

# A. fusA1

*A. baumannii* MARQPTITRYRNIGISAHIDAGKTTTTTERILFYTVGNSHKIGEVHDGAAATMDWMEQEQEIGITITSAATTCFWSGMGNQFPQHRINIVDTDPGHVDFTTIEVE  
*P. aeruginosa* MARTTPIARYRNIGISCAHVDAGKTTTTTERVLFYTVGNHKLIGEVHDGAAATMDWMEQEQEERGITITSAAVTTAFWKSRSRQVQDNYRNVNIDTDPGHVDFTTIEVE  
*S. enterica* MARITPIARYRNIGISAHIDAGKTTTTTERILFYTVGNHKLIGEVHDGAAATMDWMEQEQEERGITITSAATTAFAWSGMAKQVEPHRINIIDTDPGHVDFTTIEVE  
*E. coli* MARFEFSLEKTRNIGIMAHIDAGKTTTTTERILFYTVGRHHLIGEVHDGAAATMDWMEQEQEERGITITSAATTAFAWSGMAKQVEPHRINIIDTDPGHVDFTTIEVE  
*S. aureus* MARFEFSLEKTRNIGIMAHIDAGKTTTTTERILFYTVGRHHLIGEVHDGAAATMDWMEQEQEERGITITSAATTAFAWSGMAKQVEPHRINIIDTDPGHVDFTTIEVE

*A. baumannii* RSMRLVLDGAVCMYVCAVGGVQPPSEETVWRQANKYKVPRLAFVVKMMDRTGANFRRVVEOMKTRLGANPVPVIVVPTGAEEDTFTGVVDLIEEMKAIWDEASQGM  
*P. aeruginosa* RSLRLVLDGAVVFCVCGTSGVPEPQSEETVWRQANKYKVPRLAFVVKMMDRTGANFRRVVEOMKTRLGANPVPVIVVPTGAEEDTFTGVVDLIEEMKAIWDEASQGM  
*S. enterica* RSMRLVLDGAVMVCVAVGGVQPPSEETVWRQANKYKVPRLAFVVKMMDRTGANFRRVVEOMKTRLGANPVPVIVVPTGAEEDTFTGVVDLIEEMKAIWDEASQGM  
*E. coli* RSMRLVLDGAVMVCVAVGGVQPPSEETVWRQANKYKVPRLAFVVKMMDRTGANFRRVVEOMKTRLGANPVPVIVVPTGAEEDTFTGVVDLIEEMKAIWDEASQGM  
*S. aureus* RSLRLVLDGAVTVLDQVSGVJEPSTETVWRQATTVGVPRIVFVVKMMDKLANFVYSVTLHDLRLOANAAPIQLPAGAEDEFEAIILVEMKCFKYYTN-DLGT

*A. baumannii* KFEYGETPADLVDTAEDWRWNMVEAAAEASLEEMDKYLEEGDLSKEDIAGLRARTLASIEIQVMLCGSAFKKNGVQRMLDVAVTEFLPSPTEVKAITEGILDL  
*P. aeruginosa* TYREEDIAPAEKLDLAEWRSSMVEAAAEANEELMNKYLEEGELSEAEIKEGRLRLTLAGCEIYPVAVCGSSFKKNGVPLVLDVAVDYLPAPTEIPAIKGVSP  
*S. enterica* TFEYEDIAPADMODLANEWHQNLIESAAEASELEMEKYLEEGELTEEEIKQALRORVLNNEIILVTCGSAFKKNGVQAMLDVAVDYLPSPVDPVPAINGILDL  
*E. coli* TFEYEDIADMVLANEWHQNLIESAAEASELEMEKYLEEGELTEAEIKGALRORVLNNEIILVTCGSAFKKNGVQAMLDVAVDYLPSPVDPVPAINGILDL  
*S. aureus* EIEEIEIPEADHLDRAEARASLIEAVAEETSDLEMEKYLEEGEISVSELKEAIIQATNTNVEFYVPLCGTAFKNGVQMLDVAVDYLPSPDLVKKIIGHRA

*A. baumannii* DKDETASREASDSEAFSALAFKIMNDKFGVNLTFVRYVSGVVKQGDVYVNPVKSKRERIGRIVQMHNARODTIDEIRAGDIAACVGLKQDVTGTGDLCDDE  
*P. aeruginosa* DDETVEDERHADINEPSSALAFKIATDPFVGTLTFRVYVSGVLSQSDVLSVYKGGKREVRGRMVQMHANOREEIKKEVRAADIAALGSMKDVTTGDTLCSL  
*S. enterica* DGKDTPAERHASDDEPFSSALAFKIATDPFVGNLTFFRVYVSGVNSQDVLNSVKIARERFGRIVQMHNAREEIKKEVRAADIAALGKQDVTGTGDLCDDE  
*E. coli* DGKDTPAERHASDDEPFSSALAFKIATDPFVGNLTFFRVYVSGVNSQDVLNSVKIARERFGRIVQMHNAREEIKKEVRAADIAALGKQDVTGTGDLCDDE  
*S. aureus* SNPPEEVIAKADDSAEFAALAFKVMTPYVGLTFFRVYVSGVNSQDVLNSVKIARERFGRIVQMHNAREEIKKEVRAADIAALGKQDVTGTGDLCDDE

*A. baumannii* KNIIITLERMDFEPDPVQLAVEPKTKADQEKMSIALGRLAKEDPSFRVHTDEESGQTIIAAGMGLHLDIIIVDRMKREFGVEANIIGKPMVAVRETIKKTVE-E  
*P. aeruginosa* EKPFIILERMDFEPDPVISAIVEPKTKADQEKMGIALGKLAQEDPSFRVHTDEESGQTIISGIMGLHLDIIIVDRMKREFGVEANIIGKPMVAVRETIKKTVE-E  
*S. enterica* ENPIIILERMDFEPDPVISAIVEPKTKADQEKMGIALGKLAQEDPSFRVHTDEESGQTIIAAGMGLHLDIIIVDRMKREFGVEANIIGKPMVAVRETIKKTVE-E  
*E. coli* DAPIIILERMDFEPDPVISAIVEPKTKADQEKMGIALGKLAQEDPSFRVHTDEESGQTIIAAGMGLHLDIIIVDRMKREFGVEANIIGKPMVAVRETIKKTVE-E  
*S. aureus* KNDIILESMDFEPDPVHLSVEPKSKADQEKMTQALVQLQEEPTFMAHTDEETGOVIIGMGLHLDIIIVDRMKREFGVEANIGKPMVAVRETIKKTVE-E

*A. baumannii* QEGKFRVQTGGKGFHLYVYRLEPLDVEAAG--KEYEAEEVGGVVPKFEFFGAVDKIQRERKNGVLAAGYVAVGVKAVLFDGSSYHDVDSDELFSKMAAG  
*P. aeruginosa* IEGKFRVQSGGRRQFHCWIRFSAADVDEKGNITEGLVEEVEVGGVVPKFEYIPAIQKIEEOMKNGVVAAGYPLIGLKVATDGSYHDVDSNEMAKIAIA  
*S. enterica* IEGKHAQSGGRRQYGHVIMDYPLEP--GSPNKGYEINDIKGGVIPGEYIPAVDKIQEQLKAGPLAAGYVAVDMGIRLHFSSYHDVDSSELAKLAA  
*E. coli* VEGKHAQSGGRRQYGHVIMDYPLEP--GSPNKGYEINDIKGGVIPGEYIPAVDKIQEQLKAGPLAAGYVAVDMGIRLHFSSYHDVDSSELAKLAA  
*S. aureus* VQEGKFRVQSGGRRQYDVIIEFTPNET--G--AGFEENAIVGGVVPREYIPSEAEKADAMENGLAAGYPLIDVKKAVLFDGSSYHDVDSSELAKIAIA

*A. baumannii* SYAFRDGMKADPVLLEPKMKVVEVETPEIDYMGDIMGDLNRRRGMVQGGMDLDPGGTAKIAEVPLEAEMFGVATQMRSMOERATYSMEFAKYAETPRNVAE  
*P. aeruginosa* SMAATKQLAQGGGKQFIMKVEVETPEIDYMGDIMGDLNRRRGMVQGGMDLDPGGTAKIAEVPLEAEMFGVATQMRSMOERATYSMEFAKYAETPRNVAE  
*S. enterica* SIAFKEGKKAAPVLEPKMKVVEVETPEENTGDVIGDLSRRRGMKLGQSEVETG-VKIHAEVLSSEMFGYATQLRSLTKGRASVYTFMEFLKYDDAPLNVAEQ  
*E. coli* SIAFKEGKKAAPVLEPKMKVVEVETPEENTGDVIGDLSRRRGMKLGQSEVETG-VKIHAEVLSSEMFGYATQLRSLTKGRASVYTFMEFLKYDDAPLNVAEQ  
*S. aureus* SIALKCAAKKCPVILEPKMKVITEMPEEYMGDIMGDVTSGRGRVDMGEMPRGNA-QVNVAVVLSSEMFGVATSLRINTQREGVITMVEFDHVAEVPKSAIE

*A. baumannii* GIIAKFQAQGGKKGDS  
*P. aeruginosa* ALV--KKQG-----  
*S. enterica* AVI--EARGK-----  
*E. coli* AVI--EARGK-----  
*S. aureus* DIIK--KNGE-----

# B. ptsP

*P. aeruginosa* ---MLNTRKRTVQEVNSAKDKAAAGTIIVQRVKEAMGTQVCSVYLLDTEETORFVLMATEGLNKRSGIKKVSMAPEGLVGLVGTREPLENTIENAAHPRRY  
*A. baumannii* MSNMQLDTRRLVQEIIVASVLSHESLDLIMVNMQVIAEAMKVDVCSYLLDERNQRVYVLMASKGLNPESSVGHVSLQLGELVGLVGTQREEIVNLQDAPKHERF

*P. aeruginosa* RYFLAETGEEIRVNSFLGAPVHHRVRRVMGVLVQKERRRQDDEGEAFVLTVMASQALAGVIAHAHAETGSTRGLGRKKGKIGIQAQKVPVGPAGVGVKAVVVL  
*A. baumannii* LYLPEETGEEIRVNSFLGAPVHHRVRRVMGVLVQKERRRQDDEGEAFVLTVMASQALAGVIAHAHAETGSTRGLGRKKGKIGIQAQKVPVGPAGVGVKAVVVL

*P. aeruginosa* PPADLGVVDPKQVDQDIDAEIALFKQALGVRADMRAALSRLSALQRLKAEERALFVYVLMMLDASIGNEVKRIITRTGWAQAGALRQVVMHVQRFLMDDA  
*A. baumannii* PPADLGSVDPDREAEDISDEILRILDDQISSVDEIRSLDQEMHDSLMAEERALFVYVLMMLDENALPAEIKELIRDGHWAQAGALRVRVIEKHTALRQMEED

*P. aeruginosa* YLREARASVVDKIDGRRLLAYLQEEERKQNLTYEQTIIIVSEELSPAAVGLVEPAGRVLVGLVSVLGSNSHVAVILARAGMIPPTVMGAVDLPYSKVDDGIDLVDG  
*A. baumannii* YLREARASVVDKIDGRRLLAYLQEEESSHRELSPDSIIIGEEIISTAAVLELVEDVNDIAAVITSEGAANSHMVAVILARALGIPPTVGVTELPVNTLDDAEMIVDA

*P. aeruginosa* YHGEVYVYVTPNSAEELVROVSDVVAEERELSRGLAALRELPCETLTDGHRMPLVNTTGLMLADVRAQERGAEGVGLYRTEVPPMINDRFPSEKEDQLATYREQLS  
*A. baumannii* YHGEVYVYVTPNSAEELVROVSDVVAEERELSRGLAALRELPCETLTDGHRMPLVNTTGLMLADVRAQERGAEGVGLYRTEVPPMINDRFPSEKEDQLATYREQLS

*P. aeruginosa* AFHPLFVYVMTLDDIGADRALSYPFPTIIEEDNPFLLGWRGRVFTLDHPEIFLVAQIRAMLKASIELLNNLRIILPMSGTHLEEEAVHIIHRRAMVVRDEE-GVDTA  
*A. baumannii* AFHPLFVYVMTLDDIGADRALSYPFPTIIEEDNPFLLGWRGRVFTLDHPEIFLVAQIRAMLKASIELLNNLRIILPMSGTHLEEEAVHIIHRRAMVVRDEE-GVDTA

*P. aeruginosa* MPTPTGMVVEIPAAVYVQTRFLARQVDFLVSQNSDLGYLLAVDRNRRHVALDLYDYLHPHVAHAKKVVDDAFLREGKPVSTCGEMAGDPAALVLLMAMGFDOS  
*A. baumannii* MPTPTGMVVEIPAAVYVQTRFLARQVDFLVSQNSDLGYLLAVDRNRRHVALDLYDYLHPHVAHAKKVVDDAFLREGKPVSTCGEMAGDPAALVLLMAMGFDOS

*P. aeruginosa* LSMNATNLPKIKWLLRQITLTKARDLGLQLTLTDNPPQVHISLHLALRNLSTGRVINPAATVQP  
*A. baumannii* LMSNSSNLRVKAICHVPMSDAQKLLDDVMKNNRILVKSWEYFYFKTHGLADMVKSNNRLLVVS

# C. cyoA

*A. baumannii* ---MRQTI LAVLSLSTLAAALTGCGGDMVLLNSKGPVGGQSDLMMTAIYMLMLVMIPTSIIMALWFGWKYRASNKDADYKPTMAHSTAI EVVWVGIPVI  
*P. aeruginosa* MTKANPFAALKWL SLAP-ALLLGGC--DMTFLNPKGQVGMDERTLIIITATLLMLIIVVPIVMTLAFAWKYRASNTQAEYKPPDWHHSNRIEAVVWLVPCV  
*S. enterica* -----NSALLDPKQIIGLEORSIIITAFGLMLIIVVPAIILMAVGFAWKYRASNKDAPYSPNWSHNSKVEAVVWTVPII  
*E. coli* -----MGWLSLIIAGTALLSGC--NSALLDPKQIIGLEORSIIITAFGLMLIIVVPAIILMAVGFAWKYRASNKDAPYSPNWSHNSKVEAVVWTVPII

*A. baumannii* IITGILAWLFWGSHKYDYPRLTESDKAPLITQVIAEQKWIIFYPEQGIATVNEVRFPEKTPLSFKITSNFTMNSFFIPQLGGQIYAMAGMOTHLHLIAN  
*P. aeruginosa* IIAILGWI TWESTHKLDPYRPLDSEVKPVITIAQVSLDQKWLIFYPEQGIATVNEVRFPEKTPLSFKITSNFTMNSFFIPQLGGQIYAMAGMOTHLHLIAN  
*S. enterica* IIFLAVLTKWTTAL EPSKPLAHDEKPIITIEVVSMDKWFIFYPEQGIATVNEVRFPEKTPLSFKITSNFTMNSFFIPQLGGQIYAMAGMOTHLHLIAN  
*E. coli* IIFLAVLTKWTTAL EPSKPLAHDEKPIITIEVVSMDKWFIFYPEQGIATVNEVRFPEKTPLSFKITSNFTMNSFFIPQLGGQIYAMAGMOTHLHLIAN

*A. baumannii* ETGVYRCFSSNYSGYGFSGMRFKAHSVTE-QQFNWEAAVRAAGNGTTINPEAVQKTLTDOAELATLRDGRSKHQIEHLVNRKAAAGDEALAKAEAMKPV  
*P. aeruginosa* ETEGVDFDGI SANYSGGFSGMRFKAIATSE-QGFQDWAKVKAAPTSLS-IGTYPELVKPSVNPPTVYFSSVPELFGHILTKYEHGDAKGAAGHAG-  
*S. enterica* EPGTYDGI SASYSGPGFSGMRFKAIATPDRAAFDQWAKAKQSPNTMSDMAAFKLAAPSEYNQVEYFVSNVDPDLFADVINKFMAGHCKSMDMTQPEGEH-  
*E. coli* EPGTYDGI SASYSGPGFSGMRFKAIATKDRAEFDQWAKAKQSPNTMSDMAAFKLAAPSEYNQVEYFVSNVDPDLFADVINKFMAGHCKSMDMTQPEGEH-

*A. baumannii* FPTKPHPVTYSSVPEPKLFETIINHYSNYHGADHSAHAETAAETHVAAEAHAQGE  
*P. aeruginosa* -----AEHEAAMTG-----HDMQDMQAMQGMKMKDMMHMQPSTQE  
*S. enterica* -----SAHEG-----MEGDMSHAESAH-----  
*E. coli* -----SSHEG-----MEGDMSHAESANSKG-----

# D. cyoB

*A. baumannii* IDMIFGKLGWDSIFTEPIVLTVMFMALGIAV LGGITYFKKWTY LKKEWFTTVDHKKIGIMYIIVSVMLLRGFADAIMMRLQLFLAKGGGEGYLHPD  
*P. aeruginosa* ---MFGKLTLSAVPYHEPIVMVTLAVVALLGLGVVGAITYYRKWTYLTWEWLTISVDHKKIGIMYIIVVALVMLVRGFADAIMMRLQLALAEGANHGYLPPE  
*S. enterica* ---MFGKLSLDAVPFHEPIVMVTIAAIVGGGLAIAAITYFGKWTY LKKEWLTISVDHKKRIGIMYIIVVALVMLLRGFADAIMMRSQALASAGEAGFLPPH  
*E. coli* ---MFGKLSLDAVPFHEPIVMVTIAGIILGGGLAVGLITYFGKWTY LKKEWLTISVDHKKRIGIMYIIVVALVMLLRGFADAIMMRSQALASAGEAGFLPPH

*A. baumannii* HYDQIFTAHGVIMIFVAMGLVVGMMNISVPLQIGARDVAFP LNSLSFWLFAAGAAGLMMLSLVLGEFAATGWMAYPPLSG IQYSPGVGVDDYI IVALQVLS  
*P. aeruginosa* HYDQIFTAHGVIMIFMAMPFMTGLMNLAVPLQIGARDVAFP LNSLSFWLLVVSAMLVNVS LGLGEFARTGWVAYPP LSE LAYSPGVGVDDYI IVALQVLS  
*S. enterica* HYDQIFTAHGVIMIFVAMPFVI GLMNLVPLQIGARDVAFP LNSLSFWFTVVGV I LVNLS LGVGEFAQTGWLAYPP LSG IEYSPGVGVDDYI IVALQVLS  
*E. coli* HYDQIFTAHGVIMIFVAMPFVI GLMNLVPLQIGARDVAFP LNSLSFWFTVVGV I LVNVS LGVGEFAQTGWLAYPP LSG IEYSPGVGVDDYI IVALQVLS

*A. baumannii* GLGTLLSGVNFVVTI IKMRAPGMK LMDMP I FTWTS LCTAVLTI IASFPVLTGT LAMLT LDYRFGHFFTNE LGGSPMLVYNLI IWTWGHPEVYI I LPAFGL  
*P. aeruginosa* GMGTLLTGINFVTVFKMRAPGMK LMQMP I FTWCTCFAN I IIVASFP I LTAALGLLS LDYR LDMHFFTNE LGGNAMY INLFWAWGHPEVYI I LPAFGI  
*S. enterica* GI GTTLLTGINFVTVFKMRAPGMTFMKMPV FTWAS LCANVLI I IASFP I LTVTVALLT LDYR LGTHFFTNDMGGNMMY INL IAWAWGHPEVYI I LPAFGV  
*E. coli* GI GTTLLTGINFVTVFKMRAPGMTFMKMPV FTWAS LCANVLI I IASFP I LTVTVALLT LDYR LGTHFFTNDMGGNMMY INL IAWAWGHPEVYI I LPAFGV

*A. baumannii* YSEIVATFSRKALEFKSMVYAT IAITVLA FVWVWVHFFMTGAGANVNAFFG I TMTV I A I PTGVK I FSWLFTMYKGR I TITPMLWT LGFLVTFG I GGLT  
*P. aeruginosa* FSEVATFAGKRMFGYKSMVYASAAITFLGFTVWLHFFMTGSGGDVNGFFGVATMLSI I PTGKLFNWLFTIYKGRLESTP I LWT LGFMVTF I GGMT  
*S. enterica* FSEI AATFSRKRLEFGYTS LVAATVCIITVLSF I VVWVHFFMTGAGANVNAFFG I TMT I A I PTGVK I FSWLFTMYKGR I VHSAMMT I GF I VTFVSGMT  
*E. coli* FSEI AATFSRKRLEFGYTS LVAATVCIITVLSF I VVWVHFFMTGAGANVNAFFG I TMT I A I PTGVK I FSWLFTMYKGR I VHSAMMT I GF I VTFVSGMT

*A. baumannii* GVLAVVPPADFLVHNSLFLIAHFHNV I IGGVVFVGFAG I IYVWPKMFGWKLNEAWGKA AFVWFVGFYAFMPLY I LGFMGTRRLNTYDNP EWDPYLA I  
*P. aeruginosa* GVLLAIPGADFLVHNSLFLIAHFHNT I IGGAVFGYLAGFAFWPKAFGFTLDEKWKRSFWCWL VGFYAFMPLY I LGFMGTRRLNHYDNP LKWPYLVV  
*S. enterica* GVLLAVP GADFLVHNSLFLIAHFHNV I IGGVVFVGFAGMTYVWPKAFGFKLNETWGRKRAFVW I IGGVAFMPLY I LGFMGTRRLSQQIDPQFHTMLM I  
*E. coli* GVLLAVP GADFLVHNSLFLIAHFHNV I IGGVVFVGFAGMTYVWPKAFGFKLNETWGRKRAFVW I IGGVAFMPLY I LGFMGTRRLSQQIDPQFHTMLM I

*A. baumannii* ALFGAVLVIAIGIACFLMGI I VGF LQRHQNMDYT GDPWDART LEWATSSPAPFYNAFHEPDASG I DRFWTDRENQVAVYARNTKVIED I HMPTRDRAAGFV I AM  
*P. aeruginosa* AFFGAVLIFCGIACQLIQLFVSVRNRKQLADVNGDPWEGRT LEWATSSPAPFYNAFHEPDASG I DRFWTDRENQVAVYARNTKVIED I HMPKNTAAGFS I AV  
*S. enterica* AAAAGAA I IALG I LQQLIQIFVSI RDRDQNRDLT GDPWGGRT LEWATSSPAPFYNAFVPHVHERDAF WEMKEKGEAYQQPGQYEEI HMPKNSGAG I V I AA  
*E. coli* AASGAVL I IALG I LQQLIQMYVSI RDRDQNRDLT GDPWGGRT LEWATSSPAPFYNAFVPHVHERDAF WEMKEKGEAYKPKPDHYEEI HMPKNSGAG I V I AA

*A. baumannii* F I T L L G F A L I W H I W W L V V V S F V A A V V S L V S S F T K N V D Y Y V P A A E V E R I E N E R Y A L L E K H L K K D - -  
*P. aeruginosa* F A F V F G F A A I W H I W W L M A V G F V G M I G S F I V R S Y N Q D V D Y Y V P E E I E K I E S A R F Q Q L A K Q V - - - -  
*S. enterica* F A T V F G F A M I W H I W W L A I V G F A G M I I S W I V K S F D E D V D Y Y V P V P E V E K L E N Q H F D E I T K A G L K N G N  
*E. coli* F E S T I F G F A M I W H I W W L A I V G F A G M I I T W I V K S F D E D V D Y Y V P V A E I E K L E N Q H F D E I T K A G L K N G N