

**Table 5. Oligonucleotide primers used in this study**

Primers for deletion of <i>tatA</i>	
TATAF	acc cac cca gcc gcc tcg gtg aga agg taa aga ctt atg att ccg ggg atc cgt cga cc
TATAR	atc tcg tgc ggc ggg ccg gag atc acc ggc cct gcg tca tgt agg ctg gag ctg ctt c
Primers for deletion of <i>tatB</i>	
TATBF	ccg tgg tgg cgg ccc gga cat ccc aag gag ctt cag gtg att ccg ggg atc cgt cga cc
TATBR	ttc ccg gcc cgc ggg ccg ggc gtg gga gga gcg ggg tca tgt agg ctg gag ctg ctt c
Primers for deletion of <i>tatC</i>	
TATCF	cct gcc cgc aac aag gag aag gac ccc gag ggg cgg atg att ccg ggg atc cgt cga cc
TATCR	ggg cgg cga cgc gtg ccg tca ccg ccc cgg cgg tcc tca tgt agg ctg gag ctg ctt c
Primers for construction of agarase reporter	
Agarase-F	ggc ggc aag ctt aga tct acc gat tgt cac cct gcg
AgaraseLeadnde	ggc cgg gaa ttc cat atg cgt tet cct tet tcg att cc
Agaraseleadbam	ggc ggc gga tcc gca gac ctc gaa tgg gaa c
AgaraseRxba	ggc ggc tet aga tct gtt ccg tga ggt gc
AadAFnde	ggc ggc cat atg cta ttt gcc gac tac ctt gg
AadARbam	ggc ggc gga tcc ctg acg ccg ttg gat aca cc

Primers for construction of myc-tagged agarase			
kddagaf	gga att cca tat ggt caa ccg acg tga tct		
kddagamyc	gag gat ccc tac aga tcc tcc tcc gag atg agc ttc tgc tcc acg gcc tga tac gtc ctg a		
Primers to amplify various signal peptides for cloning in frame with agarase.			
Gene*	Oligonucleotides	Signal peptide**	Plasmid***
SCO0432	F=ggc gcg cat atg aga cgg atc cgc ctg ttg R=ggc gcg gga tcc ggt gct cgc gag tgc ggg tac	MRRIRLLAAISAGLALAAGA↓VAPVPALAST	pTDW92
SCO0474	F=ggc gcg cat atg gaa ccg acc gtc cgc ac R=ggc gcg gga tcc ctc ggt cgc cgc ggg ttc	MEPTVTRTHPTRRLPTALVLTAAALLATGCSEQS↓DDGREPAATE	pTDW73
SCO0494	F=ggc cgc cat atg ctc ctc aga aca acg R=ggc gcg gga tcc cac ggt gac cgg gaa ggc	MLLRTTRTKPWRRLLAAALSAAALGVGLLAGCGSDS↓DDPADEAGGG TPAAAGAFPVTV	pTDW121
SCO0736	F=ggc cgc cat atg ggg gac ata cgc aga c R=ggc cgc gga tcc gca gct cgc ggc ctg ggc	MGDIRRRGAVALGVLTALVAPLTLALTA↓APAQAASC	pTDW102
SCO0930	F=ggc gcg cat atg aag acc tcc tgg cgg agc R=ggc gcg gga tcc gcc ggg ggc ggc cgt ggc	MKTSWRSASLVAGAAALLALTACG↓QDGGGPTGSQNVGATAAPG	pTDW119
SCO1172	F=ggc gcg cat atg gaa agg gag agg aca gc R=ggc gcg gga tcc gta gtc gac ggc acg gac	MERERTAPVPTRRRLLKGAALATVPYTLLSGTRAAA↓QVRAVDY	pTDW74
SCO1196	F=ggc gcg cat atg gcc ctc acc acc cga cg R=ggc gcg gga tcc ctg gga cgc cag cgc ggt acc	MALTTRRRALTTLGAALTGAVALPA↓GTALASQ	pTDW75
SCO1230	F=ggc cgg cat atg agg aag agc agc ata cgg cgg agg gcg acc gcc ttc ggc acg gcc gga gca ctg gtc acc g R=ggc cgg gga tcc ggc gct cgc ggc ggg tgc cga gac ggc gcc ggc gat cag cgt ggc ggt gac cag tgc tcc ggc c	MRKSSIRRRATAFGTAGALVTATLIAGA↓VSAPAASA	pTDW48
SCO1356	F=ggc gcg cat atg acc agc gca cgg ttt c R=ggc gcg gga tcc gcc gcc gtc gcc gga cgc	MTSAPFHPAAGPARRTVVAAGAAGLTAVLAACS↓DSDDGASGDGG	pTDW76
SCO1396	F=ggc gcg cat atg aca cga ctc tcc gcc R=ggc gcg gga tcc ctc gtg ccg tgc ctg cgc	MTRLSAALRGLATTF AALLAVTAVPAAS↓APATAQARHE	pTDW103
SCO1432	F=ggc gcg cat atg caa cga cgg acc cgc ccg acc egg aca	MQRRTRPTRTPGGLPLMSRVEQPSRRALLAAVAAA AVTGGA↓IPAT ARAA	pTDW118

	R=ggc gcg aga tct tgc ggc ccg ggc ggt cgc cgg gat c		
SCO1565	F=ggc gcg cat atg gga acg cag gag tgc gac R=ggc gcg gga tcc ggt gcc ggc ggc tct cgc cgt g	MGTQESDERAGGGTGRRALLGAAVLGAGGAVLGLPGTARA↓AGT	pTDW77
SCO1590I	F=ggc ggc cat atg ggc ggt gtc tgc cgc cgt gcc ttc acg gtg gcg gcg ttg tgc gcg R=ggc ggc gga tcc cgc cga cgc ctc ggg cac gag cgt gaa cgc cga caa cgc cgc cac cgt	MGGVSRRAFTVAALSAFTLVPEA↓SA	pTDW49
SCO1590II	F= as above R=ggc ggc gga tcc ggg ggt cgc cgc cga cgc ctc ggg cac gag cgt gaa cgc cga caa cgc cgc cac cgt	MGGVSRRAFTVAALSAFTLVPEASAA↓TP	pTDW51
SCO1639	F=ggc gcg cat atg cgc cga cgc tca ctc ctc atc gcc gtc ccc acg gga ctg gtc acg ctc gcc gcc tgc ggt gac agc gac gac tcc gg R=ggc gcg gga tcc cgc ggc cga ggt ggc cga cgc gtc ggg cga cgg gct ctc gct cgc gtt gct cga cga gcc gga gtc gtc gct gtc acc	MRRRSLLIAPTGLVTLAACGSDSDSGSSSNA↓SESPSPDASATSAA	pTDW52
SCO1824	F=ggc gcg cat atg acc gct ccc ctc tgc R=ggc gcg gga tcc ggg cgc ggc ctc ggc cgc	MTAPLSRHRRALAIAGLAVAASLAFPLGTPAA↓ATPAEEAAP	pTDW78
SCO1906	F=ggc gcg cat atg tgc ctc act cgc agg R=ggc gcg gga tcc cgt gga cgc gag ggc gtt g	MSLTRRDFAGRSALTGAGVVLAGSVGALA↓TAPNALAST	pTDW91
SCO1948	F=ggc gcg cat atg aga cga aga gcg aga tc R=ggc gcg gga tcc ggg ttg tgc ctg ggc gat g	MRRRARSILAVGALLIGGASFA↓PIAQAQP	pTDW79
SCO1968	F=ggc gcg cat atg cac gtg cgc gca gta g R=ggc gcg gga tcc cgc ctc gtc cgc ccg cgc gtg	MHVRAVAVTTTALLGVALT↓APLSHARADEA	pTDW104
SCO2068	F=ggc gcg cat atg acc agt cga cac aga gc R=ggc gcg gga tcc ggg ggc cgc gtc ggc cgc	MTSRHRASENSRTPSRRTVVKAAAAGAVLAAPLAAA↓LPAGAADAA P	pTDW90
SCO2226	F=ggc gcg cat atg cct gcc acg cgc cgt ac R=ggc gcg gga tcc ggt gtc ggc ccg tgc ggc gag	MPATRRTARVRRVAAVTVTALAAA↓LLPPLAARADT	pTDW89
SCO2286	F=ggc gcg cat atg aca ccc gcg aac cac R=ggc gcg gga tcc ctc ggc ggc gct cgc ggt g	MTPANHQAPTSAPSPAPSQSSHAPELRAAARSLGRRRFLTVTGAAAA LAFAVNLPA↓AGTASAAE	pTDW88
SCO2383	F=ggc gcg cat atg cgt ctc aga cgc ccc cgc ag R=ggc gcg gga tcc gct gtc ggc gac ggc act g	MRLRRPRRPSDGPGRSGARRLRVASAPLI PLTVIGAVVAGLIGPEPPSDG↓PLPGTSAVADS	pTDW80
SCO2446	F=ggc gcg cat atg agc aca gga cca gtc aga cgc ggg gcg gcc ctc ctg tgc gcg ggg ctc gtg	MSTGPVRRGAALLSAGLVIALLPAA↓GTSAAQ	pTDW53

	R=ggc gcg gga tcc ctg cgc cgc cga ggt ccc ggc egg cag cag cgc gat cac gag ccc cgc cga cag gag		
SCO2591	F=ggc gcg cat atg ttc aca tea cgc gcg cgc ctc aga R=ggc gcg gga tcc gtc ggc ggc gac ggc ggg ag	MFTSRARLRTRRSRLTCTALAVAAGMLVTT↓PAVAAD	pTDW106
SCO2637	F=ggc gcg cat atg acc aac agc ccc cag R=ggc gcg gga tcc gtc ggc ggc gag ggc cac	MTNSPQREPIPGARRAARLALATGLAAALA↓AVGPVPVALAAD	pTDW81
SCO2758	F=ggc gcg cat atg cac cac agc agc acg g R=ggc gcg gga tcc ggc gtc ggc gta ggc cgt ac	MHHSSTAGTGSTAQPSRRSVLTATAVVTAALA↓AGGGTAYADA	pTDW82
SCO2780	F=ggc gcg cat atg tcc cac gcc agc gct ac R=ggc gcg gga tcc gtc gcc cgc ccc atc gct c	MSHASATHPTRRGILAAGGALGLGAVLAACG↓DGDGKSDGA GD	pTDW83
SCO2786	F=ggc gcg cat atg aga cct cat cga cgg cac R=ggc gcg gga tcc cgg ttc cgc ggc cgc ctt c	MRPHRRHHRTTPRITRLLGSLLLVAAVGAMTTGA↓APVRKAAAEP	pTDW84
SCO2821	F=ggc gcg cat atg aga cga cca gtc gcg ctg R=ggc gcg gga tcc gcc ggc cgc tgc cgc cgc ctc	MRRPVALRLQAALGTLALAAA↓AGVVLTMPAAAAAAG	pTDW61
SCO3053	F= ggc gcg cat atg tcc aga ttc cgt tca cgc gcc gcg gtc acc gcg ggt ctg acg gcc atc gcg gtc gcc R=ggc gcg gga tcc ggt ggc ggc ctg gac ggg tcc gac gac gag gca gcc ggc ggc cac cgc gat ggc cgt cag	MSRFRSRAAVTAGLTAIAVAAGCLVVG↓PVQAAT	pTDW56
SCO3456	F=ggc gcg cat atg cgg cac agc gga cgg R=ggc gcg gga tcc ctc gac ccc cgt ggt atc	MRHSGRRVKRATVLAAGAAVAGLLTAA↓CSSPDTTGVE	pTDW62
SCO3471 (dagA)	F=ggc cgg cat atg gtc aac cga cgt gat ctc atc aag tgg agt gcc gtc gca ctc gga gcg ggt g R=ggc cgg gga tcc gag gtc tgc ggc atg agc ggc ggg tgc ggg acc cgc gag ccc cgc acc cgc tcc gag tgc gac g	MVNRRDLIKWSAVALGAGAGLAGPAPAAHA↓ADL	pTDW47
SCO3484	F=ggc gcg cat atg acc aag cct gtt gtc R=ggc gcg gga tcc acc gga gcc ttg gga cga g	MTKPVVPSGVSRRGFLGGSLGVAGAVLLAA↓CSGGGNSSQGSG	pTDW63
SCO3790	F=ggc gcg cat atg cgc aag ctc ctg cgg ttg R=ggc gcg gga tcc ggg cgc ggc ctg cgc cga c	MRKLLPLIGTPSGSHPGGRSAMTCRFRCGDACFHEVPNTSSNEYVGD VIAGALSRRSMMRAAAVVTVAAGAGAVGVAG↓APSAQAAP	pTDW93
SCO3790shrt	F=ggc gcg cat atg cgg aac acc agc tcc aac g R= as above	MPNTSSNEYVGDVIAGALSRRSMMRAAAVVTVAAGAGAVGVAG↓ APSAQAAP	pTDW107
SCO4142	F=ggc gcg cat atg aac cgg cgg gcc ctc gct c R=ggc gcg gga tcc gct gtt ggc ggc ggc gga g	MNRRALALGALAVSGALALTACG↓SDDTGNSGSDSSSAAANS	pTDW60
SCO4152	F=ggc gcg cat atg cca gtc aca gca cag R=ggc gcg gga tcc ccc gcc cgc gct cgc cga g	MPVTAQPHQPRRRRRTSRLLVVAATVVTAGVLAAAALPA↓SASAGG	pTDW64

SCO4672	F=ggc gcg cat atg acc cac acc tca cgg R=ggc gcg gga tcc cgg agc ggc gga cgc agc	MTHTSRRGVLAFAASAATVPFGGAAAASPARATATAASA↓VDPAA ASAAP	pTDW72
SCO4884	F=ggc gcg cat atg cgt cgg aca tca aga c R=ggc gcg gga tcc gtc gtc gcc gct ctc gcc gct g	MRRTSRLIRVAVGVASLALAATA↓CGGTSGESGDD	pTDW87
SCO4885	F=ggc gcg cat atg cgc cgg att tcc cgg atc R=ggc gcg gga tcc gga ctc cga acc ggc gtc	MRRISRITVAGAATASLALALAACG↓GTSTDSGSES	pTDW86
SCO5074	F=ggc cgc cat atg acc tcg tcg ctg cac R=ggc cgc gga tcc gac gct cgc ggc gtg cgc	MTSSLHHAIRLTTASAIALGGLVTLGTS↓AHAASV	pTDW108
SCO5113	F=ggc ggc cat atg agc att ctc cgt aac cgc acc gcc acg gcc gcc ata gtc gcg gtc gca gcc ggc gcc ctg R=ggc ggc gga tccggc gga gct gtc gct gtc gcc acc acc gca ggc ggt gag ggt cag ggc gcc ggc tgc gac cgc	MSILRNRTATAAIVAVAAGALTLTACGG↓GDSDSA	pTDW50
SCO5447	F=ggc cgc cat atg ttg agc agc agc act c R=ggc cgc gga tcc gtc ggg ggc cgc ggt ggc	MLSSSTPHRRTSHTTSRRTAHRRAAAVALAGVAALIATAVQS↓G TATAAPD	pTDW109
SCO5461	F=ggc gcg cat atg atc acc act agt ctg c R=ggc gcg gga tcc cgg ggc ggc ctt ggc ggg	MITTSLRRRTAAAVLSLSAVLATTAATAPGAAPAPSA↓APAKAAP	pTDW67
SCO5660	F=ggc gcg cat atg cgt gcc cgt agc cat gca gtt ctc gcc gcc tcg gtc gtc ctc gcc ctg gcc g R=ggc gcg gga tcc cgg cgc ggc gaa ggc ggg ggc cgc cag cgg gcc ggc ggc cag ggc gag gac gac c	MRARSHAVLAASVVLALAAGPLA↓APAFAAP	pTDW57
SCO6009	F=ggc gcg cat atg aac acg cgt atg cgt c R=ggc gcg gga tcc ctc ctt ggc gct gcc aca g	MNTRMRRAAVAVATTAMAVSLAA↓CGSAKE	pTDW65
SCO6052	F=ggc gcg cat atg tcc acg tcc cgc aac g R=ggc gcg gga tcc ggg ctg ggc ggc ggc ggt g	MSTSRNAATTRQVLARTGALGAGIAFTGALSELFA↓GTAAAQP	pTDW66
SCO6198	F=ggc gcg cat atg gac acc act tac tgg agc aga cgt cgc gtc ctc acc gtg ctc ggc gcc gcc acc gcg gcg ac R=ggc gcg gga tcc ggc ggc gag agc gcg gga cgg ggc ggc gag agg gat cga ggt cgc cgc ggt ggc ggc gcc	MDTTYWSRRRVLTVLGAATA ATSIPLA↓APSRALAA	pTDW54
SCO6199	F=ggc gcg cat atg cac cgc aca aga ccc ggg ggc cac ccc cga tcc ata cgc ttc gcc aca ctc gcg atc tcc ctg a R=ggc gcg gga tcc ggt gac ggc gac ggc cgg tga cgc cgt cat gag cgc gga gcc cgc ggt cag gga gat cgc gag tgt g	MHRTRPGGHPRSIRFATLAIISLTAGSALMT↓ASPAVAVT	pTDW58

SCO6272	F=ggc gcg cat atg acc gag gtg tcc cgc R=ggc gcg gga tcc ccc tgc cgc ggc cgc tgc	MTEVSRRLMKGAAVSGGALALPALGAPPATA↓APAAGPEDLPGPA AAAAG	pTDW85
SCO6281	F=ggc gcg cat atg tcc gcc att tet cgc R=ggc gcg gga tcc ggc gat cgc cgc ggc ggg tg	MSAISRRRFIRHGAVAGGAAVALPALGGWAGEAFA↓AQPSPAAAIA	pTDW116
SCO6418	F=ggc gcg cat atg gac aga cga gcc ctc R=ggc gcg gga tcc ggt cgc ggc gtc cgt ccc	MDRRALMLATGGLLGAAGAAQLTAAPSAVA↓AGTDAAT	pTDW68
SCO6457	F=ggc gcg cat atg ccg cac tgc ccc gtg tc R=ggc gcg gga tcc ctc gtc ggc cgc cgc ccg ccg tac	MPHSPVSPAESPAPQGRPRPVVSRRLLEGGAAVLGALALSASPLTA QA↓AVRRAAADE	pTDW110
SCO6580lng	F=ggc cgc cat atg acc ccg ttc acc gac R=ggc cgc gga tcc ccg gtc gtg ggc gag cgc	MTPFTDSSRTDAGTDPSADGPGESLRRALGVNRRRFLSTCTAVAAGA VAAPVFG↓ASPALAHDR	pTDW111
SCO6580shrt	F=ggc gcg cat atg aac cgg cgc cgc ttc R= as above	MNRRRFLSTCTAVAAGAVAAPVFG↓ASPALAHDR	pTDW113
SCO6594	F=ggc gcg cat atg ccg tct tcc ccc acg R=ggc gcg gga tcc gga gtc ggc ggc ggc ggt tc	MPSSPTSPSPSGAPEPSGVRRLSLLAAAAAPVLASLAGA↓GTAAAD S	pTDW94
SCO6644	F=ggc gcg cat atg cgc tcc cac cgc cgc R=ggc gcg gga tcc acc gtc acc gga cgc gga a	MRSHRRPRLAPFLLVPLMAGCFASGGG↓DDSASGDG	pTDW69
SCO6691	F=ggc gcg cat atg gcc gaa gtg aac cgg R=ggc gcg gga tcc ccg gag tgc cgc ggc ccg gtc	MAEVNRRRFLQLAGATTAFSALS↓ASIDRAAALP	pTDW70
SCO6738	F=ggc cgc cat atg aac cgc ctg cgc acc R=ggc cgc gga tcc gga gcc gtc ggc gtg ggc	MNRLRTL TATTAALAASLLVPSLLTA↓PAHADGS	pTDW114
SCO7399	F=ggc gcg cat atg aga cgc ctc ctg ctc R=ggc gcg gga tcc ctt gtc ggc ggc ggg ttc	MRRLLL TAAATTAAALTLAACG↓TTEPAADK	pTDW71
SCO7631	F=ggc gcg cat atg agc aca gag gaa cag R=ggc gcg gga tcc gcc ggc cgc gtc ggc cgc ctg	MSTEEQSSGRRHPDRRVLLRAAVAVPAAGAAVAGTAAVPA↓QAAD AAG	pTDW95
SCO7677	F=ggc cgc cat atg tcc aga cag atc gat c R=ggc cgc gga tcc tcc ggg gtt tcc ggc gga g	MSRQIDRRSFLRRGAAGAAALAVGPGLLAA↓CSTDEPGSAGNPG	pTDW115

\*The SCO number for each protein whose signal peptide was cloned in frame with mature agarase is given.

\*\* The signal peptide coding sequence that was amplified for each secreted protein is shown, the arrow indicates the most likely position of signal peptide cleavage as determined by SignalP ([www.cbs.dtu.dk/services/SignalP/](http://www.cbs.dtu.dk/services/SignalP/))

\*\*\* The plasmid designation of the final construct carrying the particular signal peptide-agarase fusion is given.