

S.pneumoniae -----TGAATCAAAACTTTTAC TTTAGCTACTT TAGATAGT---GTTTGTAG-ACATGTCA 52  
S.parasanguinis -----CAATTCAAAAATTTTAC TTTAGCTACTT TAGATAGT---GTTTGTAG-ACATGATC 52  
A.urinae -----ATTTTAC TTTAGCTACTT TAGATAGC---GTTTGTACTATGAAACA 43  
S.uberis -----TTAC TTTAGCTTCTT TAGATAGT---GTTTGTAGTCATGAGTT 40  
E.faecium --CACAACTGAATAACTTTTAC TTTAGCTACTT TAGATAG---GTTTGTATTCATCA--- 52  
E.hirae -----AATAACTTTTAC TTTAGCTACTT TAGATAG---GTTTGTATTCATGAA--- 45  
E.faecium\_aroF -----TATTAC TTTAGCTACTT TAGATAG---GTTTGTATTCATGACT--- 40  
C.maltaromaticum -----AATACTTTTTTTC TTTAGCTACTT TAGATAGT---GTTTGTGTACATGAAAA 48  
S.gallolyticus -----AAATCATTACTATTAC TTTAGTTTCTT TAGATAGA-CGTTTGTAGCCAAT--- 49  
S.thermophilus ---CTTAAAGC-TTGTTATTAC TTTAGTTTCTT TAGATAGGGC GTTTGTGTTTCA---- 51  
S.agalactiae ACAAACAATACTTATTATTAC TTTAGTTTCTT TAGATAGA-CGTTTGTAGCCTC---- 54



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S.pneumoniae -CCATGGATGCAAAACAGTTC AAGCAATTTGTTTGTATCTATG-TGGCTAAGATTTTTGAT 110  
S.parasanguinis -TCATGGATGCAAAACAACCC AAGCAATTTGTTTGTATCTATG-TGGCTAAGATTTTTGAT 110  
A.urinae -TCATAGATACAAACGTCAAAC TCAA---GTTTGTATCTATGATGGCTAAGGACTCTTAAG 99  
S.uberis -TCATGGATACAAACACGTTA AACGTTACGTTGTATCTATG-AGGCTAAGGACTTTTTG 98  
E.faecium -TGATGGATACAAACG--TTA AACGAC-AGTTTGTATCTATGATGGCTAAGA AACTTTGT 108  
E.hirae -TTATGGATACAAACA--CC AAACAACCTGGTTGTATCTATGATGGCTAAGA AACTTTGT 102  
E.faecium\_aroF -TCGTGGGTACAAAC--- AAACAG--GTTTGTATCTATGATGGCTAAGA AACTTTTTA 92  
C.maltaromaticum ATCATGGATGCAAAAC--- CGAA-AT--GTTTGTGCTATGGGGCTGAAGGATTTTTAAC 100  
S.gallolyticus --CATGGATGCAAAACG--TCAT--ACC--GTTTGTATCTATG-AAGCTAAGCATTTTAC 100  
S.thermophilus ----AGATACAAAGC--TCAA--TAA--GTTTGTATCTATG-AAGCTAAGCATTTTGT 99  
S.agalactiae ----AAGGATACAAACG--TC ACGCAA--GTTTGTATCTATG-AAGCTAAGCATTTTGT 106



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S.pneumoniae TGTTG-----GTCCATATAGA-TGAATA---TCTAAATGGACTAGCTAAG-TTGTAAC 157  
S.parasanguinis GATG-----GTCCATAGAGC-T-AGTA---TCTAAATGGACCGAG-GTT-TTGTAAC 155  
A.urinae CGTGTCT---AGCCCTCATAGAATGGATAAAATCTAAATGGGCTATACCAC-TATTAAT 154  
S.uberis AGTTGTT---TGTCCACATAGA-TAAAAATA-TCTAAGTGGACGCTACCATACAGCAAG 152  
E.faecium ATTGCAGCAAAAAGCCACGTAGACAAAATGCTAAGTGGCTGAGCAGTGAAA-TACAAAG 167  
E.hirae ATTACGC---AAAAGCCAGTAGACATTACGTTAAGTGGCTAAGCGA--AAAG-TACAAAG 157  
E.faecium\_aroF AC-ACGACTTACAGCCACGTAGAGAAATTCATCTAT---AGTGGCTATTT-TATATTT 145  
C.maltaromaticum GT-GCAAAATTC-GCCACATAGATTGATTGATAAAAT-CTAAGTGGCT-TAC-TAAATTT 155  
S.gallolyticus TGTTG--AGAAAAGCCGATTAGATACTTTGAGT--T-CTAATTTGGCAA-GTAAGATA-- 151  
S.thermophilus GAT---GGATTAGCCGATTAGATGAA--GAGG--T-CTAACCGGTGACATAGGCTAGC 149  
S.agalactiae GATGAA-AGCAGAGCCGATTAGATCATTTCAATAAT--CTAGTTGGTTAAGGCAATATTT 163



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S.pneumoniae TTGTTAGGTTATTT-CAAGTA----CCC GTTTAGA--TAGT--ATCTAGGCGGTTTTTTG 208  
S.parasanguinis TTGTTGGAGAATTT-CAAGCA----TCC GTTTAGA--GAATG-ATCTAAGCGGATTTTTTT 207  
A.urinae ATATGCTATTATTC-AGCCCA----TTT AGTTTT--TTCCA-AACTAGGTGGGCTTTTTT 205  
S.uberis AGTTCAAGTGTATTTTACCTA----CCTCTCTATATGTGTCA-GACCATTTAGATATTCT 207  
E.faecium TAAA---AGTATCAAGCATTTC-TACTTTTTCAATTTATTTTCC-- 206  
E.hirae TAATACCGATTTCTTACTTACATACTCTTTTCGATACTCAATCCATTTAGACGTTTTGTCT 217  
E.faecium\_aroF TTGCAGCGCTTTTTTCAAGGCTC---GTTGAAGATGTTCACT--GTAGAGCAATTTCTCT 198  
C.maltaromaticum AACTGACAGAATTTTTTGTGTCAG---TCTGAAGACATTCACTTTGGATTTTATCAAATCTT 211  
S.gallolyticus -TGTTTTTACGCATGTATTGA--AAACCAGTTAGACTTTTGA-GCCTAGCTGGTTTTTATT 207  
S.thermophilus TTGTGCTAGTCAAGATGCAGA--GAACCAGTTGGGTCTGT---CCTAGCTGGTTTTTCC 203  
S.agalactiae TTTCGCCCTCCCGTGCACAGA--GGAATTGAGAGAAATAATT-AACCACTAGATGTGAG 220



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S.pneumoniae TTTTATCTTTTCTGAGAAGGAG----- 230  
S.parasanguinis ATTTAT-TTTGCAGAAAAGGA----- 227  
A.urinae TTATACCTTTTGGGGAGTGATAGTA----- 231  
S.uberis AAATGGTCTTATTT----- 221  
E.faecium ----- 206  
E.hirae AAATGGATTTTTTGTTTTCAA AATTGAAGGAG 249  
E.faecium\_aroF ACAGGGACATCTTTTTTTGTTGATT----- 223  
C.maltaromaticum A-GTGGATGTCT----- 222  
S.gallolyticus -TATTGTGGCTGATGTAGA ACTAAG----- 231  
S.thermophilus ATGCCGCGGTCTAT----- 217  
S.agalactiae GTCTAGTTGG----- 230



Abbreviation	species	Acc. number	downstream protein	Protein annotation
S.agalactiae	<i>Streptococcus agalactiae</i> NEM316	NC_004368.1	gbs2033	ABC transporter substrate-binding protein
S.pneumoniae	<i>Streptococcus pneumoniae</i> SPNA45	NC_018594.1	SPNA45_00365	substrate-binding protein (pseudogene)
S.gallolyticus	<i>Streptococcus gallolyticus</i> UCN34	NC_013798.1	GALLO_0122	ABC transporter substrate-binding protein
S.thermophilus	<i>Streptococcus thermophilus</i> LMG 18311	NC_006448.1	stu0201	ABC transporter substrate binding
S.uberis	<i>Streptococcus uberis</i> 0140J	embj AM946015.1	SUB0137	ABC transporter substrate-binding protein
C.maltaromaticum	<i>Carnobacterium maltaromaticum</i> LMA28	embj HE999757.2	BN424_2221	ABC transporter substrate-binding protein
E.hirae	<i>Enterococcus hirae</i> ATCC 9790	gb CP003504.1	EHR_05180	ABC-type uncharacterized transport system
A.urinae	<i>Aerococcus urinae</i> ACS120VCol10a	gb CP002512.1	HMPREF9243_1135	ABC transporter substrate binding protein
S.parasanguinis	<i>Streptococcus parasanguinis</i> FW213	NC_017905.1	Spaf_1564	ABC transporter substrate-binding protein
E.faecium	<i>Enterococcus faecium</i> NRRL B-2354	gb CP003583.1	M7W_2682	ABC superfamily ATP binding cassette
E.faecium_aroF	<i>Enterococcus faecium</i> NRRL B-2354	gb CP004063.1	M7W_1273	aroF:2-keto-3-deoxy-D-arabino-heptulosonate-7-phosphate synthase