Dissecting the role of transforming growth factor-beta1 in topmouth culter immunobiological activity: a fundamental and functional analysis

Pengzhi Qi^{a, *}, Congxin Xie^b, Baoying Guo^a, Changwen Wu^a

^a National Engineering Research Center of Marine Facilities Aquaculture, Marine Science and Technology College, Zhejiang Ocean University, Zhoushan 316004, China

^b College of Fisheries, Huazhong Agricultural University, Wuhan 430070, China

^{*} Corresponding author. Tel.: +86 580 2554818 Fax: +86 580 2554818

E-mail address: qpz2004@sina.com

Fig S1. Nucleotide and deduced amino acid sequence of $cTGF-\beta 1$. The GenBank accession number is KJ704192.

Fig S2. The SDS-PAGE analysis for the expression *in vitro of* the $cTGF-\beta 1$ mature peptide portion. M, protein molecular weight marker; lane 1, 4-6, lysates of transformed bacteria after induction with IPTG; lane 2, 3 and 7, lysates of transformed bacteria of non-inserted control.

Fig S3. Western blot analysis of recombinant $cTGF-\beta 1$ using anti-6×His tag mouse antibody. M, protein molecular weight marker; lane 1-6, the expression of recombinant $cTGF-\beta 1$ mature peptide portion.

1	acggaggccatgcgcgtgcctgggaaggtgtgtggtccgggggcc	$1115\ {\tt tcagaagatgaagaagattagaactgaggttgtactgtggctgt}$
46	gcgtcagattctttctttccctggcgcgggtgaggaaccgcgccc	S E D E E S L E L R L Y C G C
91	gaggcagtcgggggtacgtggcgttaaacgcgacagggatctagt	1160 aagacagaccagcagagtacagataaattcctctttactatatca
136	ttccgacagacatgtaatgcttacatatatctatgttcaagtcag	K T D Q Q S T D K F L F T I S
181	${\tt cactaggccgtgttcaggtatacactagtaattgcatggtcttca}$	1205 ggactggacaaacagagaggcgacactgccagtctggcagatatg
226	${\tt ctaagtttgtttatatgggacaggggttgctccatttggccaaac}$	G L D K Q R G D T A S L A D M
271	tgcactgcactgtctggatggaactctgaaacagatgatgtgtca	1250 atggtgaagcettacattttggetttatetttgecetetaacgge
316	ggaatttcccatattagaaagacatcagctgttctgttggctacg	M V K P Y I L A L S L P S N G
361	tatt caaggtgctttccagaatcatcatcaggtagcatcacctc	1295 aacteettgeateeggtegeagtaaacgagatgttggeactgat
406	cata accag caa cacta ctg tg tt tg tt g a t c cag a cg ct ct a c	N S L A S G R S K R D V G T D
451	${\tt gtcaattacagactctttctgaacctctctccttacttaaatctg}$	1340 gtaacttgtgatgaaaaaactgagacctgttgtatgcgtaagctt
496	tt ctaaa aga cagtttggg ct cagatttgg cacc	V T C D E K T E T C C M R K L
530	atgaggtttgtttgcttagtactgacggccctgtgcatggtggct	1385 tatattgactttcggaaagatctgggctggaagtggatccacaag
	M R F V C L V L T A L C M V A	Y I D F R K D L G W K W I H K
575	ggaacgggcagtatgtccacctgcaagactctggacctggaggtg	1430 cccaaaggatactatgctaactactgcatgggctcctgcacctac
	G T G S M S T C K T L D L E V	PKGYYANY C MGS C TY
620	gtgaagaagaaacggatagaggctatccgcggtcagatcctcagc	1475 atctggaatgctgagaacaaatactctcagatattagccttgtac
	V K K K R I E A I R G Q I L S	I W N A E N K Y S Q I L A L Y
665	aaattgcgcatggtgaaagagcctgaatcggagatagacgatgtt	1520 aaacaccacaaccctggtgcatctgctcagccatgttgcgtacct
	K L R M V K E P E S E I D D V	K H H N P G A S A Q P C C V P
710	ggacaaaagatcccagattccttgctttctttgtacaacagcact	1565 gcagteetegaceetetaceaattetttaetatgtgggaagaeaa
	G Q K I P D S L L S L Y N S T	A V L D P L P I L Y Y V G R Q
755	${\tt gttgaactgagcgaagaaatgaagctgaagactgtccctctgcag}$	1610 aacaaggtggagcagttgtccaacatggtggtgaggagctgcaag
	V E L S E E M K L K T V P L Q	NKVEQLSNMVVRS C K
800	$\verb+gctgaagatgaggactactttggcaaggaggtgcacaagttcatt+$	1655 tgcagttaa 1663
	A E D E D Y F G K E V H K F I	C S *
845	$at \verb ccggcaagctcagaatggcacaaagcatcagatgtttttaat $	1664 agtatgactatataacattattttatttcagaaagtgctccatgg
	I R Q A Q N G T K H Q M F F N	1709 cactatctctctctggacgattagtaagcaaacacacagatagat
890	${\tt gtat} cag ag at {\tt gag ac ag ag tat t c cag ac t a c c g g c t g c t g t t t }$	1754 gaacatataaagtatcactgggaaggagaatcaggaactgagaca
	V S E M R Q S I P D Y R L L S	1799 actgacaaggatgggaaaaggagaaaggagagtcttgtaaaaaaa
935	${\tt caagcagagttacggcttcggattaagaatcccaccatggaccaa}$	1844 ataggagggaaaattaaacaggggaataaaaaatatctttgaaaa
	Q A E L R L R I K N P T M D Q	1889 tgagactttctcagccatgcccctctacagtggcacaagtgcaca
980	gag cag agg ctg ga a ctg tat cg tg gag tagg tg a t cag g ct cg a	1934 caaaggcattccgttaaagcacttcacaaaacaagctcaatatca
	E Q R L E L Y R G V G D Q A R	1979 aaccaaatatatgctttgttatcttttttatgtttattta
1025	${\tt tatctgggcacccgctttgtctccaaggattggtccaatcgctgg}$	2024 ctcattcccattaatttattgtgcttgttaagttcataatttgat
	Y L G T R F V S K D W S N R W	2069 tataccatgagggtagtcgtgtagcattgcatgccaaatgtacaa
1070	${\tt ctctcgtttgatgtgaaacagacgatgacagaatggctgcagagt}$	2114 tgaagatttctaatggtgctgtactgataaaggaaatgatgtcaa
	LSFDVKQTMTEWLQS	2159 aaaaaaaaaaaaaaaa

Fig S1. Nucleotide and deduced amino acid sequence of $cTGF-\beta 1$. The GenBank

accession number is KJ704192.



Fig S2. The SDS-PAGE analysis for the expression *in vitro of* the $cTGF-\beta 1$ mature peptide portion. M, protein molecular weight marker; lane 1, 4-6, lysates of transformed bacteria after induction with IPTG; lane 2, 3 and 7, lysates of transformed bacteria of non-inserted control.



Fig S3. Western blot analysis of recombinant $cTGF-\beta 1$ using anti-6×His tag mouse antibody. M, protein molecular weight marker; lane 1-6, the expression of recombinant $cTGF-\beta 1$ mature peptide portion.