ct caca ccc acc cct g ggg c ttt ag cct tgc ca tca 2600
cig ctt cct ctc tcc ctc cc tgg a aa gga ca aact g tae ct gtt ttg cag t 2700
ccc atcc cttt tgg gt: ag gtt: tcc tcc a cct ct aca ct ca tca tca 2800
ATG GAG TCT TGG GGA TCC CAT GAG G TCA CAGA TTA ccc TGC CA TGA 2900
GTA CCA AATG TA ccc TGC CA TGA tgt aa ctt aa tga at atg gca act c 3000
ctg acc ct tae ct ct c ac atc agt t gtt cca atc tcc cct ccc tcc ac 3100
cgt aaa t a c t c t g t t c g a t c g g a aac cct aca tcc tcc cct ccc 3200
cca tgg tcc ac cc aat gct tcc: a ac cct aca act ggt aa ggt aa ggt 3300
atg tta tt ttg gct gt act cag g tgt tt ctt ta g tca t tcc aaa t gtt 3400
tct gaa ga ct caa tgg tt ttt gtt t argt at tgt at gta aa tta tgt aa ca 3500
taa ttg gaa gact act ta tca tttg ttc tta tta at ttt tt cctt 3600
ggg aoy tgg ggt gaa ga ca ttt g ggt aoy tgg oca ac ctg ta ca ct ga ct 3700
ctt cct gt ggt ggt gct aat gaa c ctg ag taa aa gga ta tta ggt tt aa 3800
tgc cct t ggt tc cag cy ca ctt g gta ta 4030