

Supplementary Table 7: Multiple sequence alignment of all novel putative coding transcripts with known retroviral element sequences. Protein sequences were translated from the predicted open reading frame of each transcript, and aligned to the human proteome. All alignments (E Value < 1 x 10-10) are included.

Reference sequence (1): lcl|Query_ProteinA

Identities normalised by aligned length.

Colored by: identity + property

		1	[80
1 lcl Query_ProteinA	100.0%			
2 gi 30269262polprotein	15.1%	-----MARM	AMRTVGGKDIDFLVDTGAEHSVTAPVAPLS	-----KKTIDIIAGAMGSAKQAFCLPRTCTVGGHKVIHQFL
3 gi 1034619561HERK9polX1	19.2%	SS--IPKEPLVRMTVGGRDIDFLVDGAEHSLVTAPVAPLSK	--KTIDIIAGATGSAKQASCLPRTCTVGGHKVIHQFW	
4 gi 767881134HERK18polX2	20.7%			
5 gi 767881132HERK18polX1	19.4%			
6 gi 68164966polprecursor	32.6%			
7 gi 5802821GagProPolProtein	11.3%	ASQVSENRPVCKAIIQGKQFEGL	VDTGADVSIIALNQWPKNWPQKAVTGLVGIGTASEVYQ	QSTEILHCLGPDNQESTVQ
8 gi 52000770HERK113Pol	18.4%			
9 gi 13021825polymerase	18.0%			
10 gi 13021822polymerase	18.0%			
11 gi 52000839HERK6pol	18.0%			
12 gi 118572691HERK9pol	12.9%	ASQVSENRPVCKAIIQGKQFEGL	VDTGADVSIIALNQWPKNWPQKAVTGLVGIGTASEVYQ	SMEILHCLGPDNQESTVQ
13 gi 52000773HERK7pol	18.0%			
14 gi 52000846HERK11pol	18.4%			
15 gi 52000774HERK25pol	18.4%			
16 gi 52000771HERK8pol	18.4%			
17 gi 3600073polymerase	19.0%			
18 gi 5802814GagProPolEnvProt	11.3%	ASQVSENRPVCKAIIQGKQFEGL	VDTGADVSIIALNQWPKNWPQKAVTGLVGIGTASEVYQ	QSTEILHCLGPDNQESTVQ
19 gi 257758ReverseTranscript	30.3%			
20 gi 3600064polymerase	18.5%			
21 gi 52000844HERK18pol	18.8%			
22 gi 3600071polymerase	19.0%			
23 gi 3600069polymerase	19.0%			
24 gi 3600067polymerase	18.5%			
25 gi 52000847HERK19pol	18.6%			
26 gi 5802810GagProPol	11.0%	ASQVSENRPVCKAIIQGKQFEGL	VDTGADVSIIALNQWPKNWPQKAVTGLVGIGTASEVYQ	QSTEILHCLGPDNQESTVQ
27 gi 110811564ReverseTranscriptase	18.0%			
28 gi 21913258polprotein	17.6%			
29 gi 52001473HERK10pol	18.0%			
30 gi 5802819GagProPol	11.0%	ASQVSENRPVCKAIIQGKQFEGL	VDTGADVSIIALNQWPKNWPQKAVTGLVGIGTASEVYQ	SMEILHCLGPDNQESTVQ
consensus/100%				
consensus/90%				
consensus/80%				
consensus/70%				
		81	1	160
1 lcl Query_ProteinA	100.0%			MSPVLNPHWDT-ST
2 gi 30269262polprotein	15.1%	YM-PDCPLPLLGRDLLSKLRATISFTEHGSLLLKLPGTVIMTLTVPREEWRFLTESGQEIRPALAKRPRVWAEDNP		
3 gi 1034619561HERK9polX1	19.2%	YM-PDCPLPLLGRDLLSKLRATISLTEHGSFLLKLPRTGVIMTLMPQKEWRLFLTEPGQERRPALSQWPRVWAEDNP		
4 gi 767881134HERK18polX2	20.7%			
5 gi 767881132HERK18polX1	19.4%			
6 gi 68164966polprecursor	32.6%			-FLG
7 gi 5802821GagProPolProtein	11.3%	PMITSIPLNLWGRDLQQWGAEITMPAP	--SYSPTSQKIMTKMGYIPGKGLGKNEDGIKIPVEAKINQEREGIREGIPNCLG	-NKSRKRRNRVS- -FLG
8 gi 52000770HERK113Pol	18.4%			-NKSRKRRNRES- -LLG
9 gi 13021825polymerase	18.0%			-NKSRKRRNRES- -LLG
10 gi 13021822polymerase	18.0%			-NKSRKRRNRES- -LLG
11 gi 52000839HERK6pol	18.0%			-NKSRKRRNRES- -LLG
12 gi 118572691HERK9pol	12.9%	PMITSIPLNLWGRDLQQWGAEITMPAP	--LYSPTSQKIMTKRGYIPGKGLGKNEDGIKIPFEAKINQREGIGYPFLG	-NKSRKRRNRLS- -FLG
13 gi 52000773HERK7pol	18.0%			-NKSRKRRNRLS- -FLG
14 gi 52000846HERK11pol	18.4%			-NKSRKRRNRVS- -FLG
15 gi 52000774HERK25pol	18.4%			-NKSKKRRNRVS- -FLG
16 gi 52000771HERK8pol	18.4%			-NKSKKRRNRVS- -FLG
17 gi 3600073polymerase	19.0%			
18 gi 5802814GagProPolEnvProt	11.3%	PMITSIPLNLWGRDLQQWGAEITMPAP	--LYSPTSQKIMTKRGYIPGKGLGKNEDGIKIPFEAKINQREGIGYPFLG	-KSRKRRNRVS- -FLG
19 gi 257758ReverseTranscript	30.3%			-KSRKRRNRVS- -FLG
20 gi 3600064polymerase	18.5%			-KSRKRRNRVS- -FLG
21 gi 52000844HERK18pol	18.8%			-KSRKRRNRVS- -FLG
22 gi 3600071polymerase	19.0%			
23 gi 3600069polymerase	19.0%			
24 gi 3600067polymerase	18.5%			-KSRKRRNRVS- -FLG
25 gi 52000847HERK19pol	18.6%			-NKSKKRRNRVS- -FLG
26 gi 5802810GagProPol	11.0%	PMITSIPLNLWGRDLQQWGAEITMPAP	--LYSPTSQKIMTKMGYIPGKGLGKNEDGIKIPFEAKINQREGIGYPFLG	-NKSKKRRNRVS- -FLG
27 gi 110811564ReverseTranscriptase	18.0%			-NKSKKRRNRVS- -FLG
28 gi 21913258polprotein	17.6%			-KTGHGF- FVG
29 gi 52001473HERK10pol	18.0%			-NKSRKRRNRVS- -FLG
30 gi 5802819GagProPol	11.0%	PMITSIPLNLWGRDLQQWGAEITMPAP	--LYSPTSQKIMTKMGYIPGKGLGKNEDGIKIPFEAKINQREGIGYPFLG	-NKSRKRRNRVS- -FLG
consensus/100%				
consensus/90%				
consensus/80%				
consensus/70%				
		161	2	240
1 lcl Query_ProteinA	100.0%	PTLATDHAPIIPLKPNHYPAPQRQYPIPQQALKGLKPVITHLLQHGLLPTNSPYNSPILPL-QKLDKSYRLVQDLHLV		
2 gi 30269262polprotein	15.1%	PGLAVNQAPVLIIEVKPGAQPVVRQKQYIPVPREALEGIQVPLKCLRTFGMIVPCQS	PWNTPLLPVPEPKTDYWPQGDRLRV	
3 gi 1034619561HERK9polX1	19.2%	PWNTPLLPVPEPKTDYWPQGDRLRV	LGLAVNQAPVLIIEVKPGAQPLVRQKQDPVPREALQGQIQVRLKHLRTFGMIVPCQS	PWNTPLLPVPEPKTDYWPQGDRLRV
4 gi 767881134HERK18polX2	20.7%			-MIVPCQS
5 gi 767881132HERK18polX1	19.4%			PWNTPLLPVPEPKTDYWPQGDRLRV
6 gi 68164966polprecursor	32.6%	AATVEPPKPIPLTWKT-EKPVWVNQWPLPKQKLEALHLLANEQLEKGHIEPSFSFWNSPVFVI-QKSGKWRMLTDLRAV		

7	gi 5802821GagProPolProtein	11.3%	AATVEPPKPIPLTWKT-EKPVWVNQWPLPKQKLEALHLLANEQLEKGHIIEPSFSPWNSPVFVI-QKSGKWRMLTDLRAV
8	gi 52000770HERK113pol	18.4%	AATVEPPKPIPLTWKT-EKPVWVNQWPLPKQKLEALHLLANEQLEKGHIIEPSFSPWNSPVFVI-QKSGKWRMLTDLRAV
9	gi 13021825polymerase	18.0%	AATVEPPKPIPLTWKT-ERPVWVNQWPLPKQKLEALHLLANEQLEKGHIIEPSFSPWNSPVFVI-QKSGKWRMLTDLRAV
10	gi 13021822polymerase	18.0%	AATVEPPKPIPLTWKT-EKPVWVNQWPLPKQKLEALHLLANEQLEKGHIIEPSFSPWNSPVFVI-QKSGKWRMLTDLRAV
11	gi 52000839HERK6pol	18.0%	AATVEPPKPIPLTWKT-EKPVWVNQWPLPKQKLEALHLLANEQLEKGHIIEPSFSPWNSPVFVI-QKSGKWRMLTDLRAV
12	gi 118572691HERK9pol	12.9%	AATIEPPKPIPLTWKT-EKPVWVNQWPLPKQKLEALHLLANEQLEKGHIIEPSFSPWNSPVFVI-QKSGKWRMLTDLRAV
13	gi 52000773HERK7pol	18.0%	AATVEPPKPIPLTWKT-EKPVWVNQWPLPKQKLEALHLLANEQLEKGHIIEPSFSPWNSPVFVI-QKSGKWRMLTDLRAV
14	gi 52000846HERK11pol	18.4%	AATVEPPKPIPLTWKT-EKPVWVNQWPLPKQKLEALHLLANEQLEKGHIIEPSFSPWNSPVFVI-QKSGKWRMLTDLRAV
15	gi 52000774HERK25pol	18.4%	AATVEPPKPIPLTWKT-EKPVWVNQWPLPKQKLEALHLLANEQLEKGHIIEPSFSPWNSPVFVI-QKSGKWRMLTDLRAV
16	gi 52000771HERK8pol	18.4%	VATIEPPKPIPLTWKT-EKLWVNQWPLPKQKLEALHLLANEQLEKGHIIEPSFSPWNSPVFVI-QKSGKWRMLTDLRAV
17	gi 3600073polymerase	19.0%	---VEPPKPIPLTWKT-EKPVWVNQWPLPKQKLEALHLLANEQLEKGHIIEPSFSPWNSPVFVI-QKSGKWRMLTDLRAV
18	gi 5802814GagProPolEnvProt	11.3%	AATVEPPKPIPLTWKT-EKPVWVNQWPLPKQKLEALHLLANEQLEKGHIIEPSFSPWNSPVFVI-QKSGKWRMLTDLRAV
19	gi 257758ReverseTranscript	30.3%	-----PGTNDYQPVQDLDREV
20	gi 3600064polymerase	18.5%	AATVEPPKPIPLTWKT-EKPVWVNQWPLPKQKLEALHLLANEQLEKGHIIEPSFSPWNSPVFVI-QKSGKWRMLTDLRAV
21	gi 52000844HERK18pol	18.8%	VTTVEPPKPIPLTWKT-EKLWVNQWPLPKQKLEALHLLANEQLEKGHIIEPSFSPWNSPVFVI-QKSSKGKWRMLTDLRAV
22	gi 3600071polymerase	19.0%	---VEPPKPIPLTWKT-EKPVWVNQWPLPKQKLEALHLLANEQLEKGHIIEPSFSPWNSPVFVI-QKSGKWRMLTDLRAV
23	gi 3600069polymerase	19.0%	---VEPPKPIPLTWKT-EKPVWVNQWPLPKQKLEALHLLANEQLEKGHIIEPSFSPWNSPVFVI-QKSGKWRMLTDLRAV
24	gi 3600067polymerase	18.5%	AATVEPPKPIPLTWKT-EKPVWVNQWPLPKQKLEALHLLANEQLEKGHIIEPSFSPWNSPVFVI-QKSGKWRMLTDLRAV
25	gi 52000847HERK19pol	18.6%	AATVEPPKPIPLTWKT-EKPVWVNQWPLPKQKLEALHLLANEQLEKGHIIEPSFSPWNSPVFVI-QKSGKWRMLTDLRAV
26	gi 5802810GagProPol	11.0%	AATIEPPKPIPLTWKT-EKPVWVNQWPLPKQKLEALHLLANEQLEKGHIIEPSFSPWNSPVFVI-QKSGKWRMLTDLRAV
27	gi 110811564ReverseTranscriptase	18.0%	AATIEPPKPIPLTWKT-EKPVWVNQWPLPKQKLEALHLLANEQLEKGHIIEPSFSPWNSPVFVI-QKSGKWRMLTDLRAV
28	gi 21913258polprotein	17.6%	ATEIQ---PLPLSWLD-NKPWKIPQWPLTQEKLAAVNIDIVLQLQEAHLQLQPSTPSPNTPPVFVI-QKSGKVQLLHDLRAV
29	gi 52001473HERK10pol	18.0%	AVTVEPPKPIPLTWKT-EKPVWVNQWPLPKQKLEALHLLANEQLEKGHIIEPSFSPWNSPVFVI-QKSGKWHHTLTDLRAV
30	gi 5802819GagProPol	11.0%	AVTVEPPKPIPLTWKT-EKPVWVNQWPLPKQKLEALHLLANEQLEKGHIIEPSFSPWNSPVFVI-QKSGKWHHTLTDLRAV
	consensus/100%	h...P1.1.hhs t...h..Q..lspptltulp..h.p.hphGhI.Ps.SPWNOp1hs1.p.Kotcap.1pDLRhv
	consensus/90%		.s.lps.tP1PLowKs c+.VwlsQwPLP+QKLEAL+llssCQE+GHICpShSPNSPVFVI QKKSukA+hPLDRLAV
	consensus/80%		ssplPEPPKPIPLTWKT EKPVWVNQWPLPKQKLEALHLLANEQLEKGHIIEPSFSPWNSPVFVI QKKS GKWMLTDLRAV
	consensus/70%		

1	lcl Query_ProteinA	100.0%	NQI---VLPIHPIVP-NLYTLLSIPILSTTHYSVIDLKDAFFTIPHPSSQPLFAFTWTDPTD*------
2	gi 30269262polprotein	15.1%	KQATVTLHPAVPNPY-TLLGLL-PAE-DSCF-TCLDLKDAFFSIRFAPESQKLFAFWEDPES-GVTTQYTWTWLPGQFK
3	gi 1034619561HERK9polX1	19.2%	NQA---TLTLHPTVP-NQSTLLGGLPAEDET---LDLKDAFFPIRLAPERQKLFAFWEDPEL-GVSTQHTWTGLPGQFK
4	gi 76788134HERK18polX2	20.7%	KQATVTLHPAVPNPY-TLLGLL-PAE-DSCF-TCLDLKDAFFSIRFAPESQKLFAFWEDPES-GVTTQYTWTWLPGQFK
5	gi 76788132HERK18polX1	19.4%	KQATVTLHPAVPNPY-TLLGLL-PAE-DSCF-TCLDLKDAFFSIRFAPESQKLFAFWEDPES-GVTTQYTWTWLPGQFK
6	gi 68164966polprecursor	32.6%	NAV---IQPMGPLQP-GLPSLA-MIPKDWP-IIIDLKDCFFTIPLAEQDCEKFAFTIPAINNKEPATRFQWKVLPQGML
7	gi 5802821GagProPolProtein	11.3%	NAV---IQPMGPLQP-GLPSPA-MIPKDWP-IIIDLKDCFFTIPLAEQDCEKFAFTIPAINNKEPATRFQWKVLPQGML
8	gi 52000770HERK113Pol	18.4%	NAV---IQPMGPLQP-GLPSPA-MIPKDWP-IIIDLKDCFFTIPLAEQDCEKFAFTIPAINNKEPATRFQWKVLPQGML
9	gi 13021825polymerase	18.0%	NAV---IQPMGPLQP-GLPSPA-MIPKDWP-IIIDLKDCFFTIPLAEQDCEKFAFTIPAINNKEPATRFQWKVLPQGML
10	gi 13021822polymerase	18.0%	NAV---IQPMGPLQP-GLPSPA-MIPKDWP-IIIDLKDCFFTIPLAEQDCEKFAFTIPAINNKEPATRFQWKVLPQGML
11	gi 52000839HERK6pol	18.0%	NAV---IQPMGPLQP-GLPSPA-MIPKDWP-IIIDLKDCFFTIPLAEQDCEKFAFTIPAINNKEPATRFQWKVLPQGML
12	gi 118572691HERK9pol	12.9%	NAV---IQPMGPLQP-GLPSPA-MIPKDWP-IIIDLKDCFFTIPLAEQDCEKFAFTIPAINNKEPATRFQWKVLPQGML
13	gi 52000773HERK7pol	18.0%	NAV---IQPMGPLQP-GLPSPA-MIPKDWP-IIIDLKDCFFTIPLAEQDCEKFAFTIPAINNKEPATRFQWKVLPQGML
14	gi 52000846HERK11pol	18.4%	NAV---IQPMGPLQP-GLPSPA-MIPKDWP-IIIDLKDCFFTIPLAEQDCEKFAFTIPAINNKEPATRFQWKVLPQGML
15	gi 52000774HERK25pol	18.4%	NAV---IQPMGPLQP-GLPSPA-MIPKDWP-IIIDLKDCFFTIPLAEQDCEKFAFTIPAINNKEPATRFQWKVLPQGML
16	gi 52000771HERK8pol	18.4%	NAV---IQPMGPLQP-GLPSPA-MIPKDWP-IIIDLKDCFFTIPLAEQDCEKFAFTIPAINNKEPATRFQWKVLPQGML
17	gi 3600073polymerase	19.0%	NAV---IQPMGPLQP-GLPSPA-MIPKDWP-IIIDLKDCFFTIPLAEQDCEKFAFTISAINNKEPATRFQWKVLPQGML
18	gi 5802814GagProPolEnvProt	11.3%	NAL---IQPMGPLQP-GLPSPA-MIPKDWP-IIIDLKDCFFTIPLAEQDCEKFAFTIPAINNKEPATRFQWKVLPQGML
19	gi 257758ReverseTranscript	30.3%	NKQ---TVTIHPTVL-TLILYS-AAHRHTAY-SVLDLKDAFFAIPLAKPSQPIAFEWTDPGS-GDTTQLTWTQLPGQFK
20	gi 3600064polymerase	18.5%	NAV---IQPMGPLQP-GLPSPA-MIPKDWP-IIIDLKDCFFTIPLAEQDCEKFAFTIPAINNKEPATRFQWKVLPQGML
21	gi 52000844HERK18pol	18.8%	NAV---IQPMGPLQP-GLPSPA-MIPKDWP-IIIDLKDCFFTIPLAEQDCEKFAFTIPAINNKEPATRFQWKVLPQGML
22	gi 3600071polymerase	19.0%	NAV---IQPMGPLQP-GLPSPA-MIPKDWP-IIIDLKDCFFTIPLAEQDCEKFAFTIPAINNKEPATRFQWKVLPQGML
23	gi 3600069polymerase	19.0%	NAV---IQPMGPLQP-GLPSPA-MIPKDWP-IIIDLKDCFFTIPLAEQDCEKFAFTIPAINNKEPATRFQWKVLPQGML
24	gi 3600067polymerase	18.5%	NAL---IQPMGPLQP-GLPSPA-MIPKDWP-IIIDLKDCFFTIPLAEQDCEKFAFTIPAINNKEPATRFQWKVLPQGML
25	gi 52000847HERK19pol	18.6%	NAVNAVIQPMGPLQP-GLPSLA-MIPKDWP-IIIDLKDCFFTIPLAEQDCEKFAFTIPAINNKEPATRFQWKVLPQGML
26	gi 5802810GagProPol	11.0%	NAV---IQPMGPLQP-GLPSPA-MIPKDWP-IIIDLKDCFFTIPLAEQDCEKFAFTIPAINNKEPATRFQWKVLPQGML
27	gi 110811564ReverseTranscriptase	18.0%	NAV---IQPMGPLQP-GLPSPA-MIPKDWP-IIIDLKDCFFTIPLAEQDCEKFAFTIPAINNKEPATRFQWKVLPQGML
28	gi 21913258polprotein	17.6%	NQQ---MQPMGALQ-GLPVPT-MIPKHWP-LIVLDLKDCFFTSIPLHEQDQIRFAFTVPSINHHQPDCKRYEWKLPGQMT
29	gi 52001473HERK10pol	18.0%	NAV---IQPMGPLQP-GLPSPA-MIPKDWP-IIIDLKDCFFTIPLAEQDCEKFAFTIPAINNKEPATRFQWKVLPQGML
30	gi 5802819GagProPol	11.0%	NAV---IQPMGPLQP-GLPSPA-MIPKDWP-IIIDLKDCFFTIPLAEQDCEKFAFTIPAINNKEPATRFQWKVLPQGML
	consensus/100%		pt.....h.shhs... s.....h..p.s....10LDKdsFFSI.ht.pp..hAf.phs.....
	consensus/90%		Nth...1pPhsPh... sl.s.h .h..h .sh hdlPhsChsFFo.LA.pspchPh.fpp.s.tssTppNphPhLPQGh
	consensus/80%		Nt1 1QPMGPLQP GLPo.u MIPKDWP I1IDLKDCFFTIPLAEQDQpc+FAT1lsu.ssptssTppWpsLPQGh
	consensus/70%		NAV IQPMGPLQP GLPSPA MIPKDWP IIIDLKDCFFTIPLAEQDCEKFAFTIPAINNKEPATRFQWKVLPQGML

1	lcl Query_ProteinA	100.0%	-----	-----
2	gi 30269262polprotein	15.1%	NSPTIFG-----	EELARDLQKCPTRDLGCVLLQYVDDLLLGHPTAVGCAKGTDA LLRHLED CGYKVSKK
3	gi 1034619561HERK9polX1	19.2%	NSPTIFG-----	EALARDLQKCPTRDLGCVLLQ-----
4	gi 767881134HERK18polX2	20.7%	NSPTIFG-----	EELARDLQKCPTRNLGCVLLQYVDDLLLGHPTAVGCAKGTDA LLRHLED CGYKVSKK
5	gi 767881132HERK18polX1	19.4%	NSPTIFG-----	EELARDLQKCPTRNLGCVLLQYVDDLLLGHPTAVGCAKGTDA LLRHLED CGYKVSKK
6	gi 68164966polprecursor	32.6%	-----	-----
7	gi 5802821GagProPolProtein	11.3%	NSPTICQ-----	TFVGRALQPVREKFSDCYIIHCIDDILCAAETDKLIDCYTFLQA EVANAGLAIASD
8	gi 52000770HERK113pol	18.4%	NSPTICQ-----	TFVGRALQPVRDKFSDCYIIHYIDDILCAAETDKLIDCYTFLQA EVANAGLAIASD
9	gi 13021825polymerase	18.0%	NSPTICQ-----	TFVGRALQPVREKFSDCYIIHYIDDILCAAETDKLIDCYTFLQA EVANAGLAIASD
10	gi 13021822polymerase	18.0%	NSPTICQ-----	TFVGRALQPVREKFSDCYIIHYIDDILCAAETDKLIDCYTFLQA EVANAGLAIASD
11	gi 52000839HERK6pol	18.0%	NSPTICQ-----	TFVGRALQPVREKFSDCYIIHCIDDILCAAETDKLIDCYTFLQA EVANAGLAIASD
12	gi 118572691HERK9pol	12.9%	NSPTICQ-----	TFVGRALQPVK-VFRLLYS-----
13	gi 52000773HERK7pol	18.0%	NSPTICQ-----	TFVGRALQPVREKFSDCYIIHYIDDILCAAETDKLIDCYTFLQA EVANAGLAIASD
14	gi 52000846HERK11pol	18.4%	NSPTICQ-----	TFVGRALQPVREKFSDCYIIHYIDDILCAAETDKLIDCYTFLQA EVANAGLAIASD
15	gi 52000774HERK25pol	18.4%	NSPTICQ-----	TFVGRALQPVREKFSDCYIIHYIDDILCAAETDKLIDCYTFLQA EVANAGLAIASD
16	gi 52000771HERK8pol	18.4%	NSPTICQ-----	TFVGRALQPVRKKFSDCYIIHYIDDILCAAETDKLIDCYTFLQA EVASAGLAIASD
17	gi 3600073polymerase	19.0%	NSPTICQ-----	TFVGRALQPVREKFSDCYIIHYIDDILCAAETDKLIDCYTFLQA EVANAGLAIASD

18	gi 5802814GagProPolEnvProt	11.3%	NSPTICQ-----	TFVGRALQPVREKFSDCYIIHYIDDILCAAETDKLIDCYTFLQAEVANAGLAIASD
19	gi 257758ReverseTranscript	30.3%	NSPTLFG-----	ETLQQDLIPFRASHPNTLLQ-----
20	gi 3600064polymerase	18.5%	NNPTICQ-----	TFVGRALQPVREKFSDCYIIHYIDDILCAAETDKLIDCYTFLQAEVANAGLAIASD
21	gi 52000844HERK18pol	18.8%	NSPTICQ-----	TFVGRALQPVREKFSDCYIIHYFDDILCAAETDKLIDCYTFLQAEVANAGLAIASD
22	gi 3600071polymerase	19.0%	NNPTICQ-----	TFVGRALQPVREKFSDCYIIHCIDDILCAAETDKLIDCYTFLQAEVANAGLAIASD
23	gi 3600069polymerase	19.0%	NSPTICQ-----	TFVGRALQPVREKFSDCYIIHYIDDILCAAETDKLIDCYTFLQAEVANAGLAIASD
24	gi 3600067polymerase	18.5%	NSPTICQ-----	TFVGRALQPVREKFSDCYIIHYIDDILCAAETDKLIDCYTFLQAEVANAGLAIASD
25	gi 52000847HERK19pol	18.6%	NSPTICQ-----	TFVGRALQPVREKFSDCYIIHYIDDILCAAETDKLIDCYTFLQAEVANAGLAIASD
26	gi 5802810GagProPol	11.0%	NSPTICQ-----	TFVGRALQPVREKFSDCYIIHYIDDILCAAETDKLIDCYTFLQAEVANAGLAIASD
27	gi 110811564ReverseTranscriptase	18.0%	NSPTICQ-----	TFVGRALQPVREKFSDCYIIHYIDDILCAAETDKLIDCYTFLQAEVANAGLAIASD
28	gi 21913258polprotein	17.6%	NSPAICQ-----	LYVDQAVEPVRQQCPKVQILHYMDLLITAESHELMEAYKLLLYLEKVGQLQVAPE
29	gi 52001473HERK10pol	18.0%	NSPTICQ-----	TFVGRALQPVREKFSDCYIIHYIDDILCAAETDKLIDCYTFLQAEVANAGLAIASD
30	gi 5802819GagProPol	11.0%	NSPTICQ-----	TFVGRALQPVREKFSDCYIIHYIDDILCAAETDKLIDCYTFLQAEVANAGLAIASD
		consensus/100%		
		consensus/90%		
		consensus/80%		
		consensus/70%		

		401	.] 420
1	lcl Query_ProteinA	100.0%	-----	
2	gi 30269262polprotein	15.1%	KAQICRPQVRYLGFTIRQGE	
3	gi 1034619561HERK9polX1	19.2%	-----	
4	gi 767881134HERK18polX2	20.7%	KAQICRPQ-----	
5	gi 767881132HERK18polX1	19.4%	KAQICRPQVRYLGFTIRQGE	
6	gi 68164966polprecursor	32.6%	-----	
7	gi 5802821GagProPolProtein	11.3%	KIQTSTPF-HYLMQI-----	
8	gi 52000770HERK113Pol	18.4%	KIQTSTPF-HYLMQI-----	
9	gi 13021825polymerase	18.0%	KIQTSTPF-HYLMQI-----	
10	gi 13021822polymerase	18.0%	KIQTSTPF-HYLMQI-----	
11	gi 52000839HERK6pol	18.0%	KIQTSTPF-HYLMQI-----	
12	gi 118572691HERK9pol	12.9%	-----	
13	gi 52000773HERK7pol	18.0%	KIQTSTPF-HYLMQI-----	
14	gi 52000846HERK11pol	18.4%	KIQTSTPF-HYLMQI-----	
15	gi 52000774HERK25pol	18.4%	KIQTSTPF-HYLMQI-----	
16	gi 52000771HERK8pol	18.4%	KIQTSTPF-HYLMQI-----	
17	gi 3600073polymerase	19.0%	KIQTSTPF-HYLMQI-----	
18	gi 5802814GagProPolEnvProt	11.3%	KIQTSTPF-HYLMQI-----	
19	gi 257758ReverseTranscript	30.3%	-----	
20	gi 3600064polymerase	18.5%	KIQTSTPF-HYLMQI-----	
21	gi 52000844HERK18pol	18.8%	KIQTSTPF-HYLMQI-----	
22	gi 3600071polymerase	19.0%	KIQTSTPF-HYLMQI-----	
23	gi 3600069polymerase	19.0%	KIQTSTPF-HYLMQI-----	
24	gi 3600067polymerase	18.5%	KIQTSTPF-HYLMQI-----	
25	gi 52000847HERK19pol	18.6%	KIQTSTPF-HYLEMQI-----	
26	gi 5802810GagProPol	11.0%	KIQTSTPF-HYLMQI-----	
27	gi 110811564ReverseTranscriptase	18.0%	KIQTSTPF-HYLMQI-----	
28	gi 21913258polprotein	17.6%	RIQKGEVV-QYGLLKVT-----	
29	gi 52001473HERK10pol	18.0%	KIQTSTPF-HYLMQI-----	
30	gi 5802819GagProPol	11.0%	KIQTSTPF-HYLMQI-----	
		consensus/100%		
		consensus/90%		
		consensus/80%		
		consensus/70%		

Reference sequence (1): lcl|Query_ProteinB
Identities normalised by aligned length.
Colored by: identity + property

```

1 lcl|Query_ProteinB 100.0%
2 gi|767899321HERK8gag 36.5%
3 gi|768005179HERK8gag 36.5%
4 gi|119623778hCG2040478 51.1%
consensus/100%
consensus/90%
consensus/80%
consensus/70%
```

1 [. . . : . . .] 80

```

-----MGQVWGLVHFTLELFHT----GNEEEQEYSEVTEEVTEHVYLPAKAKAAKEG
MDVEVWEEVGSTLKKAYKDGAEDIPITVWSVWALIHSTLEAFHTDDEEGDKEERECDNVAEEIKEQIRQPLKE--TQEG
MDVEVWEEVGSAALKAYKDGAEDIPITVWSVWALIHSTLEAFHTDDEEGDKEERECDNVAEEIKEQIRQPLKE--TQEG
-----VRWGAWKHRTVMQVWALVRSTLELFHTDDEEG-----EYDEVTEEVTEQVYLPAKAKVAQEE
.....hhpVuL1+.TLEhFHT....G...EhspVsEElpEphhPhKt..spEt
.....hhpVuL1+.TLEhFHT....G...EhspVsEElpEphhPhKt..spEt
.....hhpVuL1+.TLEhFHT....G...EhspVsEElpEphhPhKt..spEt
.....h+GA.ch.1ThhpWAL1HSTLEhFHTDDEEGGcEEpEhDpVsEElpEQlh.PhKt..sQEG
```

81 1 . . . : . . .] 160

```

1 lcl|Query_ProteinB 100.0%
2 gi|767899321HERK8gag 36.5%
3 gi|768005179HERK8gag 36.5%
4 gi|119623778hCG2040478 51.1%
consensus/100%
consensus/90%
consensus/80%
consensus/70%
```

```

EIHPYPSAPPYY-FDED--DPPHLSFLEDTGQKVIAPVTVRRAAPHVTALSSIQAGIQQARQEGDLEAWQFPVRIHPPDQ
EACPCPSAPPQYL-EDREWPDPLDLSFLEDTERKVSPATVRRAAPRVTALSSIQAGIQQARREGNLEAWKFVPRIHPPDQ
EACPCPSAPPQYL-EDREWPDPLDLSFLEDTEQKVSPATVRRAEPRTALSSIQAGIQQARREGNLEAWKFVPRIHPPDQ
EVHPYPSAPPHYFEKEWPDPDPLSFLDTGRKVVAAPVTT-EQHLERLLSVLFRQEFSRLDERVI-
EhpPhPSAPP.Yh..-c-.DP.cLSFLEDTtpKVluPst...t.+lptL.S1.htp.p.uR.-tp1.
EhpPhPSAPP.Yh..-c-.DP.cLSFLEDTtpKVluPst...t.+lptL.S1.htp.p.uR.-tp1.
EhpPhPSAPP.Yh..-c-.DP.cLSFLEDTtpKVluPst...t.+lptL.S1.htp.p.uR.-tp1.
EspPhPSAPPpYh ED+EWPDp.DLSFLEDTtpKVluPstTVRAtP+VTALSSIQAGIQQARpEGsLEAwfpFPVRIHPPDQ
```

161 . . . : . . .] 240

```

1 lcl|Query_ProteinB 100.0%
2 gi|767899321HERK8gag 36.5%
3 gi|768005179HERK8gag 36.5%
4 gi|119623778hCG2040478 51.1%
consensus/100%
consensus/90%
consensus/80%
consensus/70%
```

```

QGNIIATFEPFPFKSQETP*
QGNVMAFEAPFKLLNEFKQAINQYGPRSPFVMLGSKNVATSSQMIPIDGTLLEPVWLLSFYSLRPGGQMKLLFKLP
QGNVMAFEAPFKLLNEFKQAINQYGPRSPFVMLGSKNVATSSQMIPIDGTLLEPVWLLSFYSLRPGGQMKLLFKLP
-----.
-----.
-----.
-----.
-----.
-----.
```

QGN1hATFesFPFK..pp] 250

241] 250

```

1 lcl|Query_ProteinB 100.0%
2 gi|767899321HERK8gag 36.5%
3 gi|768005179HERK8gag 36.5%
4 gi|119623778hCG2040478 51.1%
consensus/100%
consensus/90%
consensus/80%
consensus/70%
```

```

-----.
-----.
-----.
-----.
```

Reference sequence (1): lcl|Query_ProteinC-Transcript1and3

Identities normalised by aligned length.

Colored by: identity + property

```
1 lcl|Query_ProteinC-Transcript1and3 100.0%
2 gi|119588514hCG2040415          17.9%
3 gi|1034610826LOC107985332      12.6%
4 gi|119612025hCG1647242          12.5%
5 gi|8272464gag                  11.2%
6 gi|119605352hCG1789547          15.2%
  consensus/100%
  consensus/90%
  consensus/80%
  consensus/70%
```

```

1 lcl|Query_ProteinC-Transcript1and3 100.0%
2 gi|119588514hCG2040415          17.9%
3 gi|1034610826LOC107985332      12.6%
4 gi|119612025hCG1647242          12.5%
5 gi|8272464gag                  11.2%
6 gi|119605352hCG1789547          15.2%
  consensus/100%
  consensus/90%
  consensus/80%
  consensus/70%

```

```

1 lcl|Query_ProteinC-Transcript1and3 100.0%
2 gi|119588514hCG2040415           17.9%
3 gi|1034610826LOC107985332       12.6%
4 gi|119612025hCG1647242          12.5%
5 gi|8272464gag                   11.2%
6 gi|119605352hCG1789547          15.2%
consensus/100%
consensus/90%
consensus/80%
consensus/70%

```

51 2 240
-----L CPLQAVGGEEH-----VPFSLSDLKQIKAE LGKFSDNPDRYIDVLQGLGQTFDLTWRDVMLL
HGSASTYTRPSGPRSGICLLPVV-SRPVGPVQVQVPFSMQLDSQVKEGLGKFSENPGKFLEGFRKLTLTFELTWKDAIL
HNTE-----L CPLQAVRGGEFGPARVPVPFSLSDLKQIKIDLGFSDNPDGYIDVLQGLGQSFDLTWRDIMLL


```

1 lcl|Query_ProteinC-Transcript1and3 100.0%
2 gi|119588514hCG2040415           17.9%
3 gi|1034610826LC0107985332       12.6%
4 gi|119612025hCG1647242          12.5%
5 gi|8272464gag                   11.2%
6 gi|119605352hCG1789547          15.2%
consensus/100%
consensus/90%
consensus/80%
consensus/70%

```

```

1 lcl|Query_ProteinC-Transcript1and3 100.0%
2 gi|119588514hCG2040415          17.9%
3 gi|1034610826LOC107985332      12.6%
4 gi|119612025hCG1647242          12.5%
5 gi|8272464gag                  11.2%
6 gi|119605352hCG1789547          15.2%
consensus/100%
consensus/90%
consensus/80%
consensus/70%

```

4 400
KTKPLNYT~~KLSMIDE~~-----VFDENPAAF~~LERL~~R~~EALV~~KHTCLSPDS~~VEGQLT~~LKD~~KF~~ITQAAPD~~LRRK~~LQKR~~ALG~~
RKMPMSYSVM~~STITQ~~-----GKEENPSAFL~~KRLW~~K~~ALRKY~~T~~SLSPNS~~VEG~~Q~~LILKD~~KF~~ITQS~~ATDIRRK~~LQKR~~VLG~~
QVKPV~~VN~~YKL~~ATIDQ~~-----GPHENPTAFL~~ERL~~Q~~ETL~~I~~KHTNL~~D~~PGSPE~~G~~QLV~~LKD~~HFT~~QAAPD~~IRRK~~L~~RLM~~ALG
KTRVSGFL~~GKGS~~L~~TPDSEL~~GPL~~GKEENPSA~~FL~~ERL~~R~~EALR~~K~~YTPL~~S~~PKSLE~~Q~~LIL~~KD~~KF~~ITQS~~TADIRRK~~LQ~~QALG~~
RKKPMNYS~~SMM~~STITQ-----GKEENPTAFL~~DRL~~R~~EALR~~K~~HTS~~L~~SPDSIE~~Q~~LIL~~KD~~KF~~ITQS~~AAIRKNF~~-----
.....MAKHFI~~SQ~~ADP~~IR~~H~~KLH~~LQIG.....htc+FloQussDlR+php.....htc+FloQussDlR+php.....
phbs_sa_hhu.lsp s.cENPsAFL~~CRL~~,cs~~lhk~~at~~s~~lSPts,EGQ~~LN~~LD+ITQ~~ASD~~+KL~~ph~~.1G
phbs_sa_hhu.lsp s.cENPsAFL~~CRL~~,cs~~lhk~~at~~s~~lSPts,EGQ~~LN~~LD+ITQ~~ASD~~+KL~~ph~~.1G

```
1 lcl|Query_ProteinC-Transcript1and3 100.0%
2 gi|119588514hCG2040415          17.9%
3 gi|1034610826LCO107985332      12.6%
4 gi|119612025hCG1647242          12.5%
5 gi|8272464gag                  11.2%
6 gi|119605352hCG1789547          15.2%
consensus/100%
consensus/90%
consensus/80%
consensus/70%
```

1 PDSTLEDLLKVATLVFYNTDRE-----AQRERKRYKDTAEALMAT-----R
PEQNLEALLNLATSVFYNRYQEEQ---AEKEKRDKRKAALVMAL-----R
TRAPMSEILKFASSVFYNRDQDERDRAERKEKQKEERAQQLAAL-----QVHQPPPQCPKDTPGNCYQCGKPG
PEQNLETLLNLAFTVFYNRDQEEQ---AQKEKQDQKRKAALVMAL-----R
.....SLP
PQTQNQNLDDTMFMVYNCDLKEG----KRKQSEEKWQAKIMAAIIGDVLNARRASKENLKGHKDKASRDSCFKCKSG
.....th
.....th
spts.ptlphh.Va.Np.c...cccpc+c.tthlhAh t.....
spts.ptlphh.Va.Np.c...cccpc+c.tthlhAh t.....

```

1 lcl|Query_ProteinC-Transcript1and3 100.0%
2 gi|119588514hCG2040415          17.9%
3 gi|1034610826LOC107985332      12.6%
4 gi|119612025hCG1647242          12.5%
5 gi|8272464gag                   11.2%
6 gi|119605352hCG1789547          15.2%
consensus/100%

```


Reference sequence (1): lcl|Query_ProteinCTranscript2

Identities normalised by aligned length.

Colored by: identity + property

```
1 lcl|Query_ProteinCTranscript2 100.0%
2 gi|119588514hCG2040415      16.4%
3 gi|1034610826LOC107985332 13.8%
4 gi|119612025hCG1647242     12.3%
5 gi|8272464gag               12.4%
6 gi|119605352hCG1789547     19.6%
consensus/100%
consensus/90%
consensus/80%
consensus/70%
```

```
1 lcl|Query_ProteinCTranscript2 100.0%
2 gi|119588514hCG2040415    16.4%
3 gi|1034610826L0C107985332 13.8%
4 gi|119612025hCG1647242    12.3%
5 gi|8272464gag             12.4%
6 gi|119605352hCG1789547    19.6%
consensus/100%
consensus/90%
consensus/80%
consensus/70%
```

31 1 . . . : 1
KIPYVQAFFSLKENTKLCKACNLYPTGGPLSLLPYPSLPI-APLPINDKTPLISPAQKATSKEISKGPQKPLGYQLCPLQ
EVPVVQTQMILRENPDFCKGCKIDP----ALLAILSRPLQRQPQGGFNDFLVNPPQPPLPETKEKEQAPPAPSSLVRTL

EVPVYQTFFSLRDNSQLCKKCGLCPTGSPQSPPPYPSPVPPPTSSTNKDPLLTQTVQKEIDKGVNNEPKSANIPRLCPLQ


```
1 lcl|Query_ProteinCTranscript2 100.0%
2 gi|119588514hCG2040415      16.4%
3 gi|1034610826LOC107985332 13.8%
4 gi|119612025hCG1647242     12.3%
5 gi|8272464gag               12.4%
6 gi|119605352hCG1789547     19.6%
  consensus/100%
  consensus/90%
  consensus/80%
  consensus/70%
```

51 2 240
AVGEEH-----VPFSLSDLQIKIAELGKFSNDPDRYIDVLQGLGQTFDLTWRDVML
SLHGSASTYTRPSGPRSGICLLPVSRPGPVQVQVPSMQDLSQVKEGLGKFSENPGKFLEGFRKLTLTFELTWKDVAI
-----M
AVRGGEF-----GPARVPVPSLSDLQIKIDLGKFSNDPDGYIDVLQGLGQSFDLTWRDIMAL

1	lcl Query_ProteinCTranscript2	100.0%
2	gi 119588514hCG2040415	16.4%
3	gi 1034610826LOC107985332	13.8%
4	gi 119612025hCG1647242	12.3%
5	gi 8272464gag	12.4%
6	gi 119605352hCG1789547	19.6%
	consensus/100%	
	consensus/90%	
	consensus/80%	
	consensus/70%	

1	lcl Query_ProteinCTranscript2	100.0%
2	gi 119588514hCG2040415	16.4%
3	gi 1034610826L0C107985332	13.8%
4	gi 119612025hCG1647242	12.3%
5	gi 8272464gag	12.4%
6	gi 119605352hCG1789547	19.6%
	consensus/100%	
	consensus/90%	
	consensus/80%	
	consensus/70%	

21 CRTKTKPLNYTKL~~S~~MIDEVFDENPAAFLLREALV~~K~~H~~C~~LSPDSVEGQLTLKDKF~~I~~TQAAPDLRRKLQKR~~A~~LG~~P~~~~D~~~~S~~~~T~~~~L~~
RRIRKMPMSY~~S~~M~~S~~MTITQGKEENPSAFLKRLW~~K~~ALR~~K~~Y~~T~~SLPNS~~V~~GQL~~H~~LDK~~F~~ITQSADIRRK~~L~~QKR~~V~~LGPEQN~~L~~
KRSQVKPV~~N~~Y~~N~~KLATIDQGPHENPTAFLERLQETL~~I~~HTNLDPGS~~P~~GQLV~~L~~KDH~~F~~ITQAAPDIRRK~~L~~RMLALGTRAPMS
GKGSLTTPDSS~~E~~GPL--GKEENPSAFLERLREALRY~~T~~PLSPKS~~L~~EGQL~~L~~TKDKF~~I~~TQSADIRRK~~L~~QKQLGPEQN~~L~~
RKTRKKPM~~N~~YSMM~~S~~MTITQGKEENPTAFLDR~~L~~REALRKHTSLSPDSIEGQL~~L~~TKDKF~~I~~TQSADIRRK~~N~~FKSLP-----
-----MAKHFIQSAPDIRHK~~L~~H~~K~~Q~~I~~GPQTNQ~~N~~
.....htc+floqussDlR+php.....htc+floqussDlR+php.....
t+.phhs.s.s.hu.1..s.cenPSAFLcRL.csLhKaTsLsPtS.EGQL~~H~~LD~~F~~+ITQ~~U~~ASDTR+K~~L~~pphs1G~~s~~ts.p
t+.phhs.s.s.hu.1..s.cenPSAFLcRL.csLhKaTsLsPtS.EGQL~~H~~LD~~F~~+ITQ~~U~~ASDTR+L~~n~~phhs1G~~s~~ts.p

```
1 lcl|Query_ProteinCTranscript2 100.0%
2 gi|119588514hCG2040415      16.4%
3 gi|1034610826LOC107985332  13.8%
4 gi|119612025hCG1647242      12.3%
5 gi|8272464gag                12.4%
6 gi|119605352hCG1789547      19.6%
  consensus/100%
  consensus/90%
  consensus/80%
  consensus/70%
```

91 DLLKVALVYNTDLWEESDCRFPQNDAPISRQLRPVIIHIRTAVRCTSSDRGGDIEEGQGSAGKG--RANSLAKA--
ALLNLATSVFYNRYQEEQAE-----KEKRDQRKAALVMAVLRTQTNLGG--
EILKFASSVFYNRDQDERDR-----AERKEKQKEERAQQLLAQLVHQPPPGCPKDTFPGN-CYQCG-KPGHWIKANCP
TLLNLATFVFYNRDQEEQAQ-----KEKQDQRKAALVMAVLRTQTNIDGSERTETEQANHLEGLLIKDGEPIEH--

QLLDTMFMVYNNCDLKEGKR--KQSEEWKQAKIMAAIGDVLNARRASKENLKGHKDKASRDSCFKCK-KSGHWAKGYT

t1lphn..Va.Np..Etpp.....ptK..t.h.htmh.Ahp..pp.s.....
t1lphb..Va..Nn..Etpp.....ptK..t.h.htmh.Ahp..pp.s.....

```
1 lcl|Query_ProteinCTranscript2 100.0%
2 gi|119588514hCG20040415    16.4%
3 gi|1034610826LOC107985332 13.8%
4 gi|119612025hCG1647242    12.3%
```

81 :

-PPLGLCPQT*-

YGPGRGEKPC^TTACPLCRKLRYWKENCPESQKG^P

-DCO^TTTV^TYATRDDL^LEVPLTNRDLNIYT^DGSSV^VENGTRAGYATVSDVTI^TESKPLVRGTS^AQ^LAELV^T

