

		12	58	
Xanthomonadales	<i>Xanthomonas axonopodis</i>	21244927	GTEELPVKALPGLAQALFDGVLGSGLEKRGIAVA	RG DAKPLSTPRRLA
	<i>Xanthomonas fuscans</i>	294624286	-----R-F-----V--T	--
	<i>Xanthomonas campestris</i>	78049866	-----E-F-----V--T	--
	<i>Xanthomonas oryzae</i>	166714071	-----D--F-----T	-- A-----
	<i>Xanthomonas albilineans</i>	285016900	-----IA--D-----E	--
	<i>Stenotrophomonas sp. SKA14</i>	254522505	-----F----VD--R--V-LD	L--R-----
	<i>Stenotrophomonas maltophilia</i>	190576418	-----F----VE--R--V-LE	L--R-----
	<i>Xylella fastidiosa</i>	15838553	-----N--N-SR-F-E--A-----V-D	H-E-S-----
	<i>Actinobacillus minor</i>	257465118	-----P--KK--T-FAEN-EAE-NQA-LSFD	KVEWFAA----
	<i>Aeromonas salmonicida</i>	145301092	--A--P--RS--E-FA-NFKAE-T-ADL-FG	-IEWFAS----
	<i>Aggregatibacter aphrophilus</i>	251793743	-----P--KT--TSFA-N-EAE-NQA-LTFD	KIEWFAA----
	<i>Alcanivorax borkumensis</i>	110832869	-----P--AS-SA--T-EFVRQ-DEA-LNHG	AVERFAA----
	<i>Azotobacter vinelandii</i>	226942180	-S----P--KS--T-FLA-IEK--AAA-LEYS	V-RFYAA----
	<i>Cardiobacterium hominis</i>	258545073	-V----T--VTT--D-GR-LWAQA-ANA-LTHG	-IEA-A-----
	Other γ -Proteobacteria	<i>Cellvibrio japonicus</i>	192359481	-----P-N-KN-MN-FAESIQAD-TALELSFT
<i>Citrobacter koseri</i>		157149175	-----P--RS--ESFAAN-TAE-DNA-L-HG	NVEWFAA----
<i>Colwellia psychrerythraea</i>		71281166	-----P-S-KT--T-FY-NIKGQ-DSHNLSYS	-I-WFA----F-
<i>Gronobacter turicensis</i>		260599858	-----P--RS--ESFAANFTAE-DAA-LTHG	VVSWFAA----
<i>Dickeya dadantii</i>		242237521	-----P--RN--ESFAANFTAE-DTA-LGYG	SVNWFAA----
<i>Haemophilus ictaluri</i>		238917996	-----P--RS--FA-NFRTE-DNA-L-HG	-IEWFAA----
<i>Enhydrobacter aerosaccus</i>		257453498	-----P-N-KT-RD--NNH-TQS-KDAN-RFD	TI-SFAA----
<i>Erwinia amylovora</i>		292490092	-----P--RS--ESFAANLTAE-DAA-L-HG	EVSWFAA----
<i>Escherichia coli</i>		193068544	-----P--RS--EFFAANFTAE-DNA-L-HG	TVQWFAA----
<i>Haemophilus influenzae</i>		145640588	-----P--KT--TSFA-N-EAE-TQA-LSFD	KIEWFAA----
<i>Hahella chejuensis</i>		83642934	-A----P--RQ--E-FAQ-IRQR--AQLSFS	ELTWYAA----
<i>Idiomarina baltica</i>		85711017	-----P--KQ-SESFKH-IEE--N-AEL-FG	EI-A-A-----
<i>Klebsiella pneumoniae</i>		206579067	-----P--RS--ESFAAN-TAE-DNA-L-HG	KVEWFAA----
<i>Mannheimia haemolytica</i>		254362729	-----P--KK--T-FAEN-ENE-NQA-LSFE	KVEWFAA----
<i>Marinobacter sp. ELB17</i>		126668181	-----P--KQ-SD-FTQ-IV--QAA--EFG	AVE-FAA----
<i>Nitrosococcus watsoni</i>		300115242	-----P--RK-SES-LQELGR--QAA-LIY-	-L-GYGA----
<i>Oceanobacter sp. RED65</i>		94502179	-----PT--KS-RD-FQK-IETF-QAK-LSF-	NSEAFAA----
<i>Pasteurella dagmatis</i>		260914511	-----P--KK--T-FAEN-ELE-NQA-LTFD	KVEWFAA----
<i>Photobacterium profundum</i>		54307292	-----P--RT--E-FSSNFEE-KTAALVHQ	GIEWFAA----
<i>Proteus mirabilis</i>		197286684	-----P--RS--ESFATHFTAE-DNAN-THG	-VSWFAA----
<i>Providencia stuartii</i>		183597049	-----P--RS--ESFAANFTAE-DSAD--HG	EVSWFAA----
<i>Pseudomonas aeruginosa</i>		296386480	-----P--NS-GE-FLS-IEK--KAA-LGY-	A-RFYAA----
<i>Psychromonas ingrahamii</i>		119947319	-----P-S-RQ--ESFASN-EAE-N-AELSFD	SVRW-AS----
<i>Salmonella enterica</i>		56415548	-----P--RS--ESFAANFTAE-DNA-L-HG	NVEWFAA----
<i>Shigella boydii</i>		187731977	-----P--RS--ESFAANFTVE-DNA-L-HG	TVQWFAA----T
<i>Tolunomas auensis</i>	237806784	-----P--RK--FA-NFTAE-D-A-L-HQ	GVQWFAA----	
<i>Vibrio furnissii</i>	260771056	-----P-Q-RT--E-FAANFTAE-NNA--HD	GVTWYA----	
<i>Yersinia ruckeri</i>	238754024	-----P--RS--ESFAANITAE-DSANLSHG	-VSWFAA----	
β -Proteobacteria	<i>Ralstonia eutropha H16</i>	113866550	F----P--AR-GD-FAQ-LFA--GE-DLLEP	GA TVT-FA-----
	<i>Cupriavidus necator N-1</i>	338164853	F----P--GR-GD-FAQ-LFA--GE-DLLEP	GA TVT-FA-----
	<i>Ralstonia eutropha JMP134</i>	73540213	F----P--AR-GD-FAQ-LFA--RE-DLLE-	DA AVT-FAS-----
α -Proteobacteria	<i>Bordetella pertussis</i>	33591304	F----P--QK-G--FAE--RAT-ARRHLLAD	GC AVE-FA-----
	<i>Starkeya novella</i>	298293954	FS--I-ARMQA-A-EN-RKL-TDA-VE--LLYE	G--AFV-----
	<i>Rhodobacterales bacterium</i>	254465195	FS--I-ARMQARA-ED-KKR-TD--VEA-LTY-	G-AA-----T
	<i>Oceanicola granulosus</i>	89070594	LS--I-ARMQAKASDD-KKM-TD--VEA-LTY-	S-AAFA----V
	<i>Roseovarius nubinhibens</i>	83952444	FS--I-ARMQAKA-ED-RQR-TD--VEA-LTY-	G-ASF-----T

Figure S40

Partial sequence alignment of a conserved region of glycyl-tRNA synthetase subunit beta showing a 2 aa insert that is present in all Xanthomonadales. The insert has also been found to be shared by species from β -Proteobacteria.