

	10	20	30	40	50	60	70	80	90	100																								
BtE264_BcpA-CT/1-423						V	S	Q	L	P	L	S	A	Q	A	A	A	R	N	A	L	N	E	I	V	A	T	A	G	G	A	A	A	G
BtTXDOH_BcpA-CT/1-298						V	S	Q	L	P	L	S	A	Q	A	A	A	R	N	A	L	N	E	I	V	A	T	A	G	G	A	A	A	G
Bp1106A-2_BcpA-CT/1-408						V	S	Q	L	P	L	D	A	Q	A	A	A	R	K	A	L	N	E	V	V	A	T	A	G	G	A	A	A	G
BpB7210-2_BcpA-CT/1-408						V	S	Q	L	P	L	D	A	Q	A	A	A	R	K	A	L	N	E	V	V	A	T	A	G	G	A	A	A	G
Bp1710b-1_BcpA-CT/1-408						V	S	Q	L	P	L	D	A	Q	A	A	A	R	K	A	L	N	E	V	V	A	T	A	G	G	A	A	A	G
Bp112-2_BcpA-CT/1-408						V	S	Q	L	P	L	D	A	Q	A	A	A	R	K	A	L	N	E	V	V	A	T	A	G	G	A	A	A	G
BpPasteur52237_BcpA-CT/1-408						V	S	Q	L	P	L	D	A	Q	A	A	A	R	K	A	L	N	E	V	V	A	T	A	G	G	A	A	A	G
Bp668_BcpA-CT/1-411						V	S	Q	L	P	L	D	A	Q	S	A	A	R	K	A	L	N	E	V	V	A	T	A	G	G	A	A	A	G
Bp1106A-1_BcpA-CT/1-406						V	S	Q	L	P	L	D	A	Q	T	A	A	R	K	A	L	N	E	I	V	A	T	A	G	G	A	A	A	G
BpBCC215-2_BcpA-CT/1-406						V	S	Q	L	P	L	D	A	Q	T	A	A	R	K	A	L	N	E	I	V	A	T	A	G	G	A	A	A	G
BpB7210-3_BcpA-CT/1-506						V	S	Q	L	P	L	D	A	Q	T	A	A	R	K	A	L	N	E	I	V	A	T	A	G	G	A	A	A	G
Bp7894-2_BcpA-CT/1-408						V	S	Q	L	P	L	D	A	Q	T	A	A	R	K	A	L	N	E	I	V	A	T	A	G	G	A	A	A	G
BpMSHR346_BcpA-CT/1-384						V	S	Q	L	P	L	D	A	Q	A	A	A	R	K	A	L	N	E	V	V	A	T	A	G	G	A	A	A	G
Bp305_BcpA-CT/1-384						V	S	Q	L	P	L	D	A	Q	A	A	A	R	K	A	L	N	E	V	V	A	T	A	G	G	A	A	A	G
Bp406e_BcpA-CT/1-384						V	S	Q	L	P	L	D	A	Q	A	A	A	R	K	A	L	N	E	V	V	A	T	A	G	G	A	A	A	G
Bp7894-1_BcpA-CT/1-384						V	S	Q	L	P	L	D	A	Q	A	A	A	R	K	A	L	N	E	V	V	A	T	A	G	G	A	A	A	G
Bp567-2_BcpA-CT/1-384						V	S	Q	L	P	L	D	A	Q	A	A	A	R	K	A	L	N	E	V	V	A	T	A	G	G	A	A	A	G
Bp7894-3_BcpA-CT/1-481						V	S	Q	L	P	L	D	A	Q	A	A	A	R	K	A	L	N	E	V	V	A	T	A	G	G	A	A	A	G
BpDM98_BcpA-CT/1-365						L	A	G	Q	A	E	K	I	S	K	S	V	G	D	M	T	G	S	S	L	V	G	N	I	V	A	A	N	V
BpS13_BcpA-CT/1-365						L	A	G	Q	A	E	K	I	S	K	S	V	G	D	M	T	G	S	S	L	V	G	N	I	A	A	N	V	A
Bp1710b-2_BcpA-CT/1-365						L	A	G	Q	A	E	K	I	S	K	S	V	G	D															

	110	120	130	140	150	160	170	180	190	200		
BtE264_BcpA-CT/1-423	AVAGGGS	SSGALAGAG	SAVNNEL	LYNRQLH	VVEE	-----	VKVV	EQLAK	EKAQAVC	RGDSS	SCVAKATTY	WTDMLER
BtTXDOH_BcpA-CT/1-298	A LAGGGS	SSGALAGAG	SA INNEL	LYNRQLH	EDS	-----	KAK	EQLAKK	LAAESG	-----	-----	-----
Bp1106A-2_BcpA-CT/1-408	A LAGGGS	SSGMLAGAG	AAANNE	LYNRQLH	ES E	-----	AQK	LQQLQKN	QSPQE	QYRLAAA	EC	SLVHCADNIPDS
BpB7210-2_BcpA-CT/1-408	A LAGGGS	SSGMLAGAG	AAANNE	LYNRQLH	ES E	-----	AQK	LQQLQKN	QSPQE	QYRLAAA	EC	SLVHCADNIPDS
Bp1710b-1_BcpA-CT/1-408	A LAGGGS	SSGTLAGAG	AAANNE	LYNRQLH	ES E	-----	AQK	LQQLQKN	QSPQE	QYRLAAA	EC	SLVHCADNIPDS
Bp112-2_BcpA-CT/1-408	A LAGGGS	SSGTLAGAG	AAANNE	LYNRQLH	ES E	-----	AQK	LQQLQKN	QSPQE	QYRLAAA	EC	SLVHCADNIPDS
BpPasteur52237_BcpA-CT/1-408	A LAGGGS	SSGTLAGAG	AAANNE	LYNRQLH	ES E	-----	AQK	LQQLQKN	QSPQE	QYRLAAA	EC	SLVHCADNIPDS
Bp668_BcpA-CT/1-411	A LAGGGS	SSGTLAGAG	AAANNE	LYNRQLH	ES E	-----	AQK	LQQLQKN	QSPQE	QYRLAAA	EC	SLVHCADNIPDS
Bp1106A-1_BcpA-CT/1-406	A LAGGGS	SSGALAGAG	SA SNNEL	LYNRQLH	QSE	-----	ADK	LKQLQK	GQSP	EQYRLAAA	ECA	LVHCADNIPDN
BpBCC215-2_BcpA-CT/1-406	A LAGGGS	SSGALAGAG	SA SNNEL	LYNRQLH	QSE	-----	ADK	LKQLQK	GQSP	EQYRLAAA	ECA	LVHCADNIPDN
BpB7210-3_BcpA-CT/1-506	A LAGGGS	SSGALAGAG	SA SNNEL	LYNRQLH	QSE	-----	ADK	LKQLQK	GQSP	EQYRLAAA	ECA	LVHCADNIPDN
Bp7894-2_BcpA-CT/1-408	A LAGGGS	SSGALAGAG	AA SNNEL	LYNRQLH	QSE	-----	ADK	LKQLQK	GQSP	EQYRLAAA	ECA	LVHCADNIPDN
BpMSHR346_BcpA-CT/1-384	A LAGGGS	SSGMLAGAG	AAANNE	LYNRQLH	PTE	-----	RQW	ISDNAT	RYAKQ	QGITV	EQA	ISDLTAQANRQVQN
Bp305_BcpA-CT/1-384	A LAGGGS	SSGMLAGAG	AAANNE	LYNRQLH	PTE	-----	RQW	ISDNAT	RYAKQ	QGITV	EQA	ISDLTAQANRQVQN
Bp406e_BcpA-CT/1-384	A LAGGGS	SSGMLAGAG	AAANNE	LYNRQLH	PTE	-----	RQW	ISDNAT	RYAKQ	QGITV	EQA	ISDLTAQANRQVQN
Bp7894-1_BcpA-CT/1-384	A LAGGGS	SSGMLAGAG	AAANNE	LYNRQLH	PTE	-----	RQW	ISDNAT	RYAKQ	QGITV	EQA	ISDLTAQANRQVQN
Bp567-2_BcpA-CT/1-384	A LAGGGS	SSGMLAGAG	AAANNE	LYNRQLH	PTE	-----	RQW	ISDNAT	RYAKQ	QGITV	EQA	ISDLTAQANRQVQN
Bp7894-3_BcpA-CT/1-481	A LAGGGS	SSGTLAGAG	AAANNE	LYNRQLH	PTE	-----	RQW	ISDNAA	RYAKQ	QGITI	EQA	ISDLTAQANRQVQN
BpDM98_BcpA-CT/1-365	ATVGGAL	VGG SAGA	AMASNV	ELYNAG	NDPQK	-----	TDD	RAT	IAGLQ	-----	LLS	RTAAMASDAKAGVWNGMVNV
BpS13_BcpA-CT/1-365	ATVGGAL	VGG SAGA	AMASNV	ELYNAG	NDPQK	-----	TDD	RAT	IAGLQ	-----	LLS	RTAAMASDAKAGVWNGMVNV
Bp1710b-2_BcpA-CT/1-365	ATVGGAL	VGG SAGA	AMASNV	ELYNAG	NDPQK	-----	TDD	RAT	IAGLQ	-----	LLS	RTAAMASDAKAGVWNGMVNV
Bp1655_BcpA-CT/1-365	ATVGGAL	VGG SAGA	AMASNV	ELYNAG	NDPQK	-----	TDD	RAT	IAGLQ	-----	LLS	RTAAMASDAKAGVWNGMVNV
BpB7210-1_BcpA-CT/1-365	ATVGGAL	VGG SAGA	AMASNV	ELYNAG	NDPQK	-----	TDD	RAT	IAGLQ	-----	LLS	RTAAMASDAKAGVWNGMVNV
Bp112-1_BcpA-CT/1-365	ATVGGAL	VGG SAGA	AMASNV	ELYNAG	NDPQK	-----	TDD	RAT	IAGLQ	-----	LLS	RTAAMASDAKAGVWNGMVNV
Bp1106A-3_BcpA-CT/1-365	ATVGGAL	VGG SAGA	AMASNV	ELYNAG	NDPQK	-----	TDD	RAT	IAGLQ	-----	LLS	RTAAMASDAKAGVWNGMVNV
Bp14_BcpA-CT/1-316	ATVGGAL	VGG SAGA	AMASNV	ELYNAG	KDLQK	-----	ADD	RAT	IAGLQ	-----	LLN	QAVAAGAKGLSTIAN
Bp567-1_BcpA-CT/1-307	ATVGGAL	VGG SAGT	AMASNV	QLYNAG	NDANN	-----	KDA	QAKAT	GLQ	-----	LLN	QAVAAGVAVNTVAG
BpK96243_BcpA-CT/1-327	ATVGGAL	VGG SAGA	AMASNV	QLYNAG	NDSSN	-----	QTS	NDV	FASLSK	-----	KVA	QAIAMTADGKAGVWNGMVNV
Bp91_BcpA-CT/1-327	ATVGGAL	VGG SAGA	AMASNV	QLYNAG	NDSSN	-----	QTS	NDV	FASLSK	-----	KVA	QAIAMTADGKAGVWNGMVNV
BpBCC215-1_BcpA-CT/1-346	ATVGGAL	VGG SAGA	AMASNV	ELYNAG	NDPQK	-----	TDD	RAT	IAGLQ	-----	LLN	QAVAAGAKGLSTIAN
Bp1026b_BcpA-CT/1-346	ATVGGAL	VGG SAGA	AMASNV	ELYNAG	NDPQK	-----	TDD	RAT	IAGLQ	-----	LLN	QAVAAGAKGLSTIAN
BpNCTC13177_BcpA-CT/1-320	ATVGGAL	VGG SAGA	AMASNV	ELYNAG	KDPQK	-----	TDD	RAT	IAGLQ	-----	LLN	QAVAAGAKGLSTIAN
BaAMMD_BcpA-CT/1-238	IGALGG	LVGGAAGA	ATASNV	NLYNQW	N	-----	-----	-----	-----	-----	-----	-----
BaIOP40-10_BcpA-CT/1-276	IGALGG	LVGGAAGA	ATASNV	NLYNQW	N	-----	-----	-----	-----	-----	-----	-----
BaMEX-5_BcpA-CT/1-412	GGVVGG	SAGAMTGA	GGALNAD	LYNRQLH	QA EIDA	IRAKAK	QLAASGV	ISYQDA	LERLSAQA	L RDVD	LQFAQAH	PG
BcH111_BcpA-CT/1-400	GGA SGA	ATTTT	SA TA	TAQNN	WLA TEQ	KVQAQK	ELMAC	TNLMCA	VQTTG	KWATV	SSVQDA	ATLAGFGKGLAQAGW
BdAUO158-1_BcpA-CT/1-423	A LAGGGS	SSGALAGAG	SA INNEL	LYNRQLH	VVEE	-----	VRI	VEQLAK	EKAQAVC	RGDSS	SCVAKATTI	YWTDMLER
BdAUO158-2_BcpA-CT/1-248	IGALGG	LVGGTAG	AA TA	SNVNL	YNQW	N	-----	-----	-----	-----	-----	-----
BgBSR3-1_BcpA-CT/1-406	A LAGGGS	SSGALAGAG	SA SNNEL	LYNRQLH	QSE	-----	ADK	LKQLQK	GQSP	EQYRLAAA	ECA	LVHCADNIPDN
BgBSR3-2(p)_BcpA-CT/1-298	AGAGGA	LIGGT	SGAFTA	TNAD	LYNR	-----	ST	-----	-----	-----	-----	-----
BgBSR3-3_BcpA-CT/1-241	VGALGW	LVGGTAG	AA TA	SNVNL	YNQW	N	-----	-----	-----	-----	-----	-----
BglBGR1_BcpA-CT/1-416	AVAGGGS	SSGALAGAG	SA INNEL	LYNRQLH	VVEE	-----	VKVV	EKLAK	EKAQAVC	HGDAG	CVASATTY	WTDLLER
BmCGD2M-1_BcpA-CT/1-167	TLGGGG	IIVFGL	GDMA	EGAD	GLYN	RYNGTSS	-----	PGV	NPAR	YG	-----	FNEALPAG
BmCGD2M-2_BcpA-CT/1-374	AVGGV	SATTA	TTAAT	TEVEN	NFLT	QPQQTAR	-----	ALAK	VSCTAA	DPSAC	QKQVQ	QRYAKLWEDNEAKAKS
BphSTM815-1_BcpA-CT/1-400	GNALGGA	AGAGIA	SIAAGK	LNEL	SGA	IAGSN	-----	PTGN	AGMNQA	LGN	IVANA	IAIGA
BphSTM815-2(p)_BcpA-CT/1-400	AGTAGA	LVGGN	AGFTA	SNAD	MYNR	QLNPNE	-----	KQK	LAQLQ	AGET	PEEK	QRLADAACA
BrHKI454_BcpA-CT/1-400	LGAAQ	SGAGSLV	SALL	LANK	LDEMS	RQIVDQK	P	-----	TGNAD	LDK	TLGN	IVANVMSSVAGGVGGTQGAQAA
BuBU_BcpA-CT/1-276	VGA LGW	LVGGTAG	AA TA	SNVNL	YNQW	N	-----	-----	-----	-----	-----	-----
BvG4_BcpA-CT/1-357	GGA IGA	AGALSG	ANGAL	SAD	LYNR	QLHPNE	-----	KQK	LAQLQK	GQPK	DEQD	RLA DAAC
BxLB400_BcpA-CT/1-400	SGV SAG	ISVTD	AHQTD	IASL	NRD	TSNTN	-----	GT	VAKLP	DVNN	LLDR	QGDMM
RsCFBP2957(p)_BcpA-CT/1-400	KPTFT	NTPL	GEQK	LFTAT	DQQL	LRPEMFADT	-----	ADP	KFYQ	RFVQ	SGIS	RS
RsCMR15(p)_BcpA-CT/1-400	GATSG	SGS	AAAA	AGAT	SQMA	EQFN	REHQED	KNP	AKDEK	KVLA	QLQEG	KSP
RsGMI1000_BcpA-CT/1-445	KVAVHA	LIGGL	ISRAM	GGEF	VAGAG	TGAALAM	VF	FGK	QLLA	IDGL	SEGD	RKALV
RsPo82-1_BcpA-CT/1-241	STGVNA	AT	TSAGQ	IEV	ENNQ	VWAPR	SP	-----	-----	-----	-----	-----
RsPo82-2(p)_BcpA-CT/1-400	ASSQNC	GAGAL	GAAA	SSLL	TNLF	TDDPN	ETN	-----	AGK	DAKRN	IVTS	LVAGVAA
RsPSI07_BcpA-CT/1-400	AGGLG	FAVGG	SGAA	TAAN	ADR	FRN	QLNENE	-----	KKA	IAEK	AKGDK	AEER
RsR24_BcpA-CT/1-400	ASSQNC	GAGAL	GAAA	SSLL	TNLF	TDDPN	EAN	-----	AGK	DAKRN	IVTS	LVAGVAA
CmCH34(p)_BcpA-CT/1-165	VLGGG	GMVA	FGLSD	AGEG	IGGL	YNRFNG	INS	-----	PGT	NIL	RYG	-----

	210	220	230	240	250	260	270	280	290	300		
BtE264_BcpA-CT/1-423			AAKGMVDDTANKENMAYLQTL	IQTANNPTSE	GAMGGLSSY		LTNLQTAQDMLSQYMGKPI	LV	RGSP	IVSDGSAQTYFSATPEQR		
BtTXDOH_BcpA-CT/1-298			GLYTLQQIQEQMAQMD	LVMGDGGVLP	GDV	RVASG		DKPQDGT	EWTRYGVNKAG		QTVWTSLSGPG	
Bp1106A-2_BcpA-CT/1-408			DPNKAVLQKMQNDG		AQFTYE	EQGV	LKKAGAFDG		YGKLDLS	SDAYDRNQVSNRLVG		AVQGVGSTAAGIG
BpB7210-2_BcpA-CT/1-408			DPNKAVLQKMQNDG		AQFTYE	EQGV	LKKAGAFDG		YGKLDLS	SDAYDRNQVSNRLVG		AVQGVGSTAAGIG
Bp1710b-1_BcpA-CT/1-408			DPNKAVLQKMQNDG		AQFTYE	EQGV	LKKAGAFDG		YGKLDLS	SDAYDRNQVSNRLVG		AVQGVGSTAAGIG
Bp112-2_BcpA-CT/1-408			DPNKAVLQKMQNDG		AQFTYE	EQGV	LKKAGAFDG		YGKLDLS	SDAYDRNQVSNRLVG		AVQGVGSTAAGIG
BpPasteur52237_BcpA-CT/1-408			DPNKAVLQKMQNDG		AQFTYE	EQGV	LKKAGAFDG		YGKLDLS	SDAYDRNQVSNRLVG		AVQGVGSTAAGIG
Bp668_BcpA-CT/1-411			DPNKAVLQKMQNDG		AQFTYE	EQGV	LKKAGAFDG		YGKLDLS	SDAYDRNQVSNRLVG		AVQGVGSTAAGIG
Bp1106A-1_BcpA-CT/1-406			DPNKAAALQKIQNDG		AQYTYE	QNV	LKKAGAFDG		YGDLDRL	SDTYDRNQVSNRLVG		AVQGVGSVAVAAG
BpBCC215-2_BcpA-CT/1-406			DPNKAAALQKIQNDG		AQYTYE	QNV	LKKAGAFDG		YGDLDRL	SDTYDRNQVSNRLVG		AVQGVGSVAVAAG
BpB7210-3_BcpA-CT/1-506			DPNKAAALQKIQNDG		AQYTYE	QNV	LKKAGAFDG		YGDLDRL	SDTYDRNQVSNRLVG		AVQGVGSVAVAAG
Bp7894-2_BcpA-CT/1-408			DPNKAAALQKIQNDG		AQYTYE	QNV	LKKAGAFDG		YGDLDRL	SDTYDRNQVSNRLVG		AVQGVGSVAVAAG
BpMSHR346_BcpA-CT/1-384			GSPGAWDQTAS		AFLNQA	HGLLPADGNSGPGYMF		YATPDQK	ANVAMYAKYYPNGVG		MNVPSAQAVASSANRDK	
Bp305_BcpA-CT/1-384			GSPGAWDQTAS		AFLNQA	HGLLPADGNSGPGYMF		YATPDQK	ANVAMYAKYYPNGVG		MNVPSAQAVASSANRDK	
Bp406e_BcpA-CT/1-384			GSPGAWDQTAS		AFLNQA	HGLLPADGNSGPGYMF		YATPDQK	ANVAMYAKYYPNGVG		MNVPSAQAVASSANRDK	
Bp7894-1_BcpA-CT/1-384			GSPGAWDQTAS		AFLNQA	HGLLPADGNSGPGYMF		YATPDQK	ANVAMYAKYYPNGVG		MNVPSAQAVASSANRDK	
Bp567-2_BcpA-CT/1-384			GSPGAWDQTAS		AFLNQA	HGLLPADGNSGPGYMF		YATPDQK	ANVAMYAKYYPNGVG		MNVPSAQAVASSANRDK	
Bp7894-3_BcpA-CT/1-481			GSPGAWNQNAS		AFLDQA	HGLLPADGSSGPGYMF		YATPDQK	ANVAMYANYYPNGVG		MNVPSAQAVANSANRDK	
BpDM98_BcpA-CT/1-365			AGVIVNIPNGGPFASPGD	PGYVSLDGLKK	PKYSGTSIGPD		TEFLTPI	LATLGLGGKAAVGT			AGITSADVAT	
BpS13_BcpA-CT/1-365			AGVIVNIPNGGPFASPGD	PGYVSLDGLKK	PKYSGTSIGPD		TEFLTPI	LATLGLGGKAAVGT			AGITSADVAT	
Bp1710b-2_BcpA-CT/1-365			AGVIVNIPNGGPFASPGD	PGYVSLDGLKK	PKYSGTSIGPD		TEFLTPI	LATLGLGGKAAVGT			AGITSADVAT	
Bp1655_BcpA-CT/1-365			AGVIVNIPNGGPFASPGD	PGYVSLDGLKK	PKYSGTSIGPD		TEFLTPI	LATLGLGGKAAVGT			AGITSADVAT	
BpB7210-1_BcpA-CT/1-365			AGVIVNIPNGGPFASPGD	PGYVSLDGLKK	PKYSGTSIGPD		TEFLTPI	LATLGLGGKAAVGT			AGITSADVAT	
Bp112-1_BcpA-CT/1-365			AGVIVNIPNGGPFASPGD	PGYVSLDGLKK	PKYSGTSIGPD		TEFLTPI	LATLGLGGKAAVGT			AGITSADVAT	
Bp1106A-3_BcpA-CT/1-365			AGVIVNIPNGGPFASPGD	PGYVSLDGLKK	PKYSGTSIGPD		TEFLTPI	LATLGLGGKAAVGT			AGITSADVAT	
Bp14_BcpA-CT/1-316			ARNAIGNTIGDAVDSAA	SQFGTLMKRDAQDKIS			QSPAQLISQGVANGVAVVG				MGGGEPPATS	
Bp567-1_BcpA-CT/1-307			VRNAIGNAIGDAVDSAA	SQFGTLMKRDAQDKMS			QSPAQLISQSVANGVNTVLG				SKGGEPIIAG	
BpK96243_BcpA-CT/1-327			AGVIVNLPNGGPFASPGD	PGYVSLDGLKK	PKYSGTSIGPD		AEFWTPV	LATLGLGGKAAAGTG			ATTTSDAAAT	
Bp91_BcpA-CT/1-327			AGVIVNLPNGGPFASPGD	PGYVSLDGLKK	PKYSGTSIGPD		AEFWTPV	LATLGLGGKAAAGTG			ATTTSDAAAT	
BpBCC215-1_BcpA-CT/1-346			ARNAIGNAISGALDSAAD	QFGTLMKRDAEGKMS			QSPAELVSQGVANGINTVLG				SKGGEPLLAG	
Bp1026b_BcpA-CT/1-346			ARNAIGNAISGALDSAAD	QFGTLMKRDAEGKMS			QSPAELVSQGVANGINTVLG				SKGGEPLLAG	
BpNCTC13177_BcpA-CT/1-320			ARNAIGNAISGALDSAAD	QFGTLMKRDAQDKIS			QSPDKLIYQGINNGVGGVLC				SKGGEPLLAG	
BaAMMD_BcpA-CT/1-238			HTD	TDLTLEASGGQTVRKK		TT		ALDLVLQGIANGLNAVIG			AGGGKPPAAS	
BaIOP40-10_BcpA-CT/1-276			HTD	TDLTLEASGGQTVRKK		TT		ALDLVLQGIANGLNAVIG			AGGGKPPAAS	
BaMEX-5_BcpA-CT/1-412			ADVQAQAWLDQVKAAN	PAGYNHMPFFQATSTEYK	DPTLYANTKQTNPDV	YYAANLPAIPGTLSP					RNPSLSAIAT	
BcH111_BcpA-CT/1-400			SKEMRDQLGQAVVDN	LNTKIGEIQTALRVGGTDQA	LQLGQNI	IGELTWQVGS	SVVAGVSGAVKAGIG				LAKIGINVGRDV	
BdAUO158-1_BcpA-CT/1-423			AAKGMVDDTANKENMAYLQTL	IQTANNPTSE	GAMGGLSSY		LANLQTAQDMLSQYMGKPI	LV	RGSP	IVSDGSAQTYFSATPTQR		
BdAUO158-2_BcpA-CT/1-248				HTD	TDLTLEASGGQTVRKK		TT		ALDLVLQGIANGLNAVIG		FGGSKPPAAS	
BgBSR3-1_BcpA-CT/1-406			DPNKAAALQKIQNDG		AQYTYE	QNV	LKKAGAFDG		YGDLDRL	SDTYDRNQVSNRLVG		AVQGVGSVAVAAG
BgBSR3-2(p)_BcpA-CT/1-298			AKDTYGDPIG	TVTRWGGQFVGMAQSDTKATMS			QPA	STQIARGTANGLGA	IAVG		AMGGEPIIS	
BgBSR3-3_BcpA-CT/1-242			HTD	TDLTLEASGGQTVRKK		TT		ALGLILQGIANGLNAVIG			TGGGKPPAAS	
BglBGR1_BcpA-CT/1-416			AAKGMVDDTANKENMAYLQTL	IQTADNPTSE	GAMGGLSSY		LTNLQTAQDMLSQYMGKPI	LV	RGSP	IVSDGSAQTYFSATPEQR		
BmCGD2M-1_BcpA-CT/1-167			WGNVVYDGLNLVAA	IAALKAPVPLKMGNADGLN			RPGSMFDVTVPRINNNTLIP				FINQAAPYGT	
BmCGD2M-2_BcpA-CT/1-374			CASADACKAALTDLRQQQVEYSA	RENQLQQLRDTGGLSAA	ETDELLNLKAA	ADTNLMSLRTSA	LQSYTR				YAGMDALKSL	
BphSTM815-1_BcpA-CT/1-400			YNADRYNRQLHAPEKTKAQQIASQATA	QAGLKNPDGS			PITDAQIENAMRAANNSRYG				EIVATGVVPLNAN	
BphSTM815-2(p)_BcpA-CT/1-400			DPAKAAAQDSQNRG	AGYLTEQKELRATGLFQYSLADA	LTPVNRAGDWL	LQTRSAANGAAN					LGNQVGNKAKADA	
BrHKI454_BcpA-CT/1-400			VD	RFRNLHQGEYDLAKRHAKLVAQQLKISE	QEAEGRIVAEILRNSDQQTAEATGSKHDEYIRSI	IVG				CQNLNCYGDKKDLQYA		
BuBU_BcpA-CT/1-276				HTD	TDLTLEASGGQTVRKK		TT		ALGLVLQGIANGLNAVIG		LGGGKPPAAS	
BvG4_BcpA-CT/1-357			DPAYAAA	LASQQRG	AGYISEQQDLKATGLFVYSL	SDELNDPLNAMGDWALQQA	SAGR	IGATN			LGNALLKKIAQN	
BxLB400_BcpA-CT/1-400			DFAQSKYK	EAEANGDQAGMDAWK	EGGTARAEMQAAGAA	LVTGLAGGNA	IGGAAGAGIAS	IAAGKLNELSG			TIAGSNPTGNAS	
RsCFBP2957(p)_BcpA-CT/1-400			AAEFAKIAKEHPGVVLD	AVWGAVKGLPGAIVDGF	FRESGQ		AIGEGAVALNKDLTDKLNALY				NDVSGYQQAALLAI	
RsCMR15(p)_BcpA-CT/1-400			DPDKAALKASEQRG	AQNLVQQQLKATGLFA	YPWSDFGSDMRS	RELDWIKHLLIKANQGLDDAS					ASVSRGMQNSGN	
RsGMI1000_BcpA-CT/1-445			VAAAAGTAQIAVQNNFLAHEQ	REQRKKDLAACKSARECD	AVTAAWDAISKKQQA	DAQACISSDSCKV	LVNLVWPA	IESALNEAKAECN				
RsPo82-1_BcpA-CT/1-241				PSPGQP	KPFEP	IPGFKGDT		AKKG	DGVISDPMQV	DPTAN		VHANPVSEQT
RsPo82-2(p)_BcpA-CT/1-400			ADNNWL	TPKQRI	IERDQKLANC	TTDACRKLVKDQYAKLWQAN	HDRAEKCHSANAC	LAVADELRGVMR			ESGQRMGELO	
RsPSI07_BcpA-CT/1-400			GLFDYTPMQRVGD	FVASQTDQAKRAAQGFVE	EVKNLPRS	FVNKMA	SDAKQKMS		ESPSDL	IAQGVANGFSAVAG		MGRGEPPAAS
RsR24_BcpA-CT/1-400			ADNNWL	TPKQRI	IERDQKLANC	TTDACRKLVKDQYAKLWQSN	RDRATNCSSAKSLD	VVDELRTAQR			EAGERTEALL	
CmCH34(p)_BcpA-CT/1-165			WGTTAYDGLNLFF	SVGAMRAQVPLKMGVADGLG			RPSSMFDVTVPRFNNPTLV				VINKALPNGT	

320 330 340 350 360 370 380 390 400 410

BtE264_BcpA-CT/1-423 SNQSLNA ILGSLPGSIVPGASQRDQSRVDSFATQNGSVKPDYTIETTV IGG ILTNK IASTAA RVGES IDVWLAGPVNPTGKGFISTGKVTMESM-----PVKLL

BtTXDOH_BcpA-CT/1-298 DPDLQAYIVKGAQGSGFSYQPTTTGKNPGLVRAPDFVNFQLDYFVGSVWGTFTRDGNAFFGGGLNMLPNPVGAGVNI SAGYLNTGTVRPGQTNNFAGGYAGG

Bp1106A-2_BcpA-CT/1-408 AATGGCYTLVAC IAGAAVAGVSFDYAKAGFTQLVNGNPTPTYGELALQSLGMSPSGAAALTYAGLGLAAVGSVAANNAAAAQAAAKGVPQSVESI QAGIKYDLM

BpB7210-2_BcpA-CT/1-408 AATGGCYTLVAC IAGAAVAGVSFDYAKAGFTQLVNGNPTPTYGELALQSLGMSPSGAAALTYAGLGLAAVGSVAANNAAAAQAAAKGVPQSVESI QAGIKYDLM

Bp1710b-1_BcpA-CT/1-408 AATGGCYTLVAC IAGAAVAGVSFDYAKAGFTQLVNGNPTPTYGELALQSLGMSPSGAAALTYAGLGLAAVGSVAANNAAAAQAAAKGVPQSVESI QAGIKYDLM

Bp112-2_BcpA-CT/1-408 AATGGCYTLVAC IAGAAVAGVSFDYAKAGFTQLVNGNPTPTYGELALQSLGMSPSGAAALTYAGLGLAAVGSVAANNAAAAQAAAKGVPQSVESI QAGIKYDLM

BpPasteur52237_BcpA-CT/1-408 AATGGCYTLVAC IAGAAVAGVSFDYAKAGFTQLVNGNPTPTYGELALQSLGMSPSGAAALTYAGLGLAAVGSVAANNAAAAQAAAKGVPQSVESI QAGIKYDLM

Bp668_BcpA-CT/1-411 AATGGCYTLVAC IAGAAVAGVSFDYAKAGFTQLVNGNPTPTYGELALQSLGMSPSGAAALTYAGLGLAAVGSVAANNAAAAQAAAKGVPQSVESI QAGIKYDLM

Bp1106A-1_BcpA-CT/1-406 AVTGGCA SVAGCALGAA IAVGAVDYAKSGFTQMMSGNLTPTYGEQALQSLGMSPTGAAALVYGALNLGGAAAQVVV TGRAV DAAAAANAWAR GTYNGSSSAQYS

BpBCC215-2_BcpA-CT/1-406 AVTGGCA SVAGCALGAA IAVGAVDYAKSGFTQMMSGNLTPTYGEQALQSLGMSPTGAAALVYGALNLGGAAAQVVV TGRAV DAAAAANAWAR GTYNGSSSAQYS

BpB7210-3_BcpA-CT/1-506 AVTGGCA SVAGCALGAA IAVGAVDYAKSGFTQMMSGNLTPTYGEQALQSLGMSPTGAAALVYGALNLGGAAAQVVV TGRAV DAAAAANAWAR GTYNGSSSAQYS

Bp7894-2_BcpA-CT/1-408 AVTGGCA SVAGCALGAA IAVGAVDYAKSGFTQMMSGNLTPTYGEQALQSLGMSPTGAAALVYGALNLGGAAAQVVV TGRAV DAAAAANAWAR GTYNGSSSAQYS

BpMSHR346_BcpA-CT/1-384 AQQEKYSTLTSSAAAVAAALV TG- GVALFPDVATA IGSA IKACASNPLVLCG ----NQAA IAVGD LAAGGAMPAGTGA AVAGAGAAAAGK LIGS-----TENL

Bp305_BcpA-CT/1-384 AQQEKYSTLTSSAAAVAAALV TG- GVALFPDVATA IGSA IKACASNPLVLCG ----NQAA IAVGD LAAGGAMPAGTGA AVAGAGAAAAGK LIGS-----TENL

Bp406e_BcpA-CT/1-384 AQQEKYSTLTSSAAAVAAALV TG- GVALFPDVATA IGSA IKACASNPLVLCG ----NQAA IAVGD LAAGGAMPAGTGA AVAGAGAAAAGK LIGS-----TENL

Bp7894-1_BcpA-CT/1-384 AQQEKYSTLTSSAAAVAAALV TG- GVALFPDVATA IGSA IKACASNPLVLCG ----NQAA IAVGD LAAGGAMPAGTGA AVAGAGAAAAGK LIGS-----TENL

Bp567-2_BcpA-CT/1-384 AQQEKYSTLTSSAAAVAAALV TG- GVALFPDVATA IGSA IKACASNPLVLCG ----NQAA IAVGD LAAGGAMPAGTGA AVAGAGAAAAGK LIGS-----TENL

Bp7894-3_BcpA-CT/1-481 AQQEKYSTLTSSAAAVAAALV TG- GVALFPDAAATA IGAA IKACAANPLVLCG ----NQAA IAVGD LAAGGAMPAGTGA AVAGAGAAAAGK LIGS-----TENL

BpDM98_BcpA-CT/1-365 VNGALKNASGDL SAAANSARNQPYQGASASQSPGTQGASSGSN IASNGSSSPTTIVASN PVDLNAFRLNVVDPAVGKFRPGEAGAAAEL ENYLGGTLQR

Bp513_BcpA-CT/1-365 VNGALKNASGDL SAAANSARNQPYQGASASQSPGTQGASSGSN IASNGSSSPTTIVASN PVDLNAFRLNVVDPAVGKFRPGEAGAAAEL ENYLGGTLQR

Bp1710b-2_BcpA-CT/1-365 VNGALKNASGDL SAAANSARNQPYQGASASQSPGTQGASSGSN IASNGSSSPTTIVASN PVDLNAFRLNVVDPAVGKFRPGEAGAAAEL ENYLGGTLQR

Bp1655_BcpA-CT/1-365 VNGALKNASGDL SAAANSARNQPYQGASASQSPGTQGASSGSN IASNGSSSPTTIVASN PVDLNAFRLNVVDPAVGKFRPGEAGAAAEL ENYLGGTLQR

BpB7210-1_BcpA-CT/1-365 VNGALKNASGDL SAAANSARNQPYQGASASQSPGTQGASSGSN IASNGSSSPTTIVASN PVDLNAFRLNVVDPAVGKFRPGEAGAAAEL ENYLGGTLQR

Bp112-1_BcpA-CT/1-365 VNGALKNASGDL SAAANSARNQPYQGASASQSPGTQGASSGSN IASNGSSSPTTIVASN PVDLNAFRLNVVDPAVGKFRPGEAGAAAEL ENYLGGTLQR

Bp1106A-3_BcpA-CT/1-365 VNGALKNASGDL SAAANSARNQPYQGASASQSPGTQGASSGSN IASNGSSSPTTIVASN PVDLNAFRLNVVDPAVGKFRPGEAGAAAEL ENYLGGTLQR

Bp14_BcpA-CT/1-316 GGTVLVNAAGGQVVGAAAGS- KT- --PDNVLLADGD- ----GNSRSPSRQSELDVQSDLGSGHNPQVS YKNGQEVVPYSTPGSVRPDI STVDRTISY

Bp567-1_BcpA-CT/1-307 PGTVLVNSSMEQAANASLTG- SRG- APSNA ILSN- N- ----GGDDANANANGATGNGP- ----YSNLTDSSSVGPGKNFTATQKNNI I EQNMANNNG

BpK96243_BcpA-CT/1-327 VNGALKTASGDL SAAGNAARTQPYNGASASPSPGTATAG- ----SSGANAQLPTANGGVAAGTSSATNVGKVV IDGKIGGQLEARGWTQQEVQAVVNE

Bp91_BcpA-CT/1-327 VNGALKTASGDL SAAGNAARTQPYNGASASPSPGTATAG- ----SSGANAQLPTANGGVAAGTSSATNVGKVV IDGKIGGQLEARGWTQQEVQAVVNE

BpBCC215-1_BcpA-CT/1-346 PSAAVAVDSL TGQAANAALGA- TDRTPPSNA ILSNSN- ----SDNNSTQGSQSGTVTKTPNPEATGSLSGKRTQI PPLSDEVTTTSL IRENQSAVTL

Bp1026b_BcpA-CT/1-346 PSAAVAVDSL TGQAANAALGA- TDRTPPSNA ILSNSN- ----SDNNSTQGSQSGTVTKTPNPEATGSLSGKPTQI PPLSDEVTTTSL IRENQSAVTL

BpNCTC13177_BcpA-CT/1-320 PSAAVAVDSL TGQAANAALGA- TDRTPPSNA ILSNSN- ----SDNNSTQGSQSGTVTKTPNPEATGSLSGKPTQI PPLSDEVTTTSL IRENQSAVTL

BaAMMD_BcpA-CT/1-238 PGVVLVGEAGAGVQV I PG- VAGYGLDTATLAKSG- ----HSPAGANDSNTPLMGA- ----DGAQFPSKTIWKGDG- ----KERIDVE

BaIOP40-10_BcpA-CT/1-276 PGVVLVDSAGQVATS I TGA KAPLYAPGNATFNNDGAKGQVTV EHGATPDSNETSAG RGLANAG- ----YDVSHQPTASQQGVDGVR TADLSVKGVGQVDVY

BaMEX-5_BcpA-CT/1-412 GNAKAAAGNTV I DAYNKALDVAG I DIPNAKLPIY I PMTAD EQAAAAATAVMA LPWGA EGLLGSGNAADVVQSAGANGKNYVGGGAQLADDTKFLLTERQLPVSR

BaH111_BcpA-CT/1-400 LDSMELASRTSAVTDGALGALDAGGAAE I PKK I PYQNGTVLV LQGEAPVCGACAAM I SDRTGNSVLSLVIGSFNENG I RPTGVNASLNV I SKAGVEN

BdAUO158-1_BcpA-CT/1-423 SDRYLNSGLSLPDS I VPGASQRDQNRRLDSFATQNGSVKPDYTIETTV IGG I LANK I TSTVARVGES IDVWLAGSVNPTGKGFISTGKVTMESM-----PVKLL

BdAUO158-2_BcpA-CT/1-248 PGLVLAGEAGAAGQVAK PG- VAGYAPDNATLADSG- ----RDNRLPIPEQVTADNG- ----LEVKSNPKHTPGLDGNRSNAGTE- ----PRNSLDLFL

BgBSR3-1_BcpA-CT/1-406 AVTGGCA SVAGCALGAA IAVGAVDYAKSGFTQMMSGNLTPTYGEQALQSLGMSPTGAAALVYGALNLGGAAAQVVV TGRAV DAAAAANAWAR GTYNGSSSAQYS

BgBSR3-2(p)_BcpA-CT/1-298 PGTAMVNSSAEQASNAALTG- SLG- APPNAMLN- N- ----GGDDANASADGASGNGP- ----YSNLTDSSSVGPGKNFTATQKNNI I EQNMANNNG

BgBSR3-3_BcpA-CT/1-242 PGVVLVGEAGGLTAKSS- -VSSYIGNAL I LNNNG- ----DSNSEGASNASSTTG- ----KSRNKPAPPLPEAGGAPHTI I ERPGPDGOYTTY

BglBGR1_BcpA-CT/1-416 SDQYLNSV LGS L PGSIAPGASQRDQDRLSKFATQNGSVKPDYTIETTV IGG I LTNK IASAVARAGES IDVWLAGSVNPTGKGFISTGKVTMESM-----PLKLL

BmCGD2M-1_BcpA-CT/1-167 TQGI LLFGVGSKGATV I NDVH RAGEQK

BmCGD2M-2_BcpA-CT/1-374 QGSGLIAELG I GAAPG I GAGAAGALTSVAGALRT I KVVSGGKSNWNA ELNNPKPNTTVYNVDDSKVYQTDLSLARVTRVDGDL SLLTKDRNGYQQVKAGREGDS

BphSTM815-1_BcpA-CT/1-400 TPASAVSDTTGMLTKTDGAGNNYLVDQPSMLSTPSKAVQDL I VQNTGGANSPYSWNPA SAQTVSTPTIDPYGPFSPSWNTGDY I SAGLGAGGRGLAPDYMTVNA

BphSTM815-2(p)_BcpA-CT/1-400 QAK I SEAPASLMAQGAVNGV TAVTGMRGGEPPAQSP- --G- ----AVLVDSAGQALTGGTGSAAYQPDNATLATDPTS RPSGFRKQTVVDAWDAADGSTDG

BrHK1454_BcpA-CT/1-400 DHNNYSQY I KPNQEA YDAGQS QLG RGTYNELVTSN INKDPVGA TVAGAGMMGLGAAGGSLAPAGMMGAGAL LGLGANGGVQLMGDQPFDWTSFALSGVTS

BuBU_BcpA-CT/1-276 PGQVLVDSSAGQVATS I TGASVPL YAPGNATLNNDSVKGKVSVEPGA TPDSNETSAG RGLANAG- ----YDVSHQPTASQQGVDGVR TADLSVKGVGQIDVY

BvX4_BcpA-CT/1-357 GPQGPYNNPDDLNGPSGGGNGTPPTATAVTV I PCPAGPAGACGMVAPTVVTPGAPTMSAGGSDSSGGGSASSSGQPTANNVGFDTSNLESKLSGYYLLDPAHP

BvLB400_Bcp

BtE264_BcpA-CT/1-423 NTA EQGVLSQLDQLPSKDLQGQAREYVANNYFV RNFGFTPLDGKCGANC FDGVYVKGNTVYVNEVKPLNESGSISLNP PPSAATGLPGQQT DNWVAYSVQRLKDT
 BtTXDOH_BcpA-CT/1-298 GSA LYGGLGGGVMSV SPG-----NGTATV IGFGAGVNVGKTNNPA SVGWGFVSVDQGKTGVRW-----
 Bp1106A-2_BcpA-CT/1-408 QQVADLRASLTGTPRTMGNMGVAQISIPGVQSEMAASSQIPNPTAEQRALGFVGMGPDIFSSSTVVP LPNGYPLLNRN--VDSEAKILNNVAAQLGDNTSVSGVI
 BpB7210-2_BcpA-CT/1-408 QQVADLRASLTGTPRTMGNMGVAQISIPGVQSEMAASSQIPNPTAEQRALGFVGMGPDIFSSSTVVP LPNGYPLLNRN--VDSEAKILNNVAAQLGDNTSVSGVI
 Bp1710b-1_BcpA-CT/1-408 QQVADLRASLTGTPRTMGNMGVAQISIPGVQSEMAASSQIPNPTAEQRALGFVGMGPDIFSSSTVVP LPNGYPLLNRN--VDSEAKILNNVAAQLGDNTSVSGVI
 Bp112-2_BcpA-CT/1-408 QQVADLRASLTGTPRTMGNMGVAQISIPGVQSEMAASSQIPNPTAEQRALGFVGMGPDIFSSSTVVP LPNGYPLLNRN--VDSEAKILNNVAAQLGDNTSVSGVI
 BpPasteur52237_BcpA-CT/1-408 QQVADLRASLTGTPRTMGNMGVAQISIPGVQSEMAASSQIPNPTAEQRALGFVGMGPDIFSSSTVVP LPNGYPLLNRN--VDSEAKILNNVAAQLGDNTSVSGVI
 Bp668_BcpA-CT/1-411 QQVADLRASLTGTPRTMGNMGVAQISIPGVQSKMAASSQIPDPTAAQRA LGFVGEVNETFPSPA SVWTGGDTPYLLNRKVDSEAKILNNIAAQLGDNTSASGTI
 Bp1106A-1_BcpA-CT/1-406 GELYRYTMPEYAEGTWNLYKGNIDANHRYSPPGVGA IYAGTTPQTS LAEITSYEPLKQGV LVTKNFV INNVLDLTNPAA RQALGVTV DQLTQTSHGGAAYDAT
 BpBCC215-2_BcpA-CT/1-406 GELYRYTMPEYAEGTWNLYKGNIDANHRYSPPGVGA IYAGTTPQTS LAEITSYEPLKQGV LVTKNFV INNVLDLTNPAA RQALGVTV DQLTQTSHGGAAYDAT
 BpB7210-3_BcpA-CT/1-506 GELYRYTMPEYAEGTWNLYKGNIDANHRYSPPGVGA IYAGTTPQTS LAEITSYEPLKQGV LVTKNFV INNVLDLTNPAA RQALGVTV DQLTQTSHGGAAYDAT
 Bp7894-2_BcpA-CT/1-408 GEVYRYTLPEWAAGTWDIYPGNVA TNHRYSPGEGVAGYAGTTPA TAAAEVASYGALEGRV LVSKNVV INNVLDLTNPAA RQALGVTV DQLTQTSHGGAAYTAP
 BpMSHR346_BcpA-CT/1-384 TAA ERGFVNEMVSG-----GRTVEV IPS SNVGRSGDFLIDGKKYELK TMTNVVKQSDGSLSKA ISS TAMDA RGQS-----GDI I IDARNQAGMT
 Bp305_BcpA-CT/1-384 TAA ERGFVNEMVSG-----GRTVEV IPS SNVGRSGDFLIDGKKYELK TMTNVVKQSDGSLSKA ISS TAMDA RGQS-----GDI I IDARNQAGMT
 Bp406e_BcpA-CT/1-384 TAA ERGFVNEMVSG-----GRTVEV IPS SNVGRSGDFLIDGKKYELK TMTNVVKQSDGSLSKA ISS TAMDA RGQS-----GDI I IDARNQAGMT
 Bp7894-1_BcpA-CT/1-384 TAA ERGFVNEMVSG-----GRTVEV IPS SNVGRSGDFLIDGKKYELK TMTNVVKQSDGSLSKA ISS TAMDA RGQS-----GDI I IDARNQAGMT
 Bp567-2_BcpA-CT/1-384 TAA ERGFVNEMVSG-----GRTVEV IPS SNVGRSGDFLIDGKKYELK TMTNVVKQSDGSLSKA ISS TAMDA RGQS-----GDI I IDARNQAGMT
 Bp7894-3_BcpA-CT/1-481 TSA ERSF INEMVSG-----GRTVEV IPS SNVGRSGDFLIDGKKYELK TMTNVVKQSDGSLSKA ISS TAMDA RGQS-----ADI I IDARNQAGMT
 BpDM98_BcpA-CT/1-365 APQGS SVDFV FSSGPNN-----GKTVDFMLTPDTVAQA AK INQF FDKNLNNFMNTLSDHAAAADFVPLDS RFLSE-----ANKTLLLVKAI
 BpS13_BcpA-CT/1-365 APQGS SVDFV FSSGPNN-----GKTVDFMLTPDTVAQA AK INQF FDKNLNNFMNTLSDHAAAADFVPLDS RFLSE-----ANKTLLLVKAI
 Bp1710b-2_BcpA-CT/1-365 APQGS SVDFV FSSGPNN-----GKTVDFMLTPDTVAQA AK INQF FDKNLNNFMNTLSDHAAAADFVPLDS RFLSE-----ANKTLLLVKAI
 Bp1655_BcpA-CT/1-365 APQGS SVDFV FSSGPNN-----GKTVDFMLTPDTVAQA AK INQF FDKNLNNFMNTLSDHAAAADFVPLDS RFLSE-----ANKTLLLVKAI
 BpB7210-1_BcpA-CT/1-365 APQGS SVDFV FSSGPNN-----GKTVDFMLTPDTVAQA AK INQF FDKNLNNFMNTLSDHAAAADFVPLDS RFLSE-----ANKTLLLVKAI
 Bp112-1_BcpA-CT/1-365 APQGS SVDFV FSSGPNN-----GKTVDFMLTPDTVAQA AK INQF FDKNLNNFMNTLSDHAAAADFVPLDS RFLSE-----ANKTLLLVKAI
 Bp1106A-3_BcpA-CT/1-365 APQGS SVDFV FSSGPNN-----GKTVDFMLTPDTVAQA AK INQF FDKNLNNFMNTLSDHAAAADFVPLDS RFLSE-----ANKTLLLVKAI
 Bp14_BcpA-CT/1-316 EVKNYNI ENNSNGL INNVANQA IQRAVNL PEGMQQVVIDIRGQTASPAQRTA IVQG IVQK SNGIISPLNIQFKTK-----KPPK-----
 Bp567-1_BcpA-CT/1-307 GELRSDLDGTL LVPA SK-----S--QKGVTPPPNEVQIDHIVAKNPADSSAPAGTNSYSNAQVLSREQNRDKSN-----RIKWK-----
 BpK96243_BcpA-CT/1-327 GPVGT TMDNRSAG-----KTPDGLPRNDASVYVYSGSKSGYVVVNDRTGEVQVSGKNDPGWIPDS-----RIKWK-----
 Bp91_BcpA-CT/1-327 GPVGT TMDNRSAG-----KTPDGLPRNDASVYVYSGSKSGYVVVNDRTGEVQVSGKNDPGWIPDS-----RIKWK-----
 BpBCC215-1_BcpA-CT/1-346 ANKGYDVVQNPEV LGPKNPDTYINGQVFDNYAPA TGNVRNIATTSNKVSSGQASNIVNVLADSSASPAALAEQIN-----SYPIPGLGKV
 Bp1026b_BcpA-CT/1-346 ANKGYDVVQNPEV LGPKNPDTYINGQVFDNYAPA TGNVRNIATTSNKVSSGQASNIVNVLADSSASPAALAEQIN-----SYPIPGLGKV
 BpNCTC13177_BcpA-CT/1-320 TRLDIMTKDSAGTIGCV ECKSSDTA PLTKNQAAFPQIEAEGGIVGKKGPG-----FEGGTVLPPTKVEIVRPSD-----STPPSNGGKG
 BaAMMD_BcpA-CT/1-238 NPNPGQRPGQIHYQDN-----QGNKYLYDPNTNSFPDAPNSVKKLLNN-----PDFNSAIQKGLSKYLG-----GK-----
 BaIOP40-10_BcpA-CT/1-276 TPVNTNPNISIVRNIIEGK-----FDQANGVIVQADLSNADMSIAAARIWGPNGQNFNTIFFQNSGGQIFKFNRPIG-----GK-----
 BaMEX-5_BcpA-CT/1-412 GSLTGDAELPPANAPADQVRAVQRQNEAAQILADHGLDV EQLPNSSGSPGANPDLKINGQVADVYSPTTKNLQT IWDNVAKKVQTOAPNVVINLADSP LSGADV
 BcH111_BcpA-CT/1-400 TVETVMMPGQLSSNL SKG--QVVIVNIRGHFIVDSEVSVNGVSYYMTRDPYIGPRGVLASALNLSAMSGNVNAIVIGR-----
 BdAUO158-1_BcpA-CT/1-423 NTA EQGVLSQLDQLPSKDLQGQAREYVANNYFV RNFGFTPLDGKCGANC FDGVYVKGNTVYVNEVKPLNGPGSISLNPENPATGLPTQQTDEWVRNSFOTLKK S
 BdAUO158-2_BcpA-CT/1-248 NSSIPGGDGVRYAIDS-----KGNINRFSDGNGVYHWSGATGSSS-----PLNVSKIPIDVKRTLGL-----FKGR-----
 BgBSR3-1_BcpA-CT/1-406 GELYRYTMPEYAEGTWNLYKGNIDANHRYSPPGVGA IYAGTTPQTS LAEITSYEPLKQGV LVTKNFV INNVLDLTNPAA RQALGVTV DQLTQTSHGGAAYDAT
 BgBSR3-2(p)_BcpA-CT/1-298 GVLKSDLDGTA LVPA SK-----S--QKGVTPPPNEVQIDHIVKPNPADSSLPAGTNSYSNAQVLSREQNRKSN-----NPPK-----
 BgBSR3-3_BcpA-CT/1-242 NGDGTSMQYRGS-----GQDHGGIPRPNVKETTIN--VAPDG-----TVFVGKGEVRQARPNEIPK-----GK-----
 BglBGR1_BcpA-CT/1-416 NTA EQGVLSQLDQLPSKDLQGQAREYVANNYFV RNFGFTPLDGKCGVNC FDGVYIKGDTVYINEVKPLNANGSVQLN--GPSGSLPTQMTDGWVDSAVARLR-S
 BmCGD2M-1_BcpA-CT/1-167 -----
 BmCGD2M-2_BcpA-CT/1-374 GDDGGHLIATILNGPGE---KLNIVPMDSNLNRGAWKQLENSWADALSAGKQVKVSI EPQYQGDSSRRPEGFNITYVVG-----NGRPAQ
 BphSTM815-1_BcpA-CT/1-400 GVL SANVSGVNLVYDGS LYGAGGVAMTNPASVSYNPGVSTTFGYIFGAKTAQDV TNLVAGDGNQAFVSIPTNMGVNVIGAI THAYGGATAIEIGVGQPGTLSY
 BphSTM815-2(p)_BcpA-CT/1-400 TKACPTCGKDVTVAPGQ-----GARWDVDVHQPWPWSQRDLTGMTQRQEVINEYNSGTRLECPSCNRSRGANPAGQ-----
 BrHKI454_BcpA-CT/1-400 VSTGMKFVFPV FMTGVGGA LTGSA LQQQNPNAA MGGAAVGTVIGYPIGAKIEGK LNDV LNPWYRQEWVDVGMGMSKYVAPSK LPSWLGGGAAGGAAQEKMGATVQ
 BuBU_BcpA-CT/1-276 TPENTNPNISIVRNIIEGK-----FDQANGVIVQADLSNADMSIAAARTWGKPNIGYGFNTIFFQNSKGQIFRFDRIPIG-----GG-----
 BvG4_BcpA-CT/1-357 QNQTKANWFSQA LGFDQRNWQDLASQLYFDPATAVPTKTTQYQGTYEQVPIITGANGKTDITSFVFMKDSNGT VRLV TGI PAKK-----
 BxLB400_BcpA-CT/1-400 NCDGKYSDPQYANHDYNSQYIASNQSAYNAGQSLGKGVTYNDLVKNNVKNPNVSTAGIAGAMMALGGVAAGGLPSIGGALIGGGIGGTVNAGA QYMYGGGQV
 RsCFBP2957(p)_BcpA-CT/1-400 LYKVNRPD VDYV I IENKFISSTKT TGFNALDSTADGRQGSTSWILGRNRLEDAGV GREQAPDIRRSVDLGR TETWVVTTRADGST EIQV LDSLGRPKPVDTSKI
 RsCMR15(p)_BcpA-CT/1-400 VDAMNSRDFS PMVQC EKVDCSEIAERLLNVAKGDGQILEVRPTIPRTLNVFENGKIEPNQFYHQVYTDGRYVYDPRIS-----SRPIPKGDWE
 RsGMI1000_BcpA-CT/1-445 IKISPEVLSVTAQQPYKE--GQLITNAGRAVTKHPYFGFDS TQELRKVYRTDTQLNELAANSIREILRDGARTTG--SGGRYPNGWV TYTLPDGRAASWGAS
 RsPo82-1_BcpA-CT/1-241 SMELSH EPTPA RDGGKE-----FVPRWPQDHA TVDPYRRPGY-----
 RsPo82-2(p)_BcpA-CT/1-400 ICTDKNCVSTNNGGPWTPKFAK LFDGADMS LQDQANKV LVDGHVGHPPQEYHDTVYRRLGEAVADLPKTPQYQQA LRDELARIS-----NEIKTP
 RsPSI07_BcpA-CT/1-400 EVKNYNIATNSSGLIKNVADQA IQRQANLPAGMEQQIVIDVRGQTMTAQQEDAIVKGI VSRSSQGAIRPDAIEFRR-----
 RsR24_BcpA-CT/1-400 LNMVDDIKDQLREQGYRVSDKEISFGSSCGAGRCRPDIVAEGPDGKIRIIEVK TGGADLSIROSEIFPQIKDGSAPIRGEVARAFGLKPGVALKYQGYPDGIP
 CmCH34(p)_BcpA-CT/1-165 -----

520 530 540 550 560 570 580 590 600 610

BtE264_BcpA-CT/1-423
BtTXDOH_BcpA-CT/1-298
Bp1106A-2_BcpA-CT/1-408
BpB7210-2_BcpA-CT/1-408
Bp1710b-1_BcpA-CT/1-408
Bp112-2_BcpA-CT/1-408
BpPasteur52237_BcpA-CT/1-408
Bp668_BcpA-CT/1-411
Bp1106A-1_BcpA-CT/1-406
BpBCC215-2_BcpA-CT/1-406
BpB7210-3_BcpA-CT/1-506
Bp7894-2_BcpA-CT/1-408
BpMSHR346_BcpA-CT/1-384
Bp305_BcpA-CT/1-384
Bp406e_BcpA-CT/1-384
Bp7894-1_BcpA-CT/1-384
Bp567-2_BcpA-CT/1-384
Bp7894-3_BcpA-CT/1-481
BpDM98_BcpA-CT/1-365
Bp513_BcpA-CT/1-365
Bp1710b-2_BcpA-CT/1-365
Bp1655_BcpA-CT/1-365
BpB7210-1_BcpA-CT/1-365
Bp112-1_BcpA-CT/1-365
Bp1106A-3_BcpA-CT/1-365
Bp14_BcpA-CT/1-316
Bp567-1_BcpA-CT/1-307
BpK96243_BcpA-CT/1-327
Bp91_BcpA-CT/1-327
BpBCC215-1_BcpA-CT/1-346
Bp1026b_BcpA-CT/1-346
BpNCTC13177_BcpA-CT/1-320
BaAMMD_BcpA-CT/1-238
BaIOP40-10_BcpA-CT/1-276
BaMEX-5_BcpA-CT/1-412
BcH111_BcpA-CT/1-400
BdAUO158-1_BcpA-CT/1-423
BdAUO158-2_BcpA-CT/1-248
BgBSR3-1_BcpA-CT/1-406
BgBSR3-2(p)_BcpA-CT/1-298
BgBSR3-3_BcpA-CT/1-242
BglBGR1_BcpA-CT/1-416
BmCGD2M-1_BcpA-CT/1-167
BmCGD2M-2_BcpA-CT/1-374
BphSTM815-1_BcpA-CT/1-400
BphSTM815-2(p)_BcpA-CT/1-400
BrHK1454_BcpA-CT/1-400
BuBU_BcpA-CT/1-276
BvG4_BcpA-CT/1-357
BxLB400_BcpA-CT/1-400
RsCFBP2957(p)_BcpA-CT/1-400
RsCMR15(p)_BcpA-CT/1-400
RsGMI1000_BcpA-CT/1-445
RsPo82-1_BcpA-CT/1-241
RsPo82-2(p)_BcpA-CT/1-400
RsPSI07_BcpA-CT/1-400
RsR24_BcpA-CT/1-400
CmCH34(p)_BcpA-CT/1-165

GD P Q L I K T A E V V E Q A F R N G N L V K T V S G V N S N G M V V V K V P R N T P
N L F T E R P P C T S C S N V I Q Q F Q N K Y P N I K I N V M D S N G V L K P S K
N L F T E R P P C T S C S N V I Q Q F Q N K Y P N I K I N V M D S N G V L K P S K
N L F T E R P P C T S C S N V I Q Q F Q N K Y P N I K I N V M D S N G V L K P S K
N L F T E R P P C T S C S N V I Q Q F Q N K Y P N I K I N V M D S N G V L K P S K
N L F T E R P P C T S C S N V I Q Q F Q N K Y P N I K I N V M D S N G V L K P S K
N L F T E R P P C E S C S N T I I K F Q E K Y P N I K I N V M D S N G V I R P S K R
Q A I S T W A R E Q G Y Q A I L A P S A Q L P G G V N L I S F K S L G K Q
Q A I S T W A R E Q G Y Q A I L A P S A Q L P G G V N L I S F K S L G K Q
Q A I S T W A R E Q G Y Q A I L A P S A Q L P G G V N L I S F K S L G N S N M E D I P E G W G K F V D A L R P S W E E N D V T K E L S N L V R D P E I A V A I W G C L K E G A I T W L D Y K A P I L K K R K P
Q A I S V W A R E Q G Y Q A I L A P S A Q N A G G V N L I S F K P L G E G R K
P E I A Q R G I G R A Y S R D T D T G A K I Q S I T V I T P Q G T V Y V P R L P K
P E I A Q R G I G R A Y S R D T D T G A K I Q S I T V I T P Q G T V Y V P R L P K
P E I A Q R G I G R A Y S R D T D T G A K I Q S I T V I T P Q G T V Y V P R L P K
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P E I A Q R G I G R A Y S R D T D T G A K I Q S I T V I T P Q G T V Y V P R L P K
P E I A T R G I S R A L S R D S G S G E K N S K H Y H Y F T G D G V R P E V A E M I A M I N G Y P T A E E L R N R I L R Q L E W R G P T T E V A S V W R G Y L T A L L E W G L L E I S D H D A L A S L L P V
G N L P Q K L Q A K I I L I K
G N L P Q K L Q A K I I L I K
G N L P Q K L Q A K I I L I K
G N L P Q K L Q A K I I L I K
G N L P Q K L Q A K I I L I K
G N L P Q K L Q A K I I L I K
G N L P Q K L Q A K I I L I K
G N L P Q K L Q A K I I L I K
I V I D K L G N I T I I K P K G N
I V I D K L G N I T I I K P K G N
K
A Q F L Q R N P V A G M N T V T V I K N G A V V V V G R
K D P D L V K T G S I I E K A F E E G K L V K L V S G V D S N G M V I V K I P R G S K
Q A I S T W A R E Q G Y Q A I L A P S A Q L P G G V N L I S F K S L G K Q
G D A N Q R A T A D L I Q K A I D S G K L V K I V T G V N S N G A T L V K I K
Q Y F R N S P G G R
G I V P W S H T T Q V T G Q S K
N K L D E E A A K K
S V V D V A I A G L T G A I T Y G T S L L P G L
L L P G S N A V G A K L
Q H I R N I N P G G V V I S N K P Q G L H
G D F I G F R G I S K
G T L L N K L V T K Q
V E I M N F P G A K N E R K

	620	630	640	650
BtE264_BcpA-CT/1-423	-	-	-	-
BtTXDOH_BcpA-CT/1-298	-	-	-	-
Bp1106A-2_BcpA-CT/1-408	-	-	-	-
BpB7210-2_BcpA-CT/1-408	-	-	-	-
Bp1710b-1_BcpA-CT/1-408	-	-	-	-
Bp112-2_BcpA-CT/1-408	-	-	-	-
BpPasteur52237_BcpA-CT/1-408	-	-	-	-
Bp668_BcpA-CT/1-411	-	-	-	-
Bp1106A-1_BcpA-CT/1-406	-	-	-	-
BpBCC215-2_BcpA-CT/1-406	-	-	-	-
BpB7210-3_BcpA-CT/1-506	I	D	L	L
Bp7894-2_BcpA-CT/1-408	K	T	E	K
BpMSHR346_BcpA-CT/1-384	G	R	G	E
Bp305_BcpA-CT/1-384	I	R	W	M
Bp406e_BcpA-CT/1-384	L	I	S	N
Bp7894-1_BcpA-CT/1-384	P	W	W	S
Bp567-2_BcpA-CT/1-384	G	M	G	E
Bp7894-3_BcpA-CT/1-481	R	S	K	K
BpDM98_BcpA-CT/1-365	S	E		
BpS13_BcpA-CT/1-365	-	-	-	-
Bp1710b-2_BcpA-CT/1-365	-	-	-	-
Bp1655_BcpA-CT/1-365	-	-	-	-
BpB7210-1_BcpA-CT/1-365	-	-	-	-
Bp112-1_BcpA-CT/1-365	-	-	-	-
Bp1106A-3_BcpA-CT/1-365	-	-	-	-
Bp14_BcpA-CT/1-316	-	-	-	-
Bp567-1_BcpA-CT/1-307	-	-	-	-
BpK96243_BcpA-CT/1-327	-	-	-	-
Bp91_BcpA-CT/1-327	-	-	-	-
BpBCC215-1_BcpA-CT/1-346	-	-	-	-
Bp1026b_BcpA-CT/1-346	-	-	-	-
BpNCTC13177_BcpA-CT/1-320	-	-	-	-
BaAMMD_BcpA-CT/1-238	-	-	-	-
BaIOP40-10_BcpA-CT/1-276	-	-	-	-
BaMEX-5_BcpA-CT/1-412	-	-	-	-
BcH111_BcpA-CT/1-400	-	-	-	-
BdAUO158-1_BcpA-CT/1-423	-	-	-	-
BdAUO158-2_BcpA-CT/1-248	-	-	-	-
BgBSR3-1_BcpA-CT/1-406	-	-	-	-
BgBSR3-2(p)_BcpA-CT/1-298	-	-	-	-
BgBSR3-3_BcpA-CT/1-242	-	-	-	-
BglBGR1_BcpA-CT/1-416	-	-	-	-
BmCGD2M-1_BcpA-CT/1-167	-	-	-	-
BmCGD2M-2_BcpA-CT/1-374	-	-	-	-
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BrHKI454_BcpA-CT/1-400	-	-	-	-
BuBU_BcpA-CT/1-276	-	-	-	-
BvG4_BcpA-CT/1-357	-	-	-	-
BxLB400_BcpA-CT/1-400	-	-	-	-
RsCFBP2957(p)_BcpA-CT/1-400	-	-	-	-
RsCMR15(p)_BcpA-CT/1-400	-	-	-	-
RsGMI1000_BcpA-CT/1-445	-	-	-	-
RsPo82-1_BcpA-CT/1-241	-	-	-	-
RsPo82-2(p)_BcpA-CT/1-400	-	-	-	-
RsPSI07_BcpA-CT/1-400	-	-	-	-
RsR24_BcpA-CT/1-400	-	-	-	-
CmCH34(p)_BcpA-CT/1-165	-	-	-	-