

NTDB id 1250 GC085 RS13065 WP 027219989.1	..MNNLQLPLLA	LNRMKRIGP....RIVLKLQKRWPDNL	LMFQLSSV	DIEEAGLPSWLA	QTIKNFDPDF	KTDLNLWSSSENHHI	78
NTDB id 599 KW2 RS05940 WP 021037268.1	.MITNFD....	LFRWKKAGMTNLGVNKL	LKFFRKYDRKISLRQM	.GQVAQVKSIPNF	IEQYKNQDVKL	LRADYKKFS.....S	72
NTDB id 525 SMSK321 RS06295 WP 000705298.1	MKITNYE....	IYKLKKSGLTNQQILK	VLEYGENVDQELLGDI	.ADISGCRNPAVFMERY	FQIDDAHLEKEFK	KITP.....S	73
NTDB id 267 KZH43 RS05590 WP 000705306.1	MKITNYE....	IYKLKKSGLTNQQILK	VLEYGENVDQELLGDI	.ADISGCRNPAVFMERY	FQIDDAHLSKEFQ	KFP.....S	73
NTDB id 226 SPD RS05990 WP 000705306.1	MKITNYE....	IYKLKKSGLTNQQILK	VLEYGENVDQELLGDI	.ADISGCRNPAVFMERY	FQIDDAHLSKEFQ	KFP.....S	73
NTDB id 192 SPR RS05715 WP 000705306.1	MKITNYE....	IYKLKKSGLTNQQILK	VLEYGENVDQELLGDI	.ADISGCRNPAVFMERY	FQIDDAHLSKEFQ	KFP.....S	73
NTDB id 157 SP RS06205 WP 000705306.1	MKITNYE....	IYKLKKSGLTNQQILK	VLEYGENVDQELLGDI	.ADISGCRNPAVFMERY	FQIDDAHLSKEFQ	KFP.....S	73
NTDB id 497 SM12261 RS05565 WP 000705318.1	MKITNYE....	IYKLKKSGLTNQQVLA	VLEYGENVDQELLGDI	.ADISGCRNPAVFMERY	FQIDDAHLEKEFQ	KFP.....S	73
NTDB id 82740 H7674 RS04805 WP 002995009.1	..MNHFE	LYKLKKAAGLTNKNILN	ILDYQEHQEKSLSLRDM	.AVVSGCKHPSHF	IEAYKQCDIQKL	KIEFKQFP.....S	71
NTDB id 407 SMU RS04605 WP 002262865.1	..MDNFG	LFLKLLKAGLTNKNILN	IIDYEEERTQKSLSLRDM	.AVVSKNKKPLFM	EHYKNLDSKALR	KEFNRF.....S	71
consensus	*****	*****!*****	*****	*****	*****!*****	*****	

NTDB	id	1250	GC085	RS13065	WP	027219989.1	L	T	W	S	P	Y	P	A	L	K	E	I	A	D	P	P	F	I	L	Y	A	K	G	E	L	S	A	L	T	Q	P	S	L	A	T	V	G	S	R	N	A	S	V	T	G	N	E	N	A	R	A	F	S	R	E	I	S	R	H	C	V	S	I	V	S	G	L	A	L	G	I	D	A	H	A	H	L	G	C	L	E	G	163			
NTDB	id	599	KW2	RS05940	WP	021037268.1	F	S	I	L	D	D	L	Y	P	E	R	L	R	E	I	Y	N	P	P	V	L	I	F	Y	Q	G	N	I	D	L	L	K	N	P	K	L	A	F	V	G	S	R	L	A	G	Q	S	G	I	K	S	V	Q	K	I	V	T	E	L	N	Q	.	S	F	T	I	V	S	G	L	A	K	G	I	D	T	A	S	H	L	S	A	I	K	T	156
NTDB	id	525	SMSK321	RS06295	WP	000705298.1	F	S	I	L	D	D	C	Y	P	W	D	L	S	E	I	Y	D	A	P	V	L	L	F	Y	K	G	N	L	D	L	L	K	F	P	K	V	A	V	V	G	S	R	S	C	S	K	Q	G	A	K	S	V	E	K	I	Q	G	L	E	N	.	E	L	V	I	V	S	G	L	A	K	G	I	D	T	A	A	H	M	A	A	L	Q	N	157	
NTDB	id	267	KZH43	RS05590	WP	000705306.1	F	S	I	L	D	D	C	Y	P	W	D	L	S	E	I	Y	D	A	P	V	L	L	F	Y	K	G	N	L	D	L	L	K	F	P	K	V	A	V	V	G	S	R	A	C	S	K	Q	G	A	K	S	V	E	K	V	I	Q	G	L	E	N	.	E	L	V	I	V	S	G	L	A	K	G	I	D	T	A	A	H	M	A	A	L	Q	N	157
NTDB	id	226	SPD	RS05990	WP	000705306.1	F	S	I	L	D	D	C	Y	P	W	D	L	S	E	I	Y	D	A	P	V	L	L	F	Y	K	G	N	L	D	L	L	K	F	P	K	V	A	V	V	G	S	R	A	C	S	K	Q	G	A	K	S	V	E	K	V	I	Q	G	L	E	N	.	E	L	V	I	V	S	G	L	A	K	G	I	D	T	A	A	H	M	A	A	L	Q	N	157
NTDB	id	192	SPR	RS05715	WP	000705306.1	F	S	I	L	D	D	C	Y	P	W	D	L	S	E	I	Y	D	A	P	V	L	L	F	Y	K	G	N	L	D	L	L	K	F	P	K	V	A	V	V	G	S	R	A	C	S	K	Q	G	A	K	S	V	E	K	V	I	Q	G	L	E	N	.	E	L	V	I	V	S	G	L	A	K	G	I	D	T	A	A	H	M	A	A	L	Q	N	157
NTDB	id	157	SP	RS06205	WP	000705306.1	F	S	I	L	D	D	C	Y	P	W	D	L	S	E	I	Y	D	A	P	V	L	L	F	Y	K	G	N	L	D	L	L	K	F	P	K	V	A	V	V	G	S	R	A	C	S	K	Q	G	A	K	S	V	E	K	V	I	Q	G	L	E	N	.	E	L	V	I	V	S	G	L	A	K														

NTDB id 1250 GC085 RS13065 WP 027219989.1	GGKTI ¹ AV ² L ³ GT ⁴ G ⁵ I ⁶ DCI ⁷ Y ⁸ PR ⁹ RH ¹⁰ L ¹¹ K ¹² LA ¹³ E ¹⁴ Q ¹⁵ IT ¹⁶ EN ¹⁷ GL ¹⁸ L ¹⁹ SE ²⁰ F ²¹ PL ²² KSP ²³ TA ²⁴ G ²⁵ HF ²⁶ PL ²⁷ RNI ²⁸ IS ²⁹ GL ³⁰ SL ³¹ C ³² IL ³³ V ³⁴ IEA ³⁵ AI ³⁶ K ³⁷ SG ³⁸ SL ³⁹ IT ⁴⁰ AR ⁴¹ MA ⁴² LE ⁴³ Q ⁴⁴ N ⁴⁵	248
NTDB id 599 KW2 RS05940 WP 021037268.1	KTP ¹ TIA ² VIG ³ TG ⁴ L ⁵ D ⁶ I ⁷ FY ⁸ PL ⁹ EN ¹⁰ R ¹¹ K ¹² IQ ¹³ EY ¹⁴ LAK ¹⁵ Y ¹⁶ Q ¹⁷ LV ¹⁸ SEY ¹⁹ SL ²⁰ GK ²¹ PL ²² KY ²³ H ²⁴ FP ²⁵ ERN ²⁶ RII ²⁷ AG ²⁸ LS ²⁹ RG ³⁰ V ³¹ V ³² VEA ³³ K ³⁴ LR ³⁵ SG ³⁶ SL ³⁷ IT ³⁸ CER ³⁹ AL ⁴⁰ EE ⁴¹ GR ⁴²	241
NTDB id 525 SMSK321 RS06295 WP 000705298.1	GGKTI ¹ AV ² IG ³ TG ⁴ L ⁵ D ⁶ V ⁷ FYP ⁸ KANK ⁹ RL ¹⁰ Q ¹¹ DY ¹² IS ¹³ ND ¹⁴ HL ¹⁵ VL ¹⁶ SEY ¹⁷ GP ¹⁸ G ¹⁹ EQ ²⁰ PL ²¹ K ²² F ²³ H ²⁴ FP ²⁵ ARN ²⁶ RII ²⁷ AG ²⁸ LC ²⁹ RG ³⁰ V ³¹ IV ³² AEAK ³³ MR ³⁴ SG ³⁵ SL ³⁶ IT ³⁷ CER ³⁸ AMEE ³⁹ GR ⁴⁰	242
NTDB id 267 KZH43 RS05590 WP 000705306.1	GGKTI ¹ AV ² IG ³ TG ⁴ L ⁵ D ⁶ V ⁷ FYP ⁸ KANK ⁹ RL ¹⁰ Q ¹¹ DY ¹² IGN ¹³ D ¹⁴ HL ¹⁵ VL ¹⁶ SEY ¹⁷ GP ¹⁸ G ¹⁹ EQ ²⁰ PL ²¹ K ²² F ²³ H ²⁴ FP ²⁵ ARN ²⁶ RII ²⁷ AG ²⁸ LC ²⁹ RG ³⁰ V ³¹ IV ³² AEAK ³³ MR ³⁴ SG ³⁵ SL ³⁶ IT ³⁷ CER ³⁸ AMEE ³⁹ GR ⁴⁰	242
NTDB id 226 SPD RS05990 WP 000705306.1	GGKTI ¹ AV ² IG ³ TG ⁴ L ⁵ D ⁶ V ⁷ FYP ⁸ KANK ⁹ RL ¹⁰ Q ¹¹ DY ¹² IGN ¹³ D ¹⁴ HL ¹⁵ VL ¹⁶ SEY ¹⁷ GP ¹⁸ G ¹⁹ G ²⁰ EQ ²¹ PL ²² K ²³ F ²⁴ H ²⁵ FP ²⁶ ARN ²⁷ RII ²⁸ AG ²⁹ LC ³⁰ RG ³¹ V ³² IV ³³ AEAK ³⁴ MR ³⁵ SG ³⁶ SL ³⁷ IT ³⁸ CER ³⁹ AMEE ⁴⁰ GR ⁴¹	242
NTDB id 192 SPR RS05715 WP 000705306.1	GGKTI ¹ AV ² IG ³ TG ⁴ L ⁵ D ⁶ V ⁷ FYP ⁸ KANK ⁹ RL ¹⁰ Q ¹¹ DY ¹² IGN ¹³ D ¹⁴ HL ¹⁵ VL ¹⁶ SEY ¹⁷ GP ¹⁸ G ¹⁹ EQ ²⁰ PL ²¹ K ²² F ²³ H ²⁴ FP ²⁵ ARN ²⁶ RII ²⁷ AG ²⁸ LC ²⁹ RG ³⁰ V ³¹ IV ³² AEAK ³³ MR ³⁴ SG ³⁵ SL ³⁶ IT ³⁷ CER ³⁸ AMEE ³⁹ GR ⁴⁰	242
NTDB id 157 SP RS06205 WP 000705306.1	GGKTI ¹ AV ² IG ³ TG ⁴ L ⁵ D ⁶ V ⁷ FYP ⁸ KANK ⁹ RL ¹⁰ Q ¹¹ DY ¹² IGN ¹³ D ¹⁴ HL ¹⁵ VL ¹⁶ SEY ¹⁷ GP ¹⁸ G ¹⁹ EQ ²⁰ PL ²¹ K ²² F ²³ H ²⁴ FP ²⁵ ARN ²⁶ RII ²⁷ AG ²⁸ LC ²⁹ RG ³⁰ V ³¹ IV ³² AEAK ³³ MR ³⁴ SG ³⁵ SL ³⁶ IT ³⁷ CER ³⁸ AMEE ³⁹ GR ⁴⁰	242
NTDB id 497 SM12261 RS05565 WP 000705318.1	GGKTI ¹ AV ² IG ³ TG ⁴ L ⁵ D ⁶ V ⁷ FYP ⁸ KANK ⁹ RL ¹⁰ Q ¹¹ DY ¹² IGN ¹³ D ¹⁴ HL ¹⁵ VL ¹⁶ SEY ¹⁷ GP ¹⁸ G ¹⁹ EQ ²⁰ PL ²¹ K ²² F ²³ H ²⁴ FP ²⁵ ARN ²⁶ RII ²⁷ AG ²⁸ LC ²⁹ RG ³⁰ V ³¹ IV ³² AEAK ³³ MR ³⁴ SG ³⁵ SL ³⁶ IT ³⁷ CER ³⁸ AMEE ³⁹ GR ⁴⁰	242
NTDB id 82740 H7674 RS04805 WP 002995009.1	GG ¹ QTIA ² I ³ IG ⁴ TG ⁵ L ⁶ DR ⁷ FYP ⁸ KE ⁹ N ¹⁰ REL ¹¹ QT ¹² FL ¹³ G ¹⁴ KN ¹⁵ HL ¹⁶ VL ¹⁷ TEY ¹⁸ GP ¹⁹ GE ²⁰ EA ²¹ LS ²² Y ²³ H ²⁴ FP ²⁵ ERN ²⁶ RII ²⁷ AG ²⁸ LS ²⁹ RC ³⁰ IL ³¹ V ³² VEA ³³ K ³⁴ NR ³⁵ SG ³⁶ SL ³⁷ IT ³⁸ C ³⁹ Q ⁴⁰ IG ⁴¹ TEE ⁴² GR ⁴³	240
NTDB id 407 SMU RS04605 WP 002262865.1	GGATIA ¹ VIG ² TG ³ L ⁴ D ⁵ V ⁶ HY ⁷ PKEN ⁸ RL ⁹ Q ¹⁰ DY ¹¹ IA ¹² KN ¹³ HL ¹⁴ LS ¹⁵ EY ¹⁶ EA ¹⁷ QS ¹⁸ Q ¹⁹ PL ²⁰ KY ²¹ H ²² FP ²³ ERN ²⁴ RII ²⁵ AG ²⁶ LS ²⁷ Q ²⁸ GV ²⁹ IV ³⁰ AEAK ³¹ LR ³² SG ³³ SL ³⁴ IT ³⁵ CER ³⁶ AME	

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NTDB id 1250 GC085 RS13065 WP 027219989.1	DVLAIPGSIHNP	LARGCHYLL	QQGAKLVT	SVADVL	DELKIE	HHQFTSN	KPIFSLAS	GKENLV	KFIGFETTT	IDQIIDRSGY	GMEQ	333
NTDB id 599 KW2 RS05940 WP 021037268.1	DIFAIPGN	IADGTS	DGCNHL	IQGAKLVY	QAQD	ILEEYLYN						282
NTDB id 525 SMSK321 RS06295 WP 000705298.1	DVFAIPGS	ILDGLSDG	CHHLIQEGAKL	VTSGQDVLA	AEFEF							282
NTDB id 267 KZH43 RS05590 WP 000705306.1	DVFAIPGS	ILDGLSDG	CHHLIQEGAKL	VTSGQDVLA	AEFEF							282
NTDB id 226 SPD RS05990 WP 000705306.1	DVFAIPGS	ILDGLSDG	CHHLIQEGAKL	VTSGQDVLA	AEFEF							282
NTDB id 192 SPR RS05715 WP 000705306.1	DVFAIPGS	ILDGLSDG	CHHLIQEGAKL	VTSGQDVLA	AEFEF							282
NTDB id 157 SP RS06205 WP 000705306.1	DVFAIPGS	ILDGLSDG	CHHLIQEGAKL	VTSGQDVLA	AEFEF							282
NTDB id 497 SM12261 RS05565 WP 000705318.1	DVFAIPGS	ILDGLSDG	CHHLIQEGAKL	VTSGQDVLA	AEFEF							282
NTDB id 82740 H7674 RS04805 WP 002995009.1	DIFAVPGN	ILDGKSE	GCLQLIKE	GATCVTSG	MDILSEY							278
NTDB id 407 SMU RS04605 WP 002262865.1	DVFVPGN	ILDGQSE	GCHHLIQEGAKC	ITSGFDIL	NEFNF							280
consensus	*****!	*!*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	

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NTDB id 1250 GC085 RS13065 WP 027219989.1	VTSGLA	ELEL	KGAV	I	AV	PGGY	I	R	C	E	Y	E	R	361
NTDB id 599 KW2 RS05940 WP 021037268.1	VTSGLA	ELEL	KGAV	I	AV	PGGY	I	R	C	E	Y	E	R	282
NTDB id 525 SMSK321 RS06295 WP 000705298.1	VTSGLA	ELEL	KGAV	I	AV	PGGY	I	R	C	E	Y	E	R	282
NTDB id 267 KZH43 RS05590 WP 000705306.1	VTSGLA	ELEL	KGAV	I	AV	PGGY	I	R	C	E	Y	E	R	282
NTDB id 226 SPD RS05990 WP 000705306.1	VTSGLA	ELEL	KGAV	I	AV	PGGY	I	R	C	E	Y	E	R	282
NTDB id 192 SPR RS05715 WP 000705306.1	VTSGLA	ELEL	KGAV	I	AV	PGGY	I	R	C	E	Y	E	R	282
NTDB id 157 SP RS06205 WP 000705306.1	VTSGLA	ELEL	KGAV	I	AV	PGGY	I	R	C	E	Y	E	R	282
NTDB id 497 SM12261 RS05565 WP 000705318.1	VTSGLA	ELEL	KGAV	I	AV	PGGY	I	R	C	E	Y	E	R	282
NTDB id 82740 H7674 RS04805 WP 002995009.1	VTSGLA	ELEL	KGAV	I	AV	PGGY	I	R	C	E	Y	E	R	278
NTDB id 407 SMU RS04605 WP 002262865.1	VTSGLA	ELEL	KGAV	I	AV	PGGY	I	R	C	E	Y	E	R	280
consensus	VTSGLA	ELEL	KGAV	I	AV	PGGY	I	R	C	E	Y	E	R	

- ⓧ non conserved
- ✗ similar
- ⓧ ≥ 50% conserved