DUF1700-ah	nelical+FTSW_R			
		ODA_SPOVE Listeria		
CAC98500.1	lmo0421	monocytogenes EGDe	bacteria>firmicutes	SIGMA-HTH->PADR-HTH->DUF17 ahelical+FTSW_RODA_SPOVI
DUF1700-ah	nelical + Pentape	ptide		DADD LITU - DUETA
AOH56696.1	ABE28_020195	Bacillus muralis	bacteria> firmicutes	PADR-HTH-> DUF17 ahelical+Pentapeptid
		+Lial-LiaF-TM+To Spirosoma		PADR-HTH->DUF17
AKD55949.1	SD10_14600	radiotolerans	bacteria>bacteroidetes	ahelical+PspC(s)+Lial-LiaF-TM+To rack(s
DUF1/00-ar	nelical+PspC+L	ial-LiaF-TM+Toas	t-rack	PADR-HTH->DUF17
AOW09537.1	EM308_08495	Flavobacterium gilvum	bacteria> bacteroidetes	ahelical+PspC+Lial-LiaF-TM+To rack->TM+Toast-rack->SIG+To rac
DUF1700-ah	nelical+TM(s)			
AAO82145.1	EF_2427	Enterococcus faecalis V583	bacteria > firmicutes	PADR-HTH-> DUF17 ahelical+TM(s PADR-HTH-> DUF17
CAC98678.1	lmo0600	Listeria monocytogenes EGDe	bacteria>firmicutes	ahelical+TM(s)->SIG+Toast-ra >ACET->  <-X(s)<-SIG+TM
DUF1707-SH	HOCT+Toast-rad	ck		
BAD60342.1	NFA_54900	Nocardia farcinica IFM 10152	bacteria > actinobacteria	SIG+TM(s)+HAMP+ACYC  SIG+TM >SIG+TM(s)+HISKIN->REC+Ge HTH->DUF1707-SHOCT+Toast-rac
CCP43715.1	Rv0966c	Mycobacterium tuberculosis H37Rv	bacteria>actinobacteria	DUF1707-SHOCT+Toast-rac
CAB88834.1	SCO2893	Streptomyces coelicolor A32	bacteria>actinobacteria	TM(s)->TM(s)->ABC-ATPa >DUF1707-SHOCT+Toast-rac
Lial-LiaF-TN	∕I+Toast-rack			
CAB15300.1	liaF	Bacillus subtilis subsp subtilis str 168	bacteria≻ firmicutes	Lial-LiaF-TM->PspA->SIG+Toast-re >Lial-LiaF-TM+Toast-re >SIG+TM+HAMP+HISK >REC+GerE-HTH
ABD83157.1	Sde_3902	Saccharophagus degradans 240	bacteria> proteobacteria> gammaproteobacteria	Lial-LiaF-TM+Toast-ra > SIG+TM(s)+HISKIN-> REC+G& HTF
AFH48155.1	IALB_0443	Ignavibacterium album JCM 16511	bacteria>ignavibacteriae	Lial-LiaF-TM+Toast-ra >SIG+TM(s)+HISKIN->REC+Ge
AEU34960.1	AciX8_0610	Granulicella mallensis	bacteria>acidobacteria	HTH->X(s)->TN SIGMA-HTH->ZF+TM->TM+L LiaF-TM->SIG+LiaI-LiaF-TM(s)+To
	al-LiaF-TM+Toa	MP5ACTX8	pacteria≥aciuODacteria	LiaF-TM->SIG+LiaI-LiaF-TM(s)+10 rac
AKD55949.1	SD10_14600	Spirosoma	bacteria> hacternidetes	PADR-HTH->DUF17 ahelical+PspC(s)+Lial-LiaF-TM+To
PspC+Lial-L		radiotolerans		rack(s
ABY34522.1	Caur_1294	Chloroflexus aurantiacus J10fl	bacteria> chloroflexi	PspC+Lial-LiaF-TN
PspC+Lial-l	_iaF-TM(s)+Toa			
ACV77657.1	Namu_1253	Nakamurella multipartita DSM 44233	bacteria>actinobacteria	<-REC+GerE-HTH<-PspC+Lial-Li TM+HISKIN  PspC+Lial-Li TM(s)+Toast-rack->X->  <-SIG+TM
PspC+Lial-L	_iaF-TM+HISKII			
AIJ13865.1	SLIV_14405	Streptomyces lividans TK24	bacteria>actinobacteria	<-PspC+TM(s)+Toast-rack  PspC+L LiaF-TM+HISKIN->REC+GerE-HTH
BAB98004.1	Cgl0611	Corynebacterium glutamicum ATCC 13032	bacteria>actinobacteria	<-SIG+TM(s)  X(s)-> PspC+TM(s)+Toast-rack  PspC+L LiaF-TM+HISKIN->REC+GerE-H' >TM(s
SHOCT-like				
	+Coiled-coil+T			SHOCT-like+Coiled-coil+Toast-ra
AQL53774.1	BZG32_08695	oast-rack  Enterococcus faecalis	bacteria>firmicutes	
SHOCT-like	BZG32_08695 +Toast-rack	Enterococcus faecalis Deinococcus		>PspC->SIG+TM(s SHOCT-like+Toast-rack->SHOCT-li
SHOCT-like	BZG32_08695 +Toast-rack DR_0019	Enterococcus faecalis  Deinococcus radiodurans R1  Bacillus subtilis	bacteria> deinococcus-thermus> deinococci	>PspC->SIG+TM(s SHOCT-like+Toast-rack->SHOCT-l >ZNR-inactive+DUF20 HTH+SHOCT-like->SIR.
SHOCT-like	BZG32_08695 +Toast-rack	Enterococcus faecalis  Deinococcus radiodurans R1  Bacillus subtilis subsp natto BEST195		>PspC->SIG+TM(s SHOCT-like+Toast-rack->SHOCT-li >ZNR-inactive+DUF2C HTH+SHOCT-like->SIR. yvIA-SIG+TM(s)->SHOCT-like+To rack->PspC->SIG+TM(s
SHOCT-like	BZG32_08695 +Toast-rack DR_0019	Enterococcus faecalis  Deinococcus radiodurans R1  Bacillus subtilis subsp natto	bacteria> deinococcus-thermus> deinococci	> PspC->SIG+TM(s SHOCT-like+Toast-rack->SHOCT-li >ZNR-inactive+DUF20 HTH+SHOCT-like->SIR. yvlA-SIG+TM(s)->SHOCT-like+To rack->PspC->SIG+TM(s)-> yvlA-SIG+TM(s)->SHOCT-like+To rack->PspC->SIG+TM(s)->
SHOCT-like  AAF09613.1  BAI87136.2  CAB15517.1	BZG32_08695 +Toast-rack DR_0019	Enterococcus faecalis  Deinococcus radiodurans R1  Bacillus subtilis subsp natto BEST195  Bacillus subtilis strusp subsp subtilis strusp subtilis subsp s	bacteria > deinococcus - thermus > deinococci bacteria > firmicutes	> PspC->SIG+TM(s SHOCT-like+Toast-rack-> SHOCT-li > ZNR-inactive+DUF20 HTH+SHOCT-like-> SIR. yvlA-SIG+TM(s)-> SHOCT-like+To rack-> PspC-> SIG+TM(s)-> yvlA-SIG+TM(s)-> SHOCT-like+To rack-> PspC-> SIG+TM(s)-> SIG+TM
SHOCT-like  AAF09613.1  BAI87136.2  CAB15517.1	BZG32_08695 +Toast-rack DR_0019 yvlB	Deinococcus radiodurans R1  Bacillus subtilis subsp natto BEST195  Bacillus subtilis subsp subtilis subsp subtilis str	bacteria > deinococcus-thermus > deinococci bacteria > firmicutes bacteria > firmicutes	>PspC->SIG+TM(s SHOCT-like+Toast-rack->SHOCT-li >ZNR-inactive+DUF20 HTH+SHOCT-like>SIR. yvIA-SIG+TM(s)->SHOCT-like+To rack->PspC->SIG+TM(s)-> SIG+TM(s)->SHOCT-like+To rack->PspC->SIG+TM(s)-> SIGMA-HTH->ZF+TM->TM+L LiaF-TM->SIG+LiaI-LiaF-TM(s)+To
SHOCT-like  AAF09613.1  BAI87136.2  CAB15517.1  SIG+Lial-Lia  AEU34960.1	BZG32_08695  +Toast-rack  DR_0019  yvlB  yvlB  sF-TM(s)+Toast-	Enterococcus faecalis  Deinococcus radiodurans R1  Bacillus subtliis subsp natto BEST195  Bacillus subtliis subsp subtilis srr 168  -rack  Granulicella mallensis MPSACTX8	bacteria > deinococcus-thermus > deinococci bacteria > firmicutes bacteria > firmicutes	>PspC->SIG+TM(s SHOCT-like+Toast-rack->SHOCT-li >ZNR-inactive+DUF20 HTH+SHOCT-like>SIR. yvIA-SIG+TM(s)->SHOCT-like+To rack->PspC->SIG+TM(s)-> SIG+TM(s)->SHOCT-like+To rack->PspC->SIG+TM(s)-> SIG+TM
SHOCT-like  AAF09613.1  BAI87136.2  CAB15517.1  SIG+Lial-Lia  AEU34960.1	BZG32_08695 +Toast-rack DR_0019 yvlB yvlB sF-TM(s)+Toast-	Enterococcus faecalis  Deinococcus radiodurans R1  Bacillus subtilis subsp natto BEST195  Bacillus subtilis subsp subtilis str 168  Frack  Granulicella mallensis MP5ACTX8	bacteria > deinococcus-thermus > deinococci bacteria > firmicutes bacteria > firmicutes	> PspC-> SIG+TM(s  SHOCT-like+Toast-rack-> SHOCT-li > ZNR-inactive+ DUF20 HTH+SHOCT-like+To rack-> PspC-> SIG+TM(s)  yvIA-SIG+TM(s)-> SHOCT-like+To rack-> PspC-> SIG+TM(s) SIG+TM(s)-> SHOCT-like+To rack-> PspC-> SIG+TM(s)-> SIG+TM SIG+TM LiaF-TM-> ZF+TM-> TM+L LiaF-TM-> SIG+LiaI-LiaF-TM(s)+To rac > SIG+TM+HAMP+HSK
SHOCT-like AAF09613.1  BAI87136.2  CAB15517.1  SIG+Lial-Lia  AEU34960.1  SIG+Lial-Lia	BZG32_08695 + Toast-rack  DR_0019  yvlB  yvlB  sF-TM(s) + Toast- Acix8_0610  aF-TM+Toast-ra	Enterococcus faecalis  Deinococcus radiodurans R1  Bacillus subtilis subsp natto BEST195  Bacillus subtilis subsp subtilis strack  Granulicella mallensis MP5ACTX8  Ck  Bacillus subtilis str	bacteria> deinococcus-thermus> deinococci bacteria> firmicutes bacteria> firmicutes bacteria> acidobacteria	> PspC-> SIG+TM(s  SHOCT-like+Toast-rack-> SHOCT-li > ZNR-inactive+ DUF20 HTH+SHOCT-like+To rack-> PspC-> SIG+TM(s)  yvIA-SIG+TM(s)-> SHOCT-like+To rack-> PspC-> SIG+TM(s) SIG+TM(s)-> SHOCT-like+To rack-> PspC-> SIG+TM(s)-> SIG+TM SIG+TM LiaF-TM-> ZF+TM-> TM+L LiaF-TM-> SIG+LiaI-LiaF-TM(s)+To rac > SIG+TM+HAMP+HSK
SHOCT-like AAF09613.1  BAI87136.2  CAB15517.1  SIG+Lial-Lia AEU34960.1  SIG+Lial-Lia CAB15300.1	BZG32_08695 + Toast-rack  DR_0019  yvlB  yvlB  sF-TM(s) + Toast- Acix8_0610  aF-TM+Toast-ra	Enterococcus faecalis  Deinococcus radiodurans R1  Bacillus subtilis subsp natto BEST195  Bacillus subtilis subsp subtilis strack  Granulicella mallensis MP5ACTX8  Ck  Bacillus subtilis str	bacteria> deinococcus-thermus> deinococci bacteria> firmicutes bacteria> firmicutes bacteria> acidobacteria	> PspC-> SIG+TM(s  SHOCT-like+Toast-rack-> SHOCT-like+Toast-rack-> SHOCT-like+Toast-rack-> SHOCT-like-> SIR  yvlA-SIG+TM(s)-> SHOCT-like+To rack-> PspC-> SIG+TM(s)  yvlA-SIG+TM(s)-> SHOCT-like+To rack-> PspC-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM(s)-Toack-> PspC-> SIG+TM(s)-Toack-> PspC-> SIG+TM(s)-Toast-rack-> SIG+TM-> SIG+T
SHOCT-like AAF09613.1  BAI87136.2  CAB15517.1  SIG+Lial-Lia  AEU34960.1  SIG+Lial-Lia  CAB15300.1  SIG+TM(s)+  ALR80200.1	BZG32_08695  + Toast-rack  DR_0019  yvlB  yvlB  sF-TM(s)+Toast- AciX8_0610  sF-TM+Toast-rack  HSISS4_01188	Enterococcus faecalis  Deinococcus radiodurans R1  Bacillus subtilis subsp natto BEST195  Bacillus subtilis str 168  Granulicella mallensis MPSACTX8  ck  Bacillus subtilis str 168  Streptococcus subsp subtilis str 168	bacteria> deinococcus-thermus> deinococci  bacteria> firmicutes  bacteria> firmicutes  bacteria> acidobacteria  bacteria> firmicutes	>PspC->SIG+TM(s  SHOCT-like+Toast-rack->SHOCT-like+Toast-rack->SHOCT-like>SIR-Imactive+DUF20 HTH+SHOCT-like>SIR  yvIA-SIG+TM(s)->SHOCT-like+To rack->PspC->SIG+TM(s)->SIG+TM(s)->SIG+TM(s)->SIG+TM(s)->SIG+TM(s)->SIG+TM(s)->SIG+TM(s)-Toack->PspC->SIG+TM(s)-Toack->PspC->SIG+TM(s)-Toack->PspC->SIG+TM(s)-Toack->PspC->SIG+TM(s)-Toack->TM-PspA->SIG+TM->TM-PspA->SIG+TM->TM-PspA->SIG+TM->TM-PspA->SIG+TM->TM-PspA->SIG+TM->TM-PspA->SIG+TM->TM-PspA->SIG+TM->TM-PspA->SIG+TM->TM-PspA->SIG+TM->TM-PspA->SIG+TM->TM-PspA->SIG+TM->TM-PspA->SIG+TM->TM-PspA->TM-PspA->SIG+TM->TM-PspA->TM-PspA->SIG+TM->TM-PspA->TM
SHOCT-like AAF09613.1  BAI87136.2  CAB15517.1  SIG+Lial-Lia  AEU34960.1  SIG+Lial-Lia  CAB15300.1  SIG+TM(s)+  ALR80200.1  ABD31150.1	BZG32_08695  +Toast-rack  DR_0019  yvlB  yvlB  F-TM(s)+Toast- Acix8_0610  F-TM+Toast-rack  HSISS4_01188  SAOUHSC_02100	Enterococcus faecalis  Deinococcus radiodurans R1  Bacillus subtilis subsp natto BEST195  Bacillus subtilis str 168  -rack  Granulicella mallensis MPSACTX8  ck  Bacillus subtilis str 168  Streptococcus salivarius	bacteria > deinococcus-thermus > deinococci  bacteria > firmicutes  bacteria > acidobacteria  bacteria > firmicutes  bacteria > firmicutes	> PspC-> SIG+TM(s  SHOCT-like+Toast-rack-> SHOCT-like+
SHOCT-like AAF09613.1  BAI87136.2  CAB15517.1  SIG+Lial-Lia AEU34960.1  SIG+Lial-Lia CAB15300.1  SIG+TM(s)+ ALR80200.1  ABD31150.1	BZG32_08695  +Toast-rack  DR_0019  yvlB  yvlB  F-TM(s)+Toast- Acix8_0610  BF-TM+Toast-rack  HSISS4_01188  SAOUHSC_02100  ack	Enterococcus faecalis  Deinococcus radiodurans R1  Bacillus subtilis subsp natto BEST195  Bacillus subtilis subsp subtilis str 168  -rack  Granulicella mallensis MP5ACTX8  ck  Bacillus subtilis str 168  Streptococcus salivarius  Staphylococcus aureus subsp	bacteria> deinococcus-thermus> deinococci  bacteria> firmicutes  bacteria> firmicutes  bacteria> acidobacteria  bacteria> firmicutes  bacteria> firmicutes	> PspC-> SIG+TM(s)  SHOCT-like+Toast-rack-> SHOCT-like+Toast-rack-> SHOCT-like+Toast-rack-> SHOCT-like+Toast-rack-> PspC-> SIG+TM(s)  yvlA-SIG+TM(s)-> SHOCT-like+Toack-> PspC-> SIG+TM(s)  yvlA-SIG+TM(s)-> SHOCT-like+Toack-> PspC-> SIG+TM(s)-Toack-> PspC-> SIG+TM(s)-Toack-> PspC-> SIG+TM(s)-Toack-> PspC-> SIG+TM(s)-Toack-> PspC-> SIG+TM-> TM-LiaF-TM-> SIG+TM-> TM-Cast-rack-> AIG-TM-> TM-Cast-rack-> A
SHOCT-like AAF09613.1  BAI87136.2  CAB15517.1  SIG+Lial-Lia  AEU34960.1  SIG+Lial-Lia  CAB15300.1  SIG+TM(s)+  ALR80200.1  ABD31150.1	BZG32_08695  +Toast-rack  DR_0019  yvlB  yvlB  F-TM(s)+Toast- Acix8_0610  F-TM+Toast-rack  HSISS4_01188  SAOUHSC_02100	Enterococcus faecalis  Deinococcus radiodurans R1  Bacillus subtilis subsp nation BEST195  Bacillus subtilis subsp subtilis subsp subtilis str 168  Frack  Granulicella mallensis MP5ACTX8  ck  Bacillus subtilis str 168  Streptococcus salivarius  Staphylococcus aureus subsp aureus NCTC 8325	bacteria > deinococcus-thermus > deinococci  bacteria > firmicutes  bacteria > acidobacteria  bacteria > firmicutes  bacteria > firmicutes	> PspC-> SIG+TM(s)  SHOCT-like+Toast-rack-> SHOCT-like+Toast-rack-> SHOCT-like+Toast-rack-> SHOCT-like+Toast-rack-> PspC-> SIG+TM(s)  yvIA-SIG+TM(s)-> SHOCT-like+Toack-> PspC-> SIG+TM(s)  yvIA-SIG+TM(s)-> SHOCT-like+Toack-> PspC-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM-> SIG+TM(s)+Toast-rack-> AIPase-> TM(s)-SIG+TM(s)+Toast-rack-> AIPase-> TM(s)-SIG+TM-> REC+GerE-HTH-> SIG+TM(s)+Toast-rack-> AIPase-> TM(s)-TM-> SIG+TM(s)-TM-> REC+GE-TM-> REC-GE-TM-> REC-GE-TM-
SHOCT-like AAF09613.1  BAI87136.2  CAB15517.1  SIG+Lial-Lia AEU34960.1  SIG+Lial-Lia CAB15300.1  SIG+TM(s)+ ALR80200.1  ABD31150.1	BZG32_08695  +Toast-rack  DR_0019  yvlB  yvlB  F-TM(s)+Toast- Acix8_0610  BF-TM+Toast-rack  HSISS4_01188  SAOUHSC_02100  ack	Enterococcus faecalis  Deinococcus radiodurans R1  Bacillus subtilis subsp natto BEST195  Bacillus subtilis subsp subtilis str 168  Tack  Granulicella mallensis MP5ACTX8  Ck  Bacillus subtilis subsp subtilis str 168  Streptococcus salivarius  Staphylococcus aureus subsp aureus NCTC 8325  Deinococcus deserti VCD115  Bacillus cereus E33L	bacteria> deinococcus-thermus> deinococci  bacteria> firmicutes  bacteria> firmicutes  bacteria> acidobacteria  bacteria> firmicutes  bacteria> firmicutes	> PspC-> SIG+TM(s)  SHOCT-like+Toast-rack-> SHOCT-like+Toast-rack-> SHOCT-like+Torack-> SHOCT-like+Torack-> PspC-> SIG+TM(s)  yvIA-SIG+TM(s)-> SHOCT-like+Torack-> PspC-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM-> SIG+TM(s)-SIG+TM-> SIG+TM(s)-SIG+TM-> SIG+TM(s)-SIG+TM-> SIG+TM(s)-TGast-rack-> ATPase-> TM(s)-SIG+TM-> SIG+TM-> SIG+TM(s)-HISKIN-> SIG+TM-> S
SHOCT-like AAF09613.1  BAI87136.2  CAB15517.1  SIG+Lial-Lia  AEU34960.1  SIG+Lial-Lia  CAB15300.1  SIG+TM(s)+  ALR80200.1  ABD31150.1  SIG+Toast-ra  ACO46500.1  AJJ31452.1  AAM36414.1	BZG32_08695  + Toast-rack  DR_0019  yvlB  yvlB  sF-TM(s) + Toast-rack  AciX8_0610  aF-TM + Toast-rack  HSISS4_01188  SAOUHSC_02100  ack  Deide_15380  BF28_3762  XAC1545	Enterococcus faecalis  Deinococcus radiodurans R1  Bacillus subtilis subsp natto BEST195  Bacillus subtilis subsp subtilis str 168  -rack  Granulicella mallensis MPSACTX8  ck  Bacillus subtilis str 168  Streptococcus salivarius  Staphylococcus aureus subsp aureus NCTC 8325  Deinococcus deserti VCD115  Bacillus cereus	bacteria > deinococcus-thermus > deinococci  bacteria > firmicutes  bacteria > acidobacteria  bacteria > firmicutes  bacteria > firmicutes  bacteria > firmicutes	> PspC-> SIG+TM(s)  SHOCT-like+Toast-rack-> SHOCT-like+Toast-rack-> SHOCT-like+Toast-rack-> SHOCT-like+Toast-rack-> PspC-> SIG+TM(s)  yvIA-SIG+TM(s)-> SHOCT-like+Toack-> PspC-> SIG+TM(s)  yvIA-SIG+TM(s)-> SHOCT-like+Toack-> PspC-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM-> SIG+TM(s)+Toast-rack-> AIPase-> TM(s)-SIG+TM-> SIG+TM(s)+Toast-rack-> AIPase-> TM(s)-SIG+TM-> SIG+TM(s)+Toast-rack-> AIPase-> TM(s)-SIG+TM-> SIG+TM(s)-TGast-rack-> AIPase-> TM(s)-SIG+TM-> SIG+TM(s)-SIG+TM-> SIG+TM-> SIG+
SHOCT-like AAF09613.1  BAI87136.2  CAB15517.1  SIG+Lial-Lia AEU34960.1  SIG+Lial-Lia CAB15300.1  SIG+TM(s)+ ALR80200.1  ABD31150.1  SIG+Toast-ra ACO46500.1  AJJ31452.1  AAM36414.1  SIG+Toast-ra	BZG32_08695  +Toast-rack  DR_0019  yvlB  yvlB  aF-TM(s)+Toast-rack  AciX8_0610  aF-TM+Toast-rack  HSISS4_01188  SAOUHSC_02100  ack  Deide_15380  BF28_3762  XAC1545	Enterococcus faecalis  Deinococcus radiodurans R1  Bacillus subtilis subsp natto BEST195  Bacillus subtilis subsp subtilis str 168  Tack  Granulicella mallensis MP5ACTX8  Ck  Bacillus subtilis str 168  Streptococcus salivarius  Staphylococcus aureus subsp aureus NCTC 8325  Deinococcus deserti VCD115  Bacillus cereus E33L  Xanthomonas citri pv citri str 306	bacteria > deinococcus-thermus > deinococci  bacteria > firmicutes  bacteria > acidobacteria  bacteria > firmicutes  bacteria > proteobacteria > gammaproteobacteria	> PspC-> SIG+TM(s)  > HOCT-like+Toast-rack-> SHOCT-like+Toast-rack-> SHOCT-like+Toast-rack-> SHOCT-like+Toast-rack-> SHOCT-like+Toast-rack-> PspC-> SIG+TM(s)  yvIA-SIG+TM(s)-> SHOCT-like+Toast-rack-> PspC-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM-> SIG+TM(s)-TOast-rack-> AIPase-> TM(s)-> SIG+TM(s)+TOast-rack-> AIPase-> TM(s)-SIG+TM-> SIG+TM(s)+TOast-rack-> SIG+TM(s)+TOast-rack-> SIG+TM(s)+TOast-rack-> SIG+TM(s)-TGast-rack-> SIG+TM(s)-TGast-rack-> SIG+TM(s)-TGast-rack-> SIG+TM(s)-TGast-rack-> SIG+TM-> SIG+
SHOCT-like AAF09613.1  BAI87136.2  CAB15517.1  SIG+Lial-Lia  AEU34960.1  SIG+Lial-Lia  CAB15300.1  SIG+TM(s)+  ALR80200.1  ABD31150.1  SIG+Toast-ra  ACO46500.1  AJI31452.1  AAM36414.1  SIG+Toast-ra  AFY83227.1	BZG32_08695  + Toast-rack  DR_0019  yvlB  yvlB  sF-TM(s) + Toast-rack  AciX8_0610  aF-TM + Toast-rack  HSISS4_01188  SAOUHSC_02100  ack  Deide_15380  BF28_3762  XAC1545	Enterococcus faecalis  Deinococcus radiodurans R1  Bacillus subtilis subsp natto BEST195  Bacillus subtilis str 168  Frack  Granulicella mallensis MPSACTX8  ck  Bacillus subtilis str 168  Streptococcus salivarius  Staphylococcus aureus Subsp aureus NCTC 8325  Deinococcus deserti VCD115  Bacillus cereus E33L  Xanthomonas citri pv citri str 306	bacteria > deinococcus-thermus > deinococci  bacteria > firmicutes  bacteria > acidobacteria  bacteria > firmicutes	> PspC-> SIG+TM(s)  > HOCT-like+Toast-rack-> SHOCT-like+Toast-rack-> SHOCT-like+Toast-rack-> SHOCT-like+Toast-rack-> SHOCT-like+Toast-rack-> PspC-> SIG+TM(s)  yvIA-SIG+TM(s)-> SHOCT-like+Toast-rack-> PspC-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM-> SIG+TM(s)-TOast-rack-> AIPase-> TM(s)-> SIG+TM(s)+TOast-rack-> AIPase-> TM(s)-SIG+TM-> SIG+TM(s)+TOast-rack-> SIG+TM(s)+TOast-rack-> SIG+TM(s)+TOast-rack-> SIG+TM(s)-TGast-rack-> SIG+TM(s)-TGast-rack-> SIG+TM(s)-TGast-rack-> SIG+TM(s)-TGast-rack-> SIG+TM-> SIG+
SHOCT-like AAF09613.1  BAI87136.2  CAB15517.1  SIG+Lial-Lia AEU34960.1  SIG+Lial-Lia CAB15300.1  SIG+TM(s)+ ALR80200.1  ABD31150.1  SIG+Toast-ra ACO46500.1  AJJ31452.1  AAM36414.1  SIG+Toast-ra	BZG32_08695  +Toast-rack  DR_0019  yvlB  yvlB  aF-TM(s)+Toast-rack  AciX8_0610  aF-TM+Toast-rack  HSISS4_01188  SAOUHSC_02100  ack  Deide_15380  BF28_3762  XAC1545	Enterococcus faecalis  Deinococcus radiodurans R1  Bacillus subtilis subsp natto BEST195  Bacillus subtilis subsp subtilis subsp subtilis str 168  Track  Granulicella mallensis MP5ACTX8  ck  Bacillus subtilis str 168  Streptococcus salivarius  Staphylococcus aureus subsp aureus NCTC 8325  Deinococcus deserti VCD115  Bacillus cereus E33L  Xanthomonas citri pv citri str 306  Oscillatoria acuminata PCC 6304	bacteria > deinococcus-thermus > deinococci  bacteria > firmicutes  bacteria > acidobacteria  bacteria > firmicutes  bacteria > proteobacteria > gammaproteobacteria	> PspC-> SIG+TM(s)  > HOCT-like+Toast-rack-> SHOCT-like+Toast-rack-> SHOCT-like+Toast-rack-> SHOCT-like+Torack-> SHOCT-like+Torack-> PspC-> SIG+TM(s)  yvIA-SIG+TM(s)-> SHOCT-like+Torack-> PspC-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM(s)-Yorack-> PspC-> SIG+TM(s)-Yorack-> PspC-> SIG+TM(s)-Yorack-> PspC-> SIG+TM(s)-Yorack-> PspC-> SIG+TM(s)-Yorack-> Yorack-> Yor
SHOCT-like AAF09613.1  BAI87136.2  CAB15517.1  SIG+Lial-Lia AEU34960.1  SIG+Lial-Lia CAB15300.1  SIG+TM(s)+  ALR80200.1  ABD31150.1  SIG+Toast-ra ACO46500.1  AJI31452.1  AAM36414.1  SIG+Toast-rack	BZG32_08695  +Toast-rack  DR_0019  yvlB  yvlB  sF-TM(s)+Toast-rack  AciX8_0610  aF-TM+Toast-rack  HSISS4_01188  SAOUHSC_02100  ack  Deide_15380  BF28_3762  XAC1545  ack+CASPASE  Oscil6304_3666	Enterococcus faecalis  Deinococcus radiodurans R1  Bacillus subtilis subsp natto BEST195  Bacillus subtilis subsp subtilis str 168  Tack  Granulicella mallensis MP5ACTX8  ck  Bacillus subtilis str 168  Streptococcus salivarius  Staphylococcus aureus subsp aureus NCTC 8325  Deinococcus deserti VCD115  Bacillus cereus E33L  Xanthomonas citri pv citri str 306  Oscillatoria acuminata PCC 6304  Amycolatopsis mediterranei RB  Streptomyces	bacteria> deinococcus-thermus> deinococci  bacteria> firmicutes  bacteria> acidobacteria  bacteria> firmicutes  bacteria> proteobacteria> gammaproteobacteria  bacteria> proteobacteria> gammaproteobacteria	> PspC-> SIG+TM(s)  > HOCT-like+ Toast-rack-> SHOCT-like+ Toast-rack-> SHOCT-like+ To rack-> SHOCT-like+ To rack-> PspC-> SIG+TM(s)  yvIA-SIG+TM(s)-> SHOCT-like+ To rack-> PspC-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM-> SIG+TM(s)-TG-> SIG+TM(s)-TG-> SIG+TM(s)-TG-> SIG+TM(s)-TG-> SIG+TM(s)-TG-> SIG+TM(s)-TG-> SIG+TM-> SIG+TM-
SHOCT-like AAF09613.1  BAI87136.2  CAB15517.1  SIG+Lial-Lia AEU34960.1  SIG+Lial-Lia CAB15300.1  SIG+TM(s)+ ALR80200.1  ABD31150.1  SIG+Toast-ra ACO46500.1  AJI31452.1  AAM36414.1  SIG+Toast-ra AFY83227.1  Toast-rack AGT82698.1	BZG32_08695  + Toast-rack  DR_0019  yvlB  yvlB  sF-TM(s) + Toast- AciX8_0610  aF-TM+Toast-rack  HSISS4_01188  SAOUHSC_02100  ack  Deide_15380  BF28_3762  XAC1545  ack+CASPASE  Oscil6304_3666  B737_2034	Enterococcus faecalis  Deinococcus radiodurans R1  Bacillus subtilis subsp natto BEST195  Bacillus subtilis str 168  Frack  Granulicella mallensis MP5ACTX8  Ck  Bacillus subtilis str 168  Streptococcus salivarius  Staphylococcus aureus subsp aureus NCTC 8325  Deinococcus deserti VCD115  Bacillus cereus E33L  Xanthomonas citri pv citri str 306  Oscillatoria acuminata PCC 6304  Amycolatopsis mediterranei RB	bacteria> deinococcus-thermus> deinococci  bacteria> firmicutes  bacteria> acidobacteria  bacteria> firmicutes  bacteria> proteobacteria> gammaproteobacteria  bacteria> proteobacteria> gammaproteobacteria  bacteria> cyanobacteria  bacteria> cyanobacteria	> PspC-> SIG+TM(s)  > HOCT-like+ Toast-rack-> SHOCT-like+ Toast-rack-> SHOCT-like+ To rack-> SHOCT-like+ To rack-> PspC-> SIG+TM(s)  yvIA-SIG+TM(s)-> SHOCT-like+ To rack-> PspC-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM-> SIG+TM(s)-TG-> SIG+TM(s)-TG-> SIG+TM(s)-TG-> SIG+TM(s)-TG-> SIG+TM(s)-TG-> SIG+TM(s)-TG-> SIG+TM-> SIG+TM-
SHOCT-like AAF09613.1  BAI87136.2  CAB15517.1  SIG+Lial-Lia AEU34960.1  SIG+Lial-Lia CAB15300.1  SIG+TM(s)+ ALR80200.1  ABD31150.1  SIG+Toast-ra ACO46500.1  AJI31452.1  AAM36414.1  SIG+Toast-ra AFY83227.1  Toast-rack AGT82698.1  CAC05954.1	BZG32_08695  + Toast-rack  DR_0019  yvlB  yvlB  sF-TM(s) + Toast- AciX8_0610  aF-TM+Toast-rack  HSISS4_01188  SAOUHSC_02100  ack  Deide_15380  BF28_3762  XAC1545  ack+CASPASE  Oscil6304_3666  B737_2034	Enterococcus faecalis  Deinococcus radiodurans R1  Bacillus subtilis subsp natto BEST195  Bacillus subtilis subsp subtilis str 168  Tack  Granulicella mallensis MP5ACTX8  ck  Bacillus subtilis str 168  Streptococcus salivarius  Staphylococcus aureus subsp aureus NCTC 8325  Deinococcus deserti VCD115  Bacillus cereus E33L  Xanthomonas citri pv citri str 306  Oscillatoria acuminata PCC 6304  Amycolatopsis mediterranei RB  Streptomyces	bacteria> deinococcus-thermus> deinococci  bacteria> firmicutes  bacteria> acidobacteria  bacteria> firmicutes  bacteria> proteobacteria> gammaproteobacteria  bacteria> proteobacteria> gammaproteobacteria  bacteria> cyanobacteria  bacteria> cyanobacteria	> PspC-> SIG+TM(s)  > PspC-> SIG+TM(s)  SHOCT-like+Toast-rack-> SHOCT-like-> SIR-inactive+ DUF20 HTH+SHOCT-like+> SIR  yvIA-SIG+TM(s)-> SHOCT-like+To rack-> PspC-> SIG+TM(s)  yvIA-SIG+TM(s)-> SHOCT-like+To rack-> PspC-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM(s)-> SIG+TM  SIGMA-HTH-> ZF+TM-> TM+L LiaF-TM-> SIG+LiaI-LiaF-TM(s)+To rac  LiaI-LiaF-TM-> PspA-> SIG+Toast-ra > SIG+TM+HAMP+HISK > REC+GerE-HTH  REC+GerE-HTH-> X-> ABC-ATPa > X(s)-> SIG+TM(s)+Toast-rack-> AIPase-> TM(s)  SIG+TM(s)+HISKIN-> REC+GerE-HTH  SIG+TM(s)+HISKIN-> SIG+To AIPase-> TM(s)-SIG+To SIG+TM(s)+HISKIN-> SIG+To SIG+TM(s)+HISKIN-> SIG+To SIG+TM(s)-HISKIN-> SIG+Toast-rack-> REC+GerE-HTH-> SIG+To SIG+TM(s)-HISKIN-> SIG+Toast-rack-> SIG+TM(s)-SIG+To-st-rack-> SIG+TOast-rack-> SIG+TOast-rack-
SHOCT-like AAF09613.1  BAI87136.2  CAB15517.1  SIG+Lial-Lia AEU34960.1  SIG+Lial-Lia CAB15300.1  SIG+TM(s)+ ALR80200.1  ABD31150.1  SIG+TOast-ra ACO46500.1  AJI31452.1  AAM36414.1  SIG+Toast-ra AFY83227.1  Toast-rack AGT82698.1  CAC05954.1  ZNR+PspC  ABC83427.1	BZG32_08695  + Toast-rack  DR_0019  yvlB  sF-TM(s) + Toast- AciX8_0610  aF-TM+Toast-rack  HSISS4_01188  SAOUHSC_02100  ack  Deide_15380  BF28_3762  XAC1545  ack+CASPASE  Oscil6304_3666  B737_2034  SCO5265	Enterococcus faecalis  Deinococcus radiodurans R1  Bacillus subtilis subsp natto BEST195  Bacillus subtilis str 168  -rack  Granulicella mallensis MP5ACTX8  ck  Bacillus subtilis str 168  -rack  Streptococcus salivarius  Staphylococcus aureus subsp aureus NCTC 8325  Deinococcus deserti VCD115  Bacillus cereus E33L  Xanthomonas citri pv citri str 306  Oscillatoria acuminata PCC 6304  Amycolatopsis mediterranei RB  Streptomyces coelicolor A32  Anaeromyxobacter dehalogenans 2CPC	bacteria > deinococcus-thermus > deinococci  bacteria > firmicutes  bacteria > acidobacteria  bacteria > firmicutes  bacteria > firmicutes	SHOCT-like+Coiled-coil+Toast-ra

Table S2: Representative PspA partner domain homologs Gene, Lineage info and Genomic Contexts grouped by Domain Architectures

Lineage