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VP1	1	MAPKRKSGVSKCETKCTKACPRPAPVPKLLIKGGMEVLDLVTGPDSVTEIEAFLNPRMQ	60
VP1-S1	1	MAPKRKSGVSKCETKCTKACPRPAPVPKLLIKGGMEVLDLVTGPDSVTEIEAFLNPRMQ	60
VP1-S4	1	MAPKRKSGVSKCETKCTKACPRPAPVPKLLIKGGMEVLDLVTGPDSVTEIEAFLNPRMQ	60
VP1-S3	1	MAPKRKSGVSKCETKCTKACPRPAPVPKLLIKGGMEVLDLVTGPDSVTEIEAFLNPRMQ	60
VP1-S1-S3-S4	1	MAPKRKSGVSKCETKCTKACPRPAPVPKLLIKGGMEVLDLVTGPDSVTEIEAFLNPRMQ	60

VP1	61	PPTPESLTEGGQYYGWSRGINLATS-D-EDSPGNNTLPTWSMAKLQLPMLNEDLTCDTLQ	119
VP1-S1	61	PPTPESLTEGGQYYGWSRGINLATSAGTEDSPGNNTLPTWSMAKLQLPMLNEDLTCDTLQ	120
VP1-S4	61	PPTPESLTEGGQYYGWSRGINLATS-D-EDSPGNNTLPTWSMAKLQLPMLNEDLTCDTLQ	119
VP1-S3	61	PPTPESLTEGGQYYGWSRGINLATS-D-EDSPGNNTLPTWSMAKLQLPMLNEDLTCDTLQ	119
VP1-S1-S3-S4	61	PPTPESLTEGGQYYGWSRGINLATSAGTEDSPGNNTLPTWSMAKLQLPMLNEDLTCDTLQ	120

VP1	120	MWEAVSVKTEVVVSGSLLDVHGFNKPTDTVNTKGISTPVEGSQYHVFVAVGGEPLDLQGLV	179
VP1-S1	121	MWEAVSVKTEVVVSGSLLDVHGFNKPTDTVNTKGISTPVEGSQYHVFVAVGGEPLDLQGLV	180
VP1-S4	120	MWEAVSVKTEVVVSGSLLDVHGFNKPTDTVNTKGISTPVEGSQYHVFVAVGGEPLDLQGLV	179
VP1-S3	120	MWEAVSVKTEVVVSGSLLDVHGFNKPTDTVNTKGISTPVEGSQYHVFVAVGGEPLDLQGLV	179
VP1-S1-S3-S4	121	MWEAVSVKTEVVVSGSLLDVHGFNKPTDTVNTKGISTPVEGSQYHVFVAVGGEPLDLQGLV	180

VP1	180	TDARTKYKEEGVVTIKTITKKDMVNKDQVLNPIKAKLDKDGMPVEIWHDPKAKNENTR	239
VP1-S1	181	TDARTKYKEEGVVTIKTITKKDMVNKDQVLNPIKAKLDKDGMPVEIWHDPKAKNENTR	240
VP1-S4	180	TDARTKYKEEGVVTIKTITKKDMVNKDQVLNPIKAKLDKDGMPVEIWHDPKAKNENTR	239
VP1-S3	180	TDARTKYKEEGVVTIKTITKKDMVNKDQVLNPIKAKLDKDGMPVEIWHDPKAKNENTR	239
VP1-S1-S3-S4	181	TDARTKYKEEGVVTIKTITKKDMVNKDQVLNPIKAKLDKDGMPVEIWHDPKAKNENTR	240

VP1	240	YFGNYTGGTT-TPPVLQFTNTLTTLVLLDENGVGPLCKGEGLYLSCVDIMGWRVTR-NYDV	297
VP1-S1	241	YFGNYTGGTT-TPPVLQFTNTLTTLVLLDENGVGPLCKGEGLYLSCVDIMGWRVTR-NYDV	298
VP1-S4	240	YFGNYTGGTT-TPPVLQFTNTLTTLVLLDENGVGPLCKGEGLYLSCVDIMGWRVTR-NYDV	298
VP1-S3	240	YFGNYTGGTHVTPPVLQFTNTLTTLVLLDENGVGPLCKGEGLYLSCVDIMGWRVTR-NYDV	298
VP1-S1-S3-S4	241	YFGNYTGGTHVTPPVLQFTNTLTTLVLLDENGVGPLCKGEGLYLSCVDIMGWRVTR-NYDV	300

VP1	298	HHWRGLPRYFKITLRKRWVKNPYPMASLISSLFNNMLPQVQGQPMEGENTQVEEVRVYDG	357
VP1-S1	299	HHWRGLPRYFKITLRKRWVKNPYPMASLISSLFNNMLPQVQGQPMEGENTQVEEVRVYDG	358
VP1-S4	299	HHWRGLPRYFKITLRKRWVKNPYPMASLISSLFNNMLPQVQGQPMEGENTQVEEVRVYDG	358
VP1-S3	299	HHWRGLPRYFKITLRKRWVKNPYPMASLISSLFNNMLPQVQGQPMEGENTQVEEVRVYDG	358
VP1-S1-S3-S4	301	HHWRGLPRYFKITLRKRWVKNPYPMASLISSLFNNMLPQVQGQPMEGENTQVEEVRVYDG	360

VP1	358	TEPVPGDPDMTRYVDRFGKTKTVFPGN	384
VP1-S1	359	TEPVPGDPDMTRYVDRFGKTKTVFPGN	385
VP1-S4	359	TEPVPGDPDMTRYVDRFGKTKTVFPGN	385
VP1-S3	359	TEPVPGDPDMTRYVDRFGKTKTVFPGN	385
VP1-S1-S3-S4	361	TEPVPGDPDMTRYVDRFGKTKTVFPGN	387

FIGURE 1

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VP1-S1 1 MAPKRKSGVSKCETKCTKACPRPAPVPKLLIKGGMEVLDLVTGPDSVTEIEAFLNPRMGQ 60
 VP1-S1B 1 MAPKRKSGVSKCETKCTKACPRPAPVPKLLIKGGMEVLDLVTGPDSVTEIEAFLNPRMGQ 60
 VP1-S1A 1 MAPKRKSGVSKCETKCTKACPRPAPVPKLLIKGGMEVLDLVTGPDSVTEIEAFLNPRMGQ 60
 VP1-S1M2e 1 MAPKRKSGVSKCETKCTKACPRPAPVPKLLIKGGMEVLDLVTGPDSVTEIEAFLNPRMGQ 60
 VP1-S1hM2e 1 MAPKRKSGVSKCETKCTKACPRPAPVPKLLIKGGMEVLDLVTGPDSVTEIEAFLNPRMGQ 60

VP1-S1 61 PPTPESLTEGGQYYGWSRGINLATSA-----GTEDSPGNNTL 97
 VP1-S1B 61 PPTPESLTEGGQYYGWSRGINLATSA~~PNDAAEQTKL~~---YQ---NPTTYGTEDSPGNNTL 114
 VP1-S1A 61 PPTPESLTEGGQYYGWSRGINLATSA~~PYNGKSS~~-----GTEDSPGNNTL 104
 VP1-S1M2e 61 PPTPESLTEGGQYYGWSRGINLATSA~~SLLTEVETPTRNEWECRCSDSSD~~GTEDSPGNNTL 120
 VP1-S1hM2e 61 PPTPESLTEGGQYYGWSRGINLATSA~~SLLTEVETPIRNEWGCRCNDSSD~~GTEDSPGNNTL 120

VP1-S1 98 PTWSMAKLQLPMLNEDLTCDTLQMW~~EAVSVKTEVVGSGSLLDVHGFNKP~~DTVNTKGIST 157
 VP1-S1B 115 PTWSMAKLQLPMLNEDLTCDTLQMW~~EAVSVKTEVVGSGSLLDVHGFNKP~~DTVNTKGIST 174
 VP1-S1A 105 PTWSMAKLQLPMLNEDLTCDTLQMW~~EAVSVKTEVVGSGSLLDVHGFNKP~~DTVNTKGIST 164
 VP1-S1M2e 121 PTWSMAKLQLPMLNEDLTCDTLQMW~~EAVSVKTEVVGSGSLLDVHGFNKP~~DTVNTKGIST 180
 VP1-S1hM2e 121 PTWSMAKLQLPMLNEDLTCDTLQMW~~EAVSVKTEVVGSGSLLDVHGFNKP~~DTVNTKGIST 180

VP1-S1 158 PVEGSQYHVFAVGGEPLDLQGLVTDARTKYKEEGVVTIKTITKKDMVNKDQVLNPI~~SKAK~~ 217
 VP1-S1B 175 PVEGSQYHVFAVGGEPLDLQGLVTDARTKYKEEGVVTIKTITKKDMVNKDQVLNPI~~SKAK~~ 234
 VP1-S1A 165 PVEGSQYHVFAVGGEPLDLQGLVTDARTKYKEEGVVTIKTITKKDMVNKDQVLNPI~~SKAK~~ 224
 VP1-S1M2e 181 PVEGSQYHVFAVGGEPLDLQGLVTDARTKYKEEGVVTIKTITKKDMVNKDQVLNPI~~SKAK~~ 240
 VP1-S1hM2e 181 PVEGSQYHVFAVGGEPLDLQGLVTDARTKYKEEGVVTIKTITKKDMVNKDQVLNPI~~SKAK~~ 240

VP1-S1 218 LDKDGMYPVEIWHDP~~PAKNENTRYFGNYTGGTTT~~PPVLQFTNTLT~~TVLLDENG~~VGPLCKG 277
 VP1-S1B 235 LDKDGMYPVEIWHDP~~PAKNENTRYFGNYTGGTTT~~PPVLQFTNTLT~~TVLLDENG~~VGPLCKG 294
 VP1-S1A 225 LDKDGMYPVEIWHDP~~PAKNENTRYFGNYTGGTTT~~PPVLQFTNTLT~~TVLLDENG~~VGPLCKG 284
 VP1-S1M2e 241 LDKDGMYPVEIWHDP~~PAKNENTRYFGNYTGGTTT~~PPVLQFTNTLT~~TVLLDENG~~VGPLCKG 300
 VP1-S1hM2e 241 LDKDGMYPVEIWHDP~~PAKNENTRYFGNYTGGTTT~~PPVLQFTNTLT~~TVLLDENG~~VGPLCKG 300

VP1-S1 278 EGLYLSCVDIMGWRVTRNYDVHHWRGLPRYFKITLRKR~~WVKNPYPMASLISSLFN~~NMLPQ 337
 VP1-S1B 295 EGLYLSCVDIMGWRVTRNYDVHHWRGLPRYFKITLRKR~~WVKNPYPMASLISSLFN~~NMLPQ 354
 VP1-S1A 285 EGLYLSCVDIMGWRVTRNYDVHHWRGLPRYFKITLRKR~~WVKNPYPMASLISSLFN~~NMLPQ 344
 VP1-S1M2e 301 EGLYLSCVDIMGWRVTRNYDVHHWRGLPRYFKITLRKR~~WVKNPYPMASLISSLFN~~NMLPQ 360
 VP1-S1hM2e 301 EGLYLSCVDIMGWRVTRNYDVHHWRGLPRYFKITLRKR~~WVKNPYPMASLISSLFN~~NMLPQ 360

VP1-S1 338 VQGQPMEGENTQVEEV~~RVYD~~GTEPVPGDPDMTRYVDRFGKTKTVFPGN 385
 VP1-S1B 355 VQGQPMEGENTQVEEV~~RVYD~~GTEPVPGDPDMTRYVDRFGKTKTVFPGN 402
 VP1-S1A 345 VQGQPMEGENTQVEEV~~RVYD~~GTEPVPGDPDMTRYVDRFGKTKTVFPGN 392
 VP1-S1M2e 361 VQGQPMEGENTQVEEV~~RVYD~~GTEPVPGDPDMTRYVDRFGKTKTVFPGN 408
 VP1-S1hM2e 361 VQGQPMEGENTQVEEV~~RVYD~~GTEPVPGDPDMTRYVDRFGKTKTVFPGN 408

FIGURE 2

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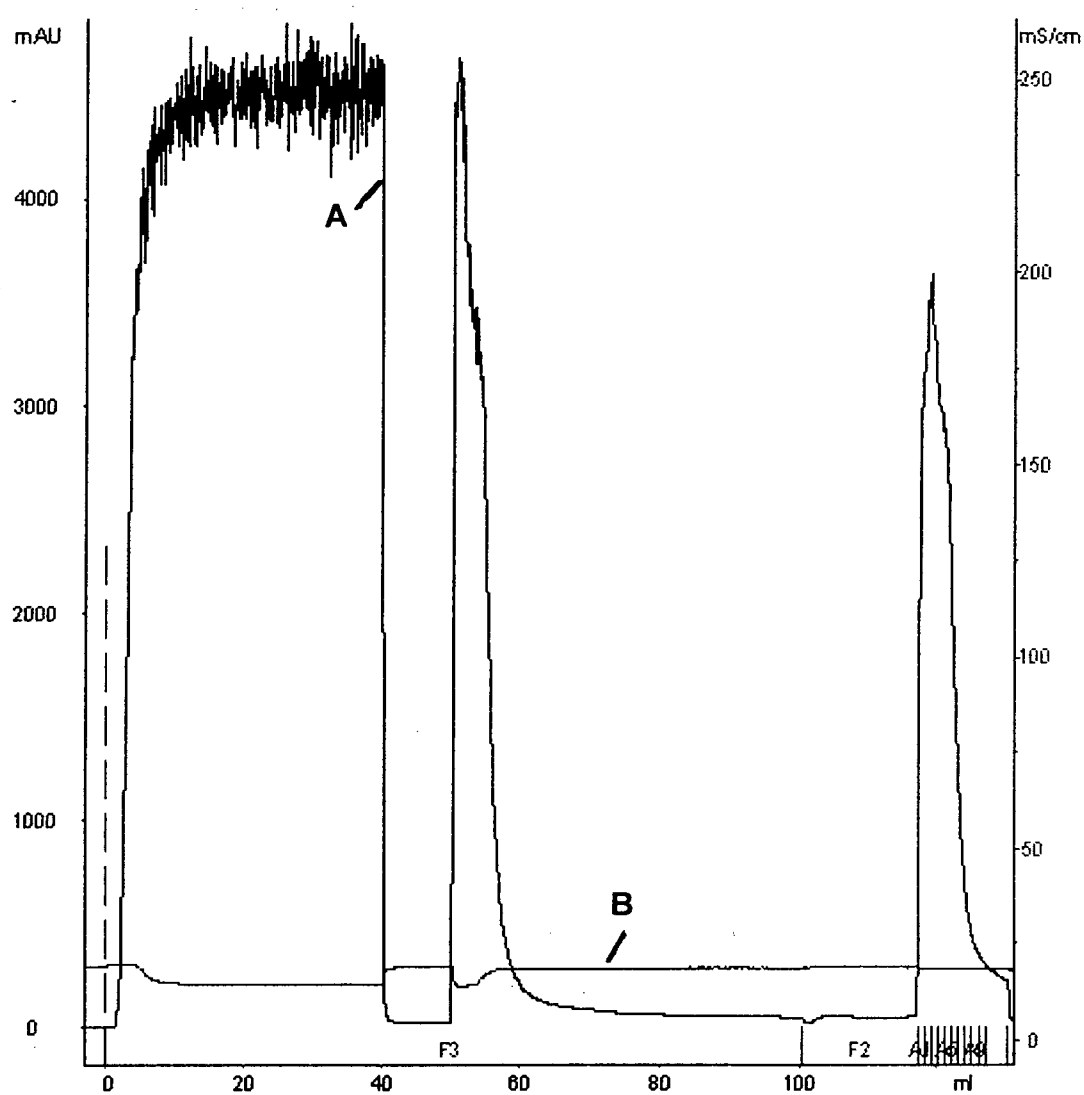


FIGURE 3

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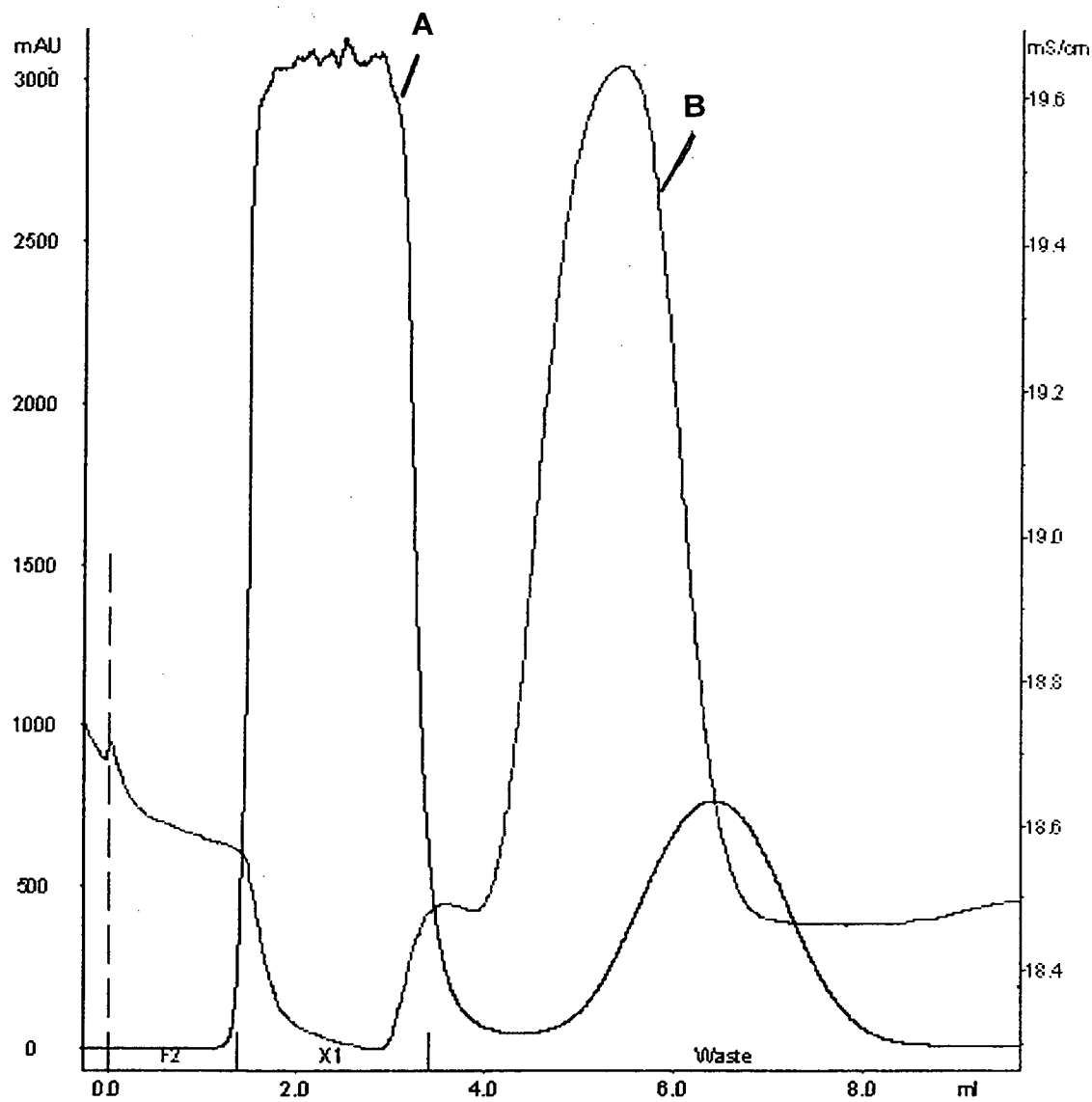


FIGURE 4

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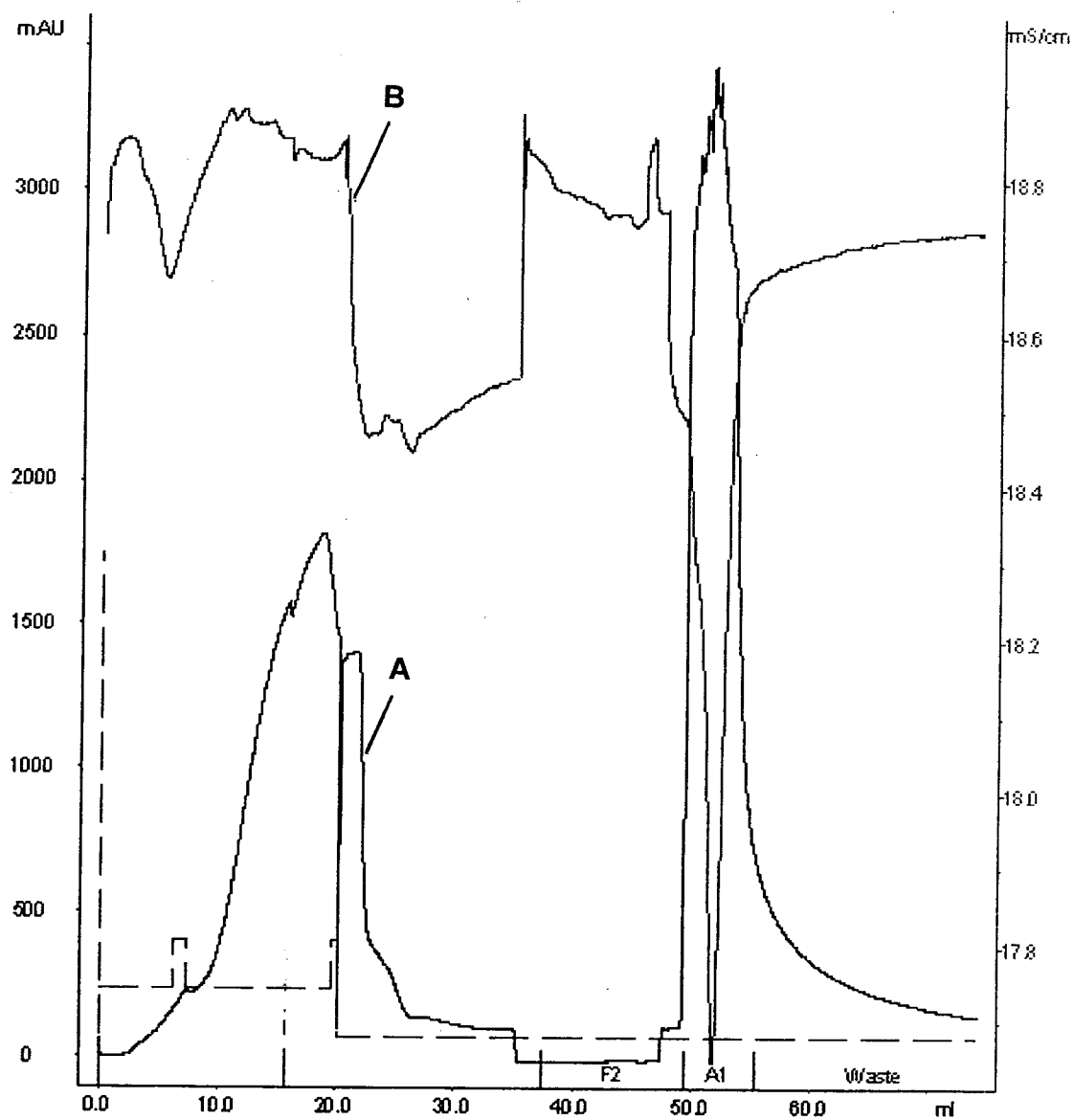


FIGURE 5

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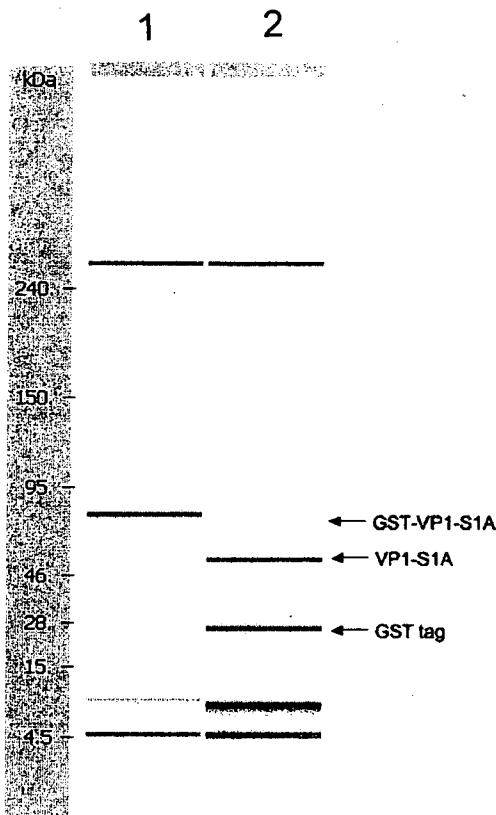


FIGURE 6

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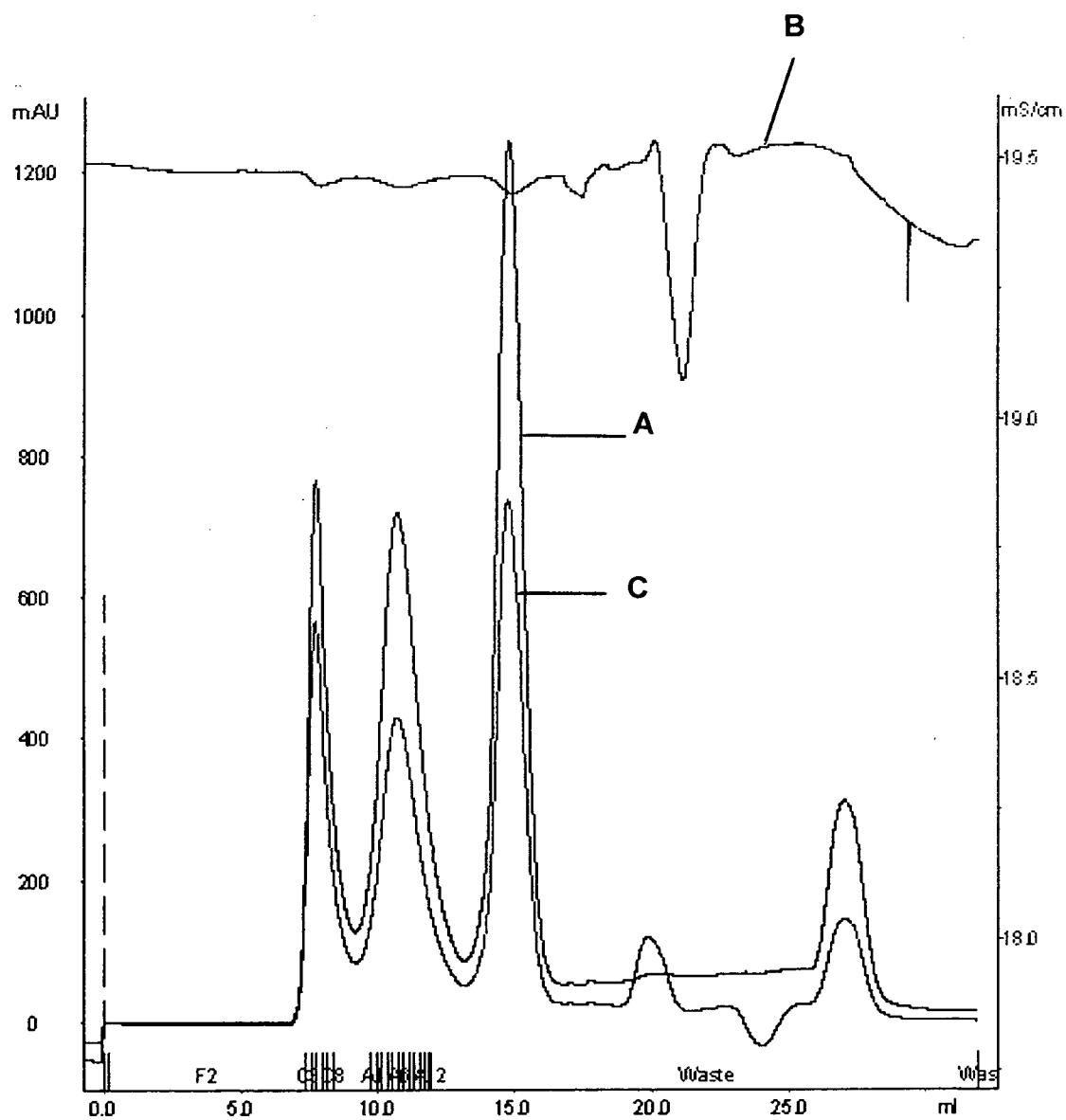


FIGURE 7

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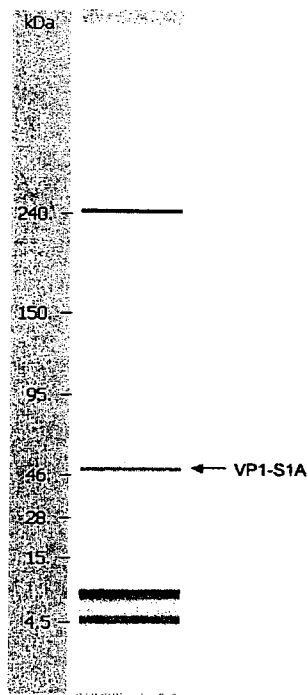


FIGURE 8

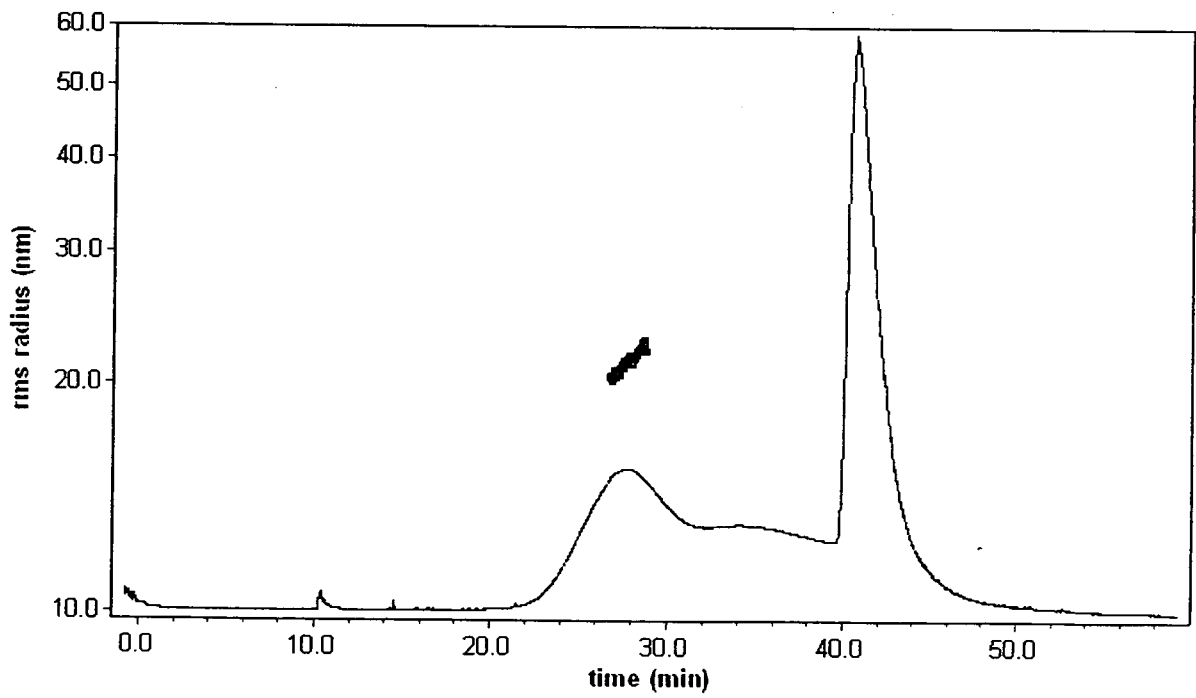


FIGURE 9

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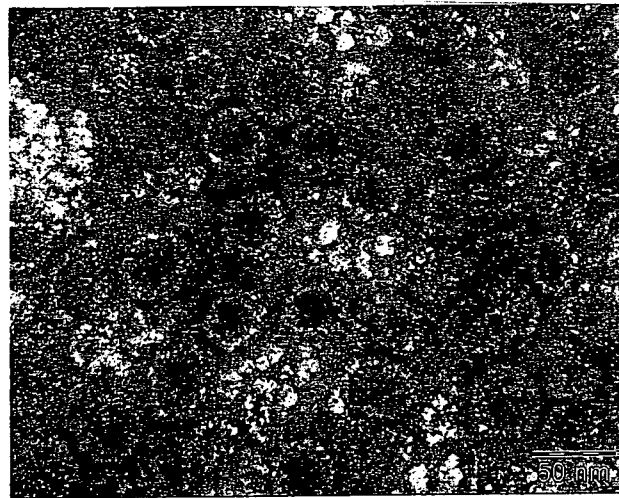


FIGURE 10

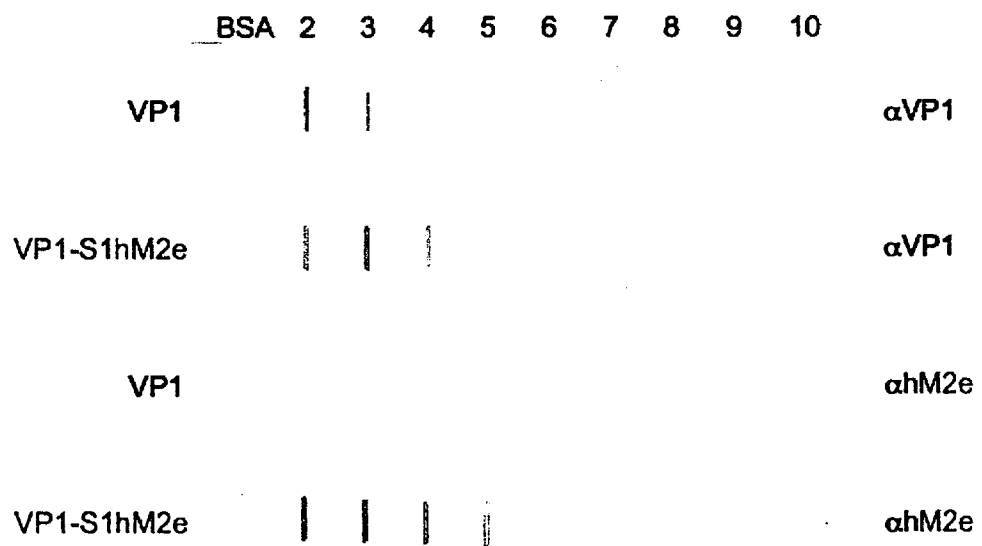


FIGURE 11

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DQ343152	1	MERIVLLLAIVSLVKSQDQICIGYHANNSTEQADT	IMEKNVTVTHAQNILEKTHNGKLCDDL	DGVKPLILRDCSVAGWLLGNPWCDEF	INVPEWSYIVEKAN	100
DQ343151	1	MEGTVLLLAIVSLVKSQDQICIGYHANNSTEQDVT	IMEKNVTVTHAQDILEKTHNGKLCDDL	DGVKPLILRDCSVAGWLLGNPWCDEF	INVPEWSYIVEKAS	100
DQ343150	1	MERIVLLLAIVSLVKSQDQICIGYHANNSTEQDVT	IMEKNVTVTHAQDILEKTHNGKLCNPDGVKPLILRDCSVAGWLLGNPWCDEF	INVPEWSYIVEKAS	100	
DQ323672	1	MERIVLLLAIVSLVKSQDQICIGYHANNSTEQDVT	IMEKNVTVTHAQDILEKTHNGKLCDDL	DGVKPLILRDCSVAGWLLGNPWCDEF	INVPEWSYIVEKIN	100
DQ323685	1	MERIVLLFAIVSLVKSQDQICIGYHANNSTEQDVT	IMEKNVTVTHAQDILEKTHNGKLCDDL	DGVKPLILRDCSVAGWLLGNPWCDEF	INVPEWSYIVEKAN	100
DQ3236077	1	MERIVLLFAIVSLVKSQDQICIGYHANNSTEQDVT	IMEKNVTVTHAQDILEKTHNGKLCDDL	DGVKPLILRDCSVAGWLLGNPWCDEF	INVPEWSYIVEKAN	100
DQ3211925	1	MERIVLLLAIVSLVKSQDQICIGYHANNSTEQDVT	IMEKNVTVTHAQNILEKTHNGKLCDDL	DGVKPLILRDCSVAGWLLGNPWCDEF	INVPEWSYIVEKAN	100
DQ3182483	1	MERIVLLFAIVSLVKSQDQICIGYHANNSTEQDVT	IMEKNVTVTHAQDILEKTHNGKLCDDL	DGVKPLILRDCSVAGWLLGNPWCDEF	INVPEWSYIVEKAN	100
DQ023145	1	MERIVLLLAIVSLVKSQDQICIGYHANNSTEQDVT	IMEKNVTVTHAQDILEKTHNGKLCDL	DGVKPLILRDCSVAGWLLGNPWCDEF	INVPEWSYIVEKAS	100
AY741221	1	MERIVLLLAIVSLVKSQDQICIGYHANNSTEQDVT	IMEKNVTVTHAQDILEKTHNGKLCDDL	DGVKPLILRDCSVAGWLLGNPWCDEF	INVPEWSYIVEKAS	100
AY741219	1	MERIVLLLAIVSLVKSQDQICIGYHANNSTEQDVT	IMEKNVTVTHAQDILEKTHNGKLCDDL	DGVKPLILRDCSVAGWLLGNPWCDEF	INVPEWSYIVEKAS	100
AY741217	1	MERIVLLLAIVSLVKSQDQICIGYHANNSTEQDVT	IMEKNVTVTHAQDILEKTHNGKLCDDL	DGVKPLILRDCSVAGWLLGNPWCDEF	INVPEWSYIVEKAS	100
AY741215	1	MERIVLLRAIVSLVKSQDQICIGYHANNSTEQDVT	IMEKNVTVTHAQDILEKTHNGKLCDDL	DGVKPLILRDCSVAGWLLGNPWCDEF	INVPEWSYIVEKAS	100
AY741213	1	MERIVLLLAIVSLVKSQDQICIGYHANNSTEQDVT	IMEKNVTVTHAQDILEKTHNGKLCDDL	DGVKPLILRDCSVAGWLLGNPWCDEF	INVPEWSYIVEKAS	100
AY646175	1	MERIVLLFAIVSLVKSQDQICIGYHANNSTEQDVT	IMEKNVTVTHAQDILEKTHNGKLCDDL	DGVKPLILRDCSVAGWLLGNPWCDEF	INVPEWSYIVEKAS	100
AY646167	1	MERIVLLFAIVSLVKSQDQICIGYHANNSTEQDVT	IMEKNVTVTHAQDILEKTHNGKLCDDL	DGVKPLILRDCSVAGWLLGNPWCDEF	INVPEWSYIVEKAN	100
AY555153	1	MERIVLLFAIVSLVKSQDQICIGYHANNSTEQDVT	IMEKNVTVTHAQDILEKTHNGKLCDDL	DGVKPLILRDCSVAGWLLGNPWCDEF	INVPEWSYIVEKAN	100
AB3239125	1	MERIVLLFAIVSLVKSQDQICIGYHANNSTEQDVT	IMEKNVTVTHAQDILEKTHNGKLCDDL	DGVKPLILRDCSVAGWLLGNPWCDEF	INVPEWSYIVEKAN	100
AB3233322	1	MERIVLLLAIVSLVKSQDQICIGYHANNSTEQDVT	IMEKNVTVTHAQDILEKTHNGKLCDDL	DGVKPLILRDCSVAGWLLGNPWCDEF	INVPEWSYIVEKAN	100
AB3233321	1	MENIVLLLAIVSLVKSQDQICIGYHANNSTEQDVT	IMEKNVTVTHAQDILEKTHNGKLCDDL	DGVKPLILRDCSVAGWLLGNPWCDEF	INVPEWSYIVEKIN	100
AB3233320	1	MERIVLLLAIVSLVKSQDQICIGYHANNSTEQDVT	IMEKNVTVTHAQDILEKTHNGKLCDDL	DGVKPLILRDCSVAGWLLGNPWCDEF	INVPEWSYIVEKIN	100
AB3233319	1	MERIVLLLAIVSLVKSQDQICIGYHANNSTEQDVT	IMEKNVTVTHAQDILEKTHNGKLCDDL	DGVKPLILRDCSVAGWLLGNPWCDEF	INVPEWSYIVEKIN	100
AB3212649	1	MERIVLLLAIVSLVKSQDQICIGYHANNSTEQDVT	IMEKNVTVTHAQDILEKTHNGKLCDDL	DGVKPLILRDCSVAGWLLGNPWCDEF	INVPEWSYIVEKAN	100

FIGURE 12 (1 OF 5)

[illegible]

FIGURE 12 (2 OF 5)

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DQ343152 201 AEQTKLYQNPTTTL SVGTSTLNQRLVPKIA TRSKVNGQSGRMEFFWTTILKPNDAINFESNGNFIAP EYAYKIVKKGDSAIMKSELEYGNCN TKCQTPMGA 300
DQ343151 201 AEQIKLYQNPTTTL SVGTSTLNQRLVPKIA TRSKVNGQSGRMEFFWTTILKPNDAINFESNGNFIAP EYAYKIVKKGDSAIMKSELEYGNCN TKCQTPMGA 300
DQ343150 201 AEQIKLYQNPTTTL SVGTSTLNQRLVPKIA TRSKVNGQSGRMEFFWTTILKPNDAINFESNGNFIAP EYAYKIVKKGDSAIMKSELEYGNCN TKCQTPMGA 300
DQ323672 201 AEQTRLYQNPTTTL SVGTSTLNQRLVPKIA TRSKVNGQSGRMEFFWTTILKPNDAINFESNGNFIAP EYAYKIVKKGDSAIMKSELEYGNCN TKCQTPMGA 300
DQ2336085 201 AEQTKLYQNPTTTL SVGTSTLNQRLVPKIA TRSKVNGQSGRMEFFWTTILKPNDAINFESNGNFIAP EYAYKIVKKGDSAIMKSELEYGNCN TKCQTPMGA 300
DQ2336077 201 AEQTKLYQNPTTTL SVGTSTLNQRLVPKIA TRSKVNGQSGRMEFFWTTILKPNDAINFESNGNFIAP EYAYKIVKKGDSAIMKSELEYGNCN TKCQTPMGA 300
DQ211925 201 AEQTRLYQNPTTTL SVGTSTLNQRLVPKIA TRSKVNGQSGRMEFFWTTILKPNDAINFESNGNFIAP EYAYKIVKKGDSAIMKSELEYGNCN TKCQTPMGA 300
DQ182483 201 AEQTKLYQNPTTTL SVGTSTLNQRLVPKIA TRSKVNGQSGRMEFFWTTILKPNDAINFESNGNFIAP EYAYKIVKKGDSAIMKSELEYGNCN TKCQTPMGA 300
DQ023145 201 AEQTKLYQNPTTTL SVGTSTLNQRLVPKIA TRSKVNGQSGRMEFFWTTILKPNDAINFESNGNFIAP EYAYKIVKKGDSAIMKSELEYGNCN TKCQTPMGA 300
AY741221 201 AEQTKLYQNPTTTL SVGTSTLNQRLVPKIA TRSKVNGQSGRMEFFWTTILKPNDAINFESNGNFIAP EYAYKIVKKGDSAIMKSELEYGNCN TKCQTPMGA 300
AY741219 201 AEQIKLYQNPTTTL SVGTSTLNQRLVPKIA TRSKVNGQSGRMEFFWTTILKPNDAINFESNGNFIAP EYAYKIVKKGDSAIMKSELEYGNCN TKCQTPMGA 300
AY741217 201 AEQIKLYQNPTTTL SVGTSTLNQRLVPKIA TRSKVNGQSGRMEFFWTTILKPNDAINFESNGNFIAP EYAYKIVKKGDSAIMKSELEYGNCN TKCQTPMGA 300
AY741215 201 AEQIKLYQNPTTTL SVGTSTLNQRLVPKIA TRSKVNGQSGRMEFFWTTILKPNDAINFESNGNFIAP EYAYKIVKKGDSAIMKSELEYGNCN TKCQTPMGA 300
AY741213 201 AEQTKLYQNPTTTL SVGTSTLNQRLVPKIA TRSKVNGQSGRMEFFWTTILKPNDAINFESNGNFIAP EYAYKIVKKGDSAIMKSELEYGNCN TKCQTPMGA 300
AY646175 201 AEQTKLYQNPTTTL SVGTSTLNQRLVPKIA TRSKVNGQSGRMEFFWTTILKPNDAINFESNGNFIAP EYAYKIVKKGDSAIMKSELEYGNCN TKCQTPMGA 300
AY646167 201 AEQTKLYQNPTTTL SVGTSTLNQRLVPKIA TRSKVNGQSGRMEFFWTTILKPNDAINFESNGNFIAP EYAYKIVKKGDSAIMKSELEYGNCN TKCQTPMGA 300
AY555153 201 AEQTKLYQNPTTTL SVGTSTLNQRLVPKIA TRSKVNGQSGRMEFFWTTILKPNDAINFESNGNFIAP EYAYKIVKKGDSAIMKSELEYGNCN TKCQTPMGA 300
AB239125 201 AEQTKLYQNPTTTL SVGTSTLNQRLVPKIA TRSKVNGQSGRMEFFWTTILKPNDAINFESNGNFIAP EYAYKIVKKGDSAIMKSELEYGNCN TKCQTPMGA 300
AB233322 201 AEQTRLYQNPTTTL SVGTSTLNQRLVPKIA TRSKVNGQSGRMEFFWTTILKPNDAINFESNGNFIAP EYAYKIVKKGDSAIMKSELEYGNCN TKCQTPMGA 300
AB233321 201 AEQTRLYQNPTTTL SVGTSTLNQRLVPKIA TRSKVNGQSGRMEFFWTTILKPNDAINFESNGNFIAP EYAYKIVKKGDSAIMKSELEYGNCN TKCQTPMGA 300
AB233320 201 AEQTRLYQNPTTTL SVGTSTLNQRLVPKIA TRSKVNGQSGRMEFFWTTILKPNDAINFESNGNFIAP EYAYKIVKKGDSAIMKSELEYGNCN TKCQTPMGA 300
AB233319 201 AEQTRLYQNPTTTL SVGTSTLNQRLVPKIA TRSKVNGQSGRMEFFWTTILKPNDAINFESNGNFIAP EYAYKIVKKGDSAIMKSELEYGNCN TKCQTPMGA 300
AB212649 201 AEQTRLYQNPTTTL SVGTSTLNQRLVPKIA TRSKVNGQSGRMEFFWTTILKPNDAINFESNGNFIAP EYAYKIVKKGDSAIMKSELEYGNCN TKCQTPMGA 300

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FIGURE 12 (3 OF 5)

DQ343152 501 GTDYPRYSEEARLNREEISGVKLESMGTYYQILSIYSTVASSILALAINVAGLSLWMCNNGSLQCRICI 568
DQ343151 501 GTDYPOYSEEARLNREEISGVKLESMGTYYQILSIYSTVSSILALAINVAGLSLWMCNNGSLQCRICI 568
DQ343150 501 GTDYPOYSEEARLNREEISGVKLESMGTYYQILSIYSTVASSILALAINVAGLSLWMCNNGSLQCRICI 568
DQ323672 501 GTDYPOYSEEARLNREEISGVKLESMGTYYQILSIYSTVASSILALAINVAGLSLWMCNNGSLQCRICI 568
DQ236085 501 GTDYPOYSEEARLNREEISGVKLESMGTYYQILSIYSTVASSILALAINVAGLSLWMCNNGSLQCRICI 568
DQ236077 501 GTDYPOYSEEARLNREEISGVKLESMGTYYQILSIYSTVASSILALAINVAGLSLWMCNNGSLQCRICI 568
DQ211925 501 GTDYPRYSEEARLNREEISGVKLESMGTYYQILSIYSTVASSILALAINVAGLSLWMCNNGSLQCRICI 568
DQ182483 501 GTDYPOYSEEARLNREEISGVKLESMGTYYQILSIYSTVASSILALAINVAGLSLWMCNNGSLQCRICI 568
DQ023145 501 GTDYPOYSEEARLNREEISGVKLESMGTYYQILSIYSTVASSILALAINVAGLSLWMCNNGSLQCRICI 568
AY741221 501 GTDYPOYSEEARLNREEISGVKLESMGTYYQILSIYSTVSSILALAINVAGLSLWMCNNGSLQCRICI 568
AY741219 501 GTDYPOYSEEARLNREEISGVKLESMGTYYQILSIYSTVSSILALAINVAGLSLWMCNNGSLQCRICI 568
AY741217 501 GTDYRLDSEEARLNREEISGVKLESMGTYYQILSIYSTVASSILALAINVAGLSLWMCNNGSLQCRICI 568
AY741215 501 GTDYPOYSEEARLNREEISGVKLESMGTYYQILSIYSTVASSILALAINVAGLSLWMCNNGSLQCRICI 568
AY741213 501 GTDYPOYSEEARLNREEISGVKLESMGTYYQILSIYSTVASSILALAINVAGLSLWMCNNGSLQCRICI 568
AY646175 501 GTDYPOYSEEARLNREEISGVKLESMGTYYQILSIYSTVASSILALAINVAGLSLWMCNNGSLQCRICI 568
AY646167 501 GTDYPOYSEEARLNREEISGVKLESMGTYYQILSIYSTVASSILALAINVAGLSLWMCNNGSLQCRICI 568
AY555153 501 GTDYPOYSEEARLNREEISGVKLESMGTYYQILSIYSTVASSILALAINVAGLSLWMCNNGSLQCRICI 568
AB239125 500 GTDYPOYSEEARLNREEISGVKLESMGTYYQILSIYSTVASSILALAINVAGLSLWMCNNGSLQCRICI 567
AB233322 501 GTDYPOYSEEARLNREEISGVKLESMGTYYQILSIYSTVASSILALAINVAGLSLWMCNNGSLQCRICI 568
AB233321 501 GTDYPOYSEEARLNREEISGVKLESMGTYYQILSIYSTVASSILALAINVAGLSLWMCNNGSLQCRICI 568
AB233320 501 GTDYPOYSEEARLNREEISGVKLESMGTYYQILSIYSTVASSILALAINVAGLSLWMCNNGSLQCRICI 568
AB233319 501 GTDYPOYSEEARLNREEISGVKLESMGTYYQILSIYSTVASSILALAINVAGLSLWMCNNGSLQCRICI 568
AB212649 500 GTDYPOYSEEARLNREEISGVKLESMGTYYQILSIYSTVASSILALAINVAGLSLWMCNNGSLQCRICI 567
**** .***. * ***** * ***** *****

FIGURE 12 (5 OF 5)

[illegible]

U97740	101	DLFVERSKAYSNCPYDVPDYASIRSLVAS	SGTILEF	INEDFNMTGVAQSGESVAC	KRGVS	KFSF	SRLNWLH	HESEYKY	PALNVT	MPNNG	KFD	KLYI	WGVH	200
P03437	101	DLFVERSKAFSNCPYDVPDYASIRSLVAS	SGTILEF	ITEGFTWGTQNGGNA	KRGPG	SQSF	SRLNWL	TKSGSTY	PVLNVT	MPNND	NDF	KLYI	WGIH	200
J02132	101	DLFVERSKAFSNCPYDVPDYASIRSLVAS	SGTILEF	ITEGFTWGTQNGGNA	KRGPG	SQSF	SRLNWL	TKSESTY	PVLNVT	MPNND	NDF	KLYI	WGVH	200
J02090	101	DLFVERSKAFSNCPYDVPDYASIRSLVAS	SGTILEF	ITEGFTWGTQNGGNA	KRGPG	SQSF	SRLNWL	TKSGSTY	PVLNVT	MPNND	NDF	KLYI	WGIH	200
	101	DLFVERSKAFSNCPYDVPDYASIRSLVAS	SGTILEF	ISBGTWGTQNGGNA	KRGPD	SQSF	SRLNWL	TKSGSTY	PVLNVT	MPNND	NDF	KLYI	WGVH	200
DQ508929	101	DLFVERSKAYSNCPYDVPDYASIRSLVAS	SGTILEF	INESFNMTGVAQGTISAC	KRNSK	SQSF	SRLNWL	HQLKYKY	PALNVT	MPNNE	KFD	KLYI	WGVH	200
DQ508865	101	DLFVERSKAYSNCPYDVPDYASIRSLVAS	SGTILEF	INEGFNMTGVTQSGGYX	KRGVS	NSFF	SRLNWL	YSEYKY	PALNVT	MPNNG	KFD	KLYI	WGVH	200
DQ508849	101	DLFIERSKAFSNCPYDVPDYASIRSLVAS	SGTILEF	INEGFNMTGVTQSGGYX	KRGVS	NSFF	SRLNWL	YSEYKY	PALNVT	MPNNG	KFD	KLYI	WGVH	200
DQ508833	101	DLFVERSKAYSNCPYDVPDYASIRSLVAS	SGTILEF	INEDFNMTGVAQSGESVAC	KRGVS	KFSF	SRLNWL	HESEYKY	PALNVT	MPNNG	KFD	KLYI	WGVH	200
DQ508825	101	DLFVERSKAYSNCPYDVPDYASIRSLVAS	SGTILEF	INEDFNMTGVAQGTISAC	KRGVS	KFSF	SRLNWL	HELGYYKY	PALNVT	MPNND	NDF	KLYI	WGVH	200
AY779254	101	DLFVERSTAYSNCPYDVPDYASIRSLVAS	SGTILEF	INEGFNMTGVTQSGGYX	KRGVS	NSFF	SRLNWL	HELGYYKY	PALNVT	MPNND	NDF	KLYI	WGVH	200
AY779253	101	DLFVERSTAYSNCPYDVPDYASIRSLVAS	SGTILEF	ITQESFNMTGVAQGTISAC	KRGVS	KFSF	SRLNWL	HELGYYKY	PALNVT	MPNND	NDF	KLYI	WGVH	200
AB019356	101	DLFVERSKAYSNCPYDVPDYASIRSLVAS	SGTILEF	INESFNMTGVAQNGTIVAC	KRISI	KFSF	SRLNWL	HQLKYKY	PALNVT	MPNND	NDF	KLYI	WGVH	200
AB019354	101	DLFVERSKAYSNCPYDVPDYASIRSLVAS	SGTILEF	INEGFNMTGVAQDGKSVAC	KRGVS	NSFF	SRLNWL	HKLEYKY	PALNVT	MPNND	NDF	KLYI	WGVH	200
AAA43099	101	DLFVERSKAFSNCPYDVPDYASIRSLVAS	SGTILEF	ISBGTWGTQNGGNA	KRGPD	SQSF	SRLNWL	TKSGSTY	PVLNVT	MPNND	NDF	KLYI	WGVH	200
		***	****	*	*****	*****	*	*****	*	*****	*	*****	*	

FIGURE 13 (1 OF 3)

U97740	201	PSTDRQTKLYVRASGRVT	VSTKRSQQT	VPNIGSRP	PWVRLSSR	IS	SIYWTIV	KPGDILL	INSTGNLI	APRGYFK	IRTKGSS	IMRS	DAPIGTCS	SECITP	300	
P03437	201	PSTNQBQTS	SLYVQASGRVT	VSTRSQQTI	IPNIGSRP	PWVRLSSR	IS	SIYWTIV	KPGDVLV	INSTGNLI	APRGYFK	MRTGSS	IMRS	DAPIDTCI	SECITP	300
J02132	201	PSTNQBQTS	SLYVQASGRVT	VSTRSQQTI	IPNIGSRP	PWVRLSSR	IS	SIYWTIV	KPGDVLV	INSTGNLI	APRGYFK	MRTGSS	IMRS	DAPIDTCI	SECITP	300
J02090	201	PSTNQBQTS	SLYVQASGRVT	VSTRSQQTI	IPNIGSRP	PWVRLSSR	IS	SIYWTIV	KPGDVLV	INSTGNLI	APRGYFK	MRTGSS	IMRS	DAPIDTCI	SECITP	300
DQ508929	201	PSTDBQTS	SLYVQASGRVT	VSTRSQQTI	IPNIGSRP	PWVRLSSR	IS	SIYWTIV	KPGDILL	INSTGNLI	APRGYFK	MRTGSS	IMRS	DAPIGTCS	SECITP	300
DQ508865	201	PSTDSQ	QISYVQASGRVT	VSTRSQQTI	IPNIGSSP	PWVRLSSR	IS	SIYWTIV	KPGDILL	INSTGNLI	APRGYFK	IRTKGSS	IMRS	DAPIGTCS	SECITP	300
DQ508849	201	PXTEKEQ	TNLYVRASGRVT	VSTRSQQTI	IPNIGSX	PWVRLSSR	IS	SIYWTIV	KPGDILL	INSTGNLI	APRGYFK	IRTKGSS	IMRS	DAPIGTCS	SECITP	300
DQ508833	201	PSTDRQTKLYVRASGRVT	VSTRSQQTI	VPNIGSRP	PWVRLSSR	IS	SIYWTIV	KPGDILL	INSTGNLI	APRGYFK	IRTKGSS	IMRS	DAPIGTCS	SECITP	300	
DQ508825	201	PSTDKQTKLYVRASGRVT	VSTRSQQTI	IPNIGSRP	PWVRLSSR	IS	SIYWTIV	KPGDILL	INSTGNLI	APRGYFK	IRTKGSS	IMRS	DAPIGTCS	SECITP	300	
AY779254	201	PSTDRDQTS	SLYVQASGRVT	VSTRSQQTI	VPNIGFRP	PWVRLSSR	IS	SIYWTIV	KPGDILL	INSTGNLI	APRGYFK	IRTKGSS	IMRS	DAPIDNCN	SECITP	300
AY779253	201	PSTDRDQTS	SLYVQASGRVT	VSTRSQQTI	VPNIGFRP	PWVRLSSR	IS	SIYWTIV	KPGDILL	INSTGNLI	APRGYFK	IRTKGSS	IMRS	DAPIDNCN	SECITP	300
AB019356	201	PSTSDQTS	SLYVQASGRVT	VSTRSQQTI	VPNIGSRP	PWVRLSSR	IS	SIYWTIV	KPGDILL	INSTGNLI	APRGYFK	IRTKGSS	IMRS	DAPIGKNCN	SECITP	300
AB019354	201	PSTSDQTS	SLYVQASGRVT	VSTRSQQTI	VPNIGSRP	PWVRLSSR	IS	SIYWTIV	KPGDILL	INSTGNLI	APRGYFK	IRTKGSS	IMRS	DAPIDNCN	SECITP	300
AAA43099	201	PSTDBQTS	SLYVQASGRVT	VSTRSQQTI	IPNIGSRP	PWVRLSSR	IS	SIYWTIV	KPGDILL	INSTGNLI	APRGYFK	MRTGSS	IMRS	DAPIGTCS	SECITP	300
U97740	301	NGSIPNDK	PPQNVN	ITYGAC	PRVYKQNTL	KLATGM	RNVPEKQTR	GLFGAI	AGFIENG	WEGVDGWY	FRHQNSEGT	QQAADL	CKSTQAA	IDQING	KLNR	400
P03437	301	NGSIPNDK	PPQNVN	ITYGAC	PKVVKQNTL	KLATGM	RNVPEKQTR	GLFGAI	AGFIENG	WEGVDGWY	FRHQNSEGT	QQAADL	CKSTQAA	IDQING	KLNR	400
J02132	301	NGSIPNDK	PPQNVN	ITYGAC	PKVVKQNTL	KLATGM	RNVPEKQTR	GLFGAI	AGFIENG	WEGVDGWY	FRHQNSEGT	QQAADL	CKSTQAA	IDQING	KLNR	400
J02090	301	NGSIPNDK	PPQNVN	ITYGAC	PKVVKQNTL	KLATGM	RNVPEKQTR	GLFGAI	AGFIENG	WEGVDGWY	FRHQNSEGT	QQAADL	CKSTQAA	IDQING	KLNR	400
DQ508929	301	NGSIPNDK	PPQNVN	ITYGAC	PKVVKQNTL	KLATGM	RNVPEKQTR	GLFGAI	AGFIENG	WEGVDGWY	FRHQNSEGT	QQAADL	CKSTQAA	IDQING	KLNR	400
DQ508865	301	NGSIPNDK	PPQNVN	ITYGAC	PRVYKQNTL	KLATGM	RNVPEKQTR	GLFGAI	AGFIENG	WEGVDGWY	FRHQNSEGT	QQAADL	CKSTQAA	IDQING	KLNR	400
DQ508849	301	NGSIPNDK	PPQNVN	ITYGAC	PRVYKQNTL	KLATGM	RNVPEKQTR	GLFGAI	AGFIENG	WEGVDGWY	FRHQNSEGT	QQAADL	CKSTQAA	IDQING	KLNR	400
DQ508833	301	NGSIPNDK	PPQNVN	ITYGAC	PRVYKQNTL	KLATGM	RNVPEKQTR	GLFGAI	AGFIENG	WEGVDGWY	FRHQNSEGT	QQAADL	CKSTQAA	IDQING	KLNR	400
DQ508825	301	NGSIPNDK	PPQNVN	ITYGAC	PKVVKQNTL	KLATGM	RNVPEKQTR	GLFGAI	AGFIENG	WEGVDGWY	FRHQNSEGT	QQAADL	CKSTQAA	IDQING	KLNR	400
AY779254	301	NGSIPNDK	PPQNVN	ITYGAC	PRVYKQNTL	KLATGM	RNVPEKQTR	GLFGAI	AGFIENG	WEGVDGWY	FRHQNSEGT	QQAADL	CKSTQAA	IDQING	KLNR	400
AY779253	301	NGSIPNDK	PPQNVN	ITYGAC	PRVYKQNTL	KLATGM	RNVPEKQTR	GLFGAI	AGFIENG	WEGVDGWY	FRHQNSEGT	QQAADL	CKSTQAA	IDQING	KLNR	400
AB019356	301	NGSIPNDK	PPQNVN	ITYGAC	PRVYKQNTL	KLATGM	RNVPEKQTR	GLFGAI	AGFIENG	WEGVDGWY	FRHQNSEGT	QQAADL	CKSTQAA	IDQING	KLNR	400
AB019354	301	NGSIPNDK														

FIGURE 13 (2 OF 3)

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U97740 401 IEKTEKFHQIEKEPSEVEGRIQDLEKYVEDTKIDLWSYNAELLVALENQHTIDLTDSMNKLFETRQQLRENAEDMGNCGCFKIYHKCDNACIGSIRNG 500
P03437 401 IEKTEKFHQIEKEPSEVEGRIQDLEKYVEDTKIDLWSYNAELLVALENQHTIDLTDSMNKLFETRQQLRENAEDMGNCGCFKIYHKCDNACIGSIRNG 500
J02132 401 IEKTEKFHQIEKEPSEVEGRIQDLEKYVEDTKIDLWSYNAELLVALENQHTIDLTDSMNKLFETRQQLRENAEDMGNCGCFKIYHKCDNACIGSIRNG 500
J02090 401 IEKTEKFHQIEKEPSEVEGRIQDLEKYVEDTKIDLWSYNAELLVALENQHTIDLTDSMNKLFETRQQLRENAEDMGNCGCFKIYHKCDNACIGSIRNG 500
DQ508929 401 IEKTEKFHQIEKEPSEVEGRIQDLEKYVEDTKIDLWSYNAELLVALENQHTIDLTDSMNKLFETRQQLRENAEDMGNCGCFKIYHKCDNACIGSIRNG 500
DQ508865 401 IEKTEKFHQIEKEPSEVEGRIQDLEKYVEDTKIDLWSYNAELLVALENQHTIDLTDSMNKLFETRQQLRENAEDMGNCGCFKIYHKCDNACIGSIRNG 500
DQ508849 401 IEKTEKFHQIEKEPSEVEGRIQDLEKYVEDTKIDLWSYNAELLVALENQHTIDLTDSMNKLFETRQQLRENAEDMGNCGCFKIYHKCDNACIGSIRNG 500
DQ508833 401 IEKTEKFHQIEKEPSEVEGRIQDLEKYVEDTKIDLWSYNAELLVALENQHTIDLTDSMNKLFETRQQLRENAEDMGNCGCFKIYHKCDNACIGSIRNG 500
DQ508825 401 IEKTEKFHQIEKEPSEVEGRIQDLEKYVEDTKIDLWSYNAELLVALENQHTIDLTDSMNKLFETRQQLRENAEDMGNCGCFKIYHKCDNACIGSIRNG 500
AY779254 401 IKKTEKFHQIEKEPSEVEGRIQDLEKYVEDTKIDLWSYNAELLVALENQHTIDLTDSMNKLFETRQQLRENAEDMGNCGCFKIYHKCDNACIGSIRNG 500
AB019356 401 IEKTEKFHQIEKEPSEVEGRIQDLEKYVEDTKIDLWSYNAELLVALENQHTIDLTDSMNKLFETRQQLRENAEDMGNCGCFKIYHKCDNACIGSIRNG 500
AB019354 401 IEKTEKFHQIEKEPSEVEGRIQDLEKYVEDTKIDLWSYNAELLVALENQHTIDLTDSMNKLFETRQQLRENAEDMGNCGCFKIYHKCDNACIGSIRNG 500
AAA43099 401 IEKTEKFHQIEKEPSEVEGRIQDLEKYVEDTKIDLWSYNAELLVALENQHTIDLTDSMNKLFETRQQLRENAEDMGNCGCFKIYHKCDNACIGSIRNG 500
* *****
U97740 501 TYDHDVYRDEALNNRFQIKGVELKSGYKDWILWISFAISCFLLCVLLGFIMWACQKGNIRCNICI 566
P03437 501 TYDHDVYRDEALNNRFQIKGVELKSGYKDWILWISFAISCFLLCVLLGFIMWACQKGNIRCNICI 566
J02132 501 TYDHDVYRDEALNNRFQIKGVELKSGYKDWILWISFAISCFLLCVLLGFIMWACQKGNIRCNICI 566
J02090 501 TYDHDVYRDEALNNRFQIKGVELKSGYKDWILWISFAISCFLLCVLLGFIMWACQKGNIRCNICI 566
DQ508929 501 TYDHDVYRDEALNNRFQIKGVELKSGYKDWILWISFAISCFLLCVLLGFIMWACQKGNIRCNICI 566
DQ508865 501 TYDHDVYRDEALNNRFQIKGVELKSGYKDWILWISFAISCFLLCVLLGFIMWACQKGNIRCNICI 566
DQ508849 501 TYDHDVYRDEALNNRFQIKGVELKSGYKDWILWISFAISCFLLCVLLGFIMWACQKGNIRCNICI 566
DQ508833 501 TYDHDVYRDEALNNRFQIKGVELKSGYKDWILWISFAISCFLLCVLLGFIMWACQKGNIRCNICI 566
AY779254 501 TYDHDVYRDEALNNRFQIKGVELKSGYKDWILWISFAISCFLLCVLLGFIMWACQKGNIRCNICI 566
AY779253 501 TYDHDVYRDEALNNRFQIKGVELKSGYKDWILWISFAISCFLLCVLLGFIMWACQKGNIRCNICI 566
AB019356 501 TYDHDVYRDEALNNRFQIKGVELKSGYKDWILWISFAISCFLLCVLLGFIMWACQKGNIRCNICI 566
AB019354 501 TYDHDVYRDEALNNRFQIKGVELKSGYKDWILWISFAISCFLLCVLLGFIMWACQKGNIRCNICI 566
AAA43099 501 TYDHDVYRDEALNNRFQIKGVELKSGYKDWILWISFAISCFLLCVLLGFIMWACQKGNIRCNICI 566
** *****

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FIGURE 13 (3 OF 3)

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VP1-S1	1	MAPKRKSGVSKCETKCTKACPRPAPVPKLLIKGGMEVLDLVTGPDSVTEI	50
VP1-S1H3A	1	MAPKRKSGVSKCETKCTKACPRPAPVPKLLIKGGMEVLDLVTGPDSVTEI	50
VP1-S1H3B	1	MAPKRKSGVSKCETKCTKACPRPAPVPKLLIKGGMEVLDLVTGPDSVTEI	50

VP1-S1	51	EAFLNPRMGQPPTPESLTEGGQYYGWSRGINLATS-----	86
VP1-S1H3A	51	EAFLNPRMGQPPTPESLTEGGQYYGWSRGINLATS-----G	91
VP1-S1H3B	51	EAFLNPRMGQPPTPESLTEGGQYYGWSRGINLATSAPSTNQEQTSLYVQA	100

VP1-S1	87	---GTEDSPGNNTLPTWSMAKLQLPMLNEDLTCDTLQMWEAVSVKTEVVG	133
VP1-S1H3A	92	SG-GTEDSPGNNTLPTWSMAKLQLPMLNEDLTCDTLQMWEAVSVKTEVVG	140
VP1-S1H3B	101	SGRGTEDSPGNNTLPTWSMAKLQLPMLNEDLTCDTLQMWEAVSVKTEVVG	150

VP1-S1	134	SGSLLDVHGFNKPDTDTVNTKGISTPVEGSQYHVFAVGGEPLDLQGLVTDA	183
VP1-S1H3A	141	SGSLLDVHGFNKPDTDTVNTKGISTPVEGSQYHVFAVGGEPLDLQGLVTDA	190
VP1-S1H3B	151	SGSLLDVHGFNKPDTDTVNTKGISTPVEGSQYHVFAVGGEPLDLQGLVTDA	200

VP1-S1	184	RTKYKEEGVVTIKTITTKDMVNKDQVLNPIKAKLDKDGMPVEIWHDPDP	233
VP1-S1H3A	191	RTKYKEEGVVTIKTITTKDMVNKDQVLNPIKAKLDKDGMPVEIWHDPDP	240
VP1-S1H3B	201	RTKYKEEGVVTIKTITTKDMVNKDQVLNPIKAKLDKDGMPVEIWHDPDP	250

VP1-S1	234	AKNENTRYFGNYTGTTTPPVLFQFTNTLT'TVLLDENGVGPLCKGEGLYLS	283
VP1-S1H3A	241	AKNENTRYFGNYTGTTTPPVLFQFTNTLT'TVLLDENGVGPLCKGEGLYLS	290
VP1-S1H3B	251	AKNENTRYFGNYTGTTTPPVLFQFTNTLT'TVLLDENGVGPLCKGEGLYLS	300

VP1-S1	284	CVDIMGWRVTRNYDVHHWRGLPRYFKITLRKRWVKNPYPMASLISSLFNN	333
VP1-S1H3A	291	CVDIMGWRVTRNYDVHHWRGLPRYFKITLRKRWVKNPYPMASLISSLFNN	340
VP1-S1H3B	301	CVDIMGWRVTRNYDVHHWRGLPRYFKITLRKRWVKNPYPMASLISSLFNN	350

VP1-S1	334	MLPQVQGQPMEGENTQVEEVRVYDGTPEVPGDPMTRYVDRFGKTKTVFP	383
VP1-S1H3A	341	MLPQVQGQPMEGENTQVEEVRVYDGTPEVPGDPMTRYVDRFGKTKTVFP	390
VP1-S1H3B	351	MLPQVQGQPMEGENTQVEEVRVYDGTPEVPGDPMTRYVDRFGKTKTVFP	400

VP1-S1	384	GN	385
VP1-S1H3A	391	GN	393
VP1-S1H3B	401	GN	403
		**	

FIGURE 14

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VP1-S4      1  MAPKRKSGVSKCETKCTKACPRPAPVPKLLIKGGMEVLDLVTGPDSVTEI  50
VP1-S4H3A   1  MAPKRKSGVSKCETKCTKACPRPAPVPKLLIKGGMEVLDLVTGPDSVTEI  50
VP1-S4H3B   1  MAPKRKSGVSKCETKCTKACPRPAPVPKLLIKGGMEVLDLVTGPDSVTEI  50
*****

VP1-S4      51  EAFLNPRMGQPPTPESLTEGGQYYGWSRGINLATSDTEDSPGNNTLPTWS  100
VP1-S4H3A   51  EAFLNPRMGQPPTPESLTEGGQYYGWSRGINLATSDTEDSPGNNTLPTWS  100
VP1-S4H3B   51  EAFLNPRMGQPPTPESLTEGGQYYGWSRGINLATSDTEDSPGNNTLPTWS  100
*****

VP1-S4      101 MAKLQLPMLNEDLTCDTLQMWEAVSVKTEVVVSGSLLDVHGFNKPTDTVN  150
VP1-S4H3A   101 MAKLQLPMLNEDLTCDTLQMWEAVSVKTEVVVSGSLLDVHGFNKPTDTVN  150
VP1-S4H3B   101 MAKLQLPMLNEDLTCDTLQMWEAVSVKTEVVVSGSLLDVHGFNKPTDTVN  150
*****

VP1-S4      151 TKGISTPVEGSQYHVFAVGGEPLDLQGLVTDARTKYKEEGVVTIKTITKK  200
VP1-S4H3A   151 TKGISTPVEGSQYHVFAVGGEPLDLQGLVTDARTKYKEEGVVTIKTITKK  200
VP1-S4H3B   151 TKGISTPVEGSQYHVFAVGGEPLDLQGLVTDARTKYKEEGVVTIKTITKK  200
*****

VP1-S4      201 DMVNKDQVLNPISKAKLDKDGMYPVEIWHPDPAKNENTRYFGNYTGCTTT  250
VP1-S4H3A   201 DMVNKDQVLNPISKAKLDKDGMYPVEIWHPDPAKNENTRYFGNYTGCTTT  250
VP1-S4H3B   201 DMVNKDQVLNPISKAKLDKDGMYPVEIWHPDPAKNENTRYFGNYTGCTTT  250
*****

VP1-S4      251 PPVLQFTNTLTTLVLLDENGVGPLCKGEGLYLSCVDIMGWRVTRS-----  294
VP1-S4H3A   251 PPVLQFTNTLTTLVLLDENGVGPLCKGEGLYLSCVDIMGWRVTRSKRG---  297
VP1-S4H3B   251 PPVLQFTNTLTTLVLLDENGVGPLCKGEGLYLSCVDIMGWRVTRSPSTNQE  300
*****

VP1-S4      295 -----AYDVHHWRGLPRYFKITLRKRWVKNPYPMASLISSLFNN  333
VP1-S4H3A   298 -----PGSGAYDVHHWRGLPRYFKITLRKRWVKNPYPMASLISSLFNN  340
VP1-S4H3B   301 QTSLYVQASGRAYDVHHWRGLPRYFKITLRKRWVKNPYPMASLISSLFNN  350
*****

VP1-S4      334 MLPQVQGQPMEGENTQVEEVRVYDGTPEVPVPGDPDMTRYVDRFGKTKTVFP  383
VP1-S4H3A   341 MLPQVQGQPMEGENTQVEEVRVYDGTPEVPVPGDPDMTRYVDRFGKTKTVFP  390
VP1-S4H3B   351 MLPQVQGQPMEGENTQVEEVRVYDGTPEVPVPGDPDMTRYVDRFGKTKTVFP  400
*****

VP1-S4      384 GN      385
VP1-S4H3A   391 GN      393
VP1-S4H3B   401 GN      403
**

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FIGURE 15

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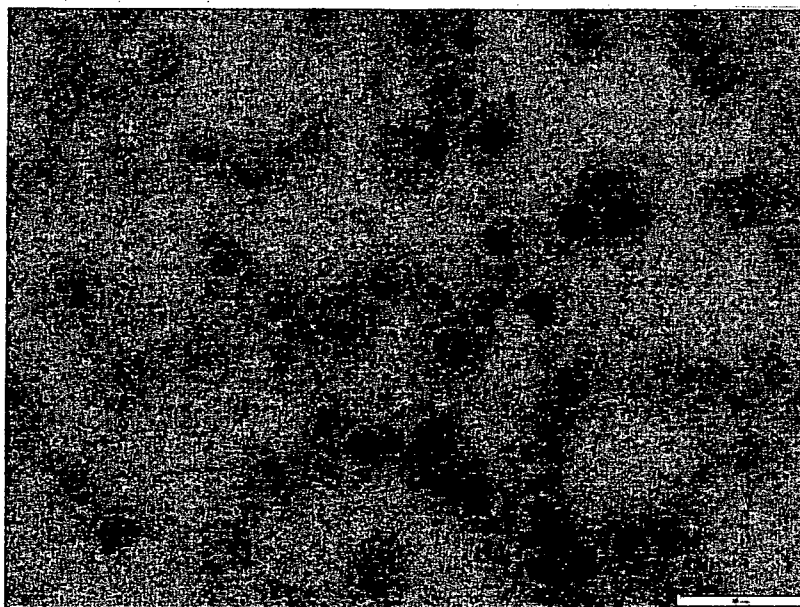


FIGURE 16

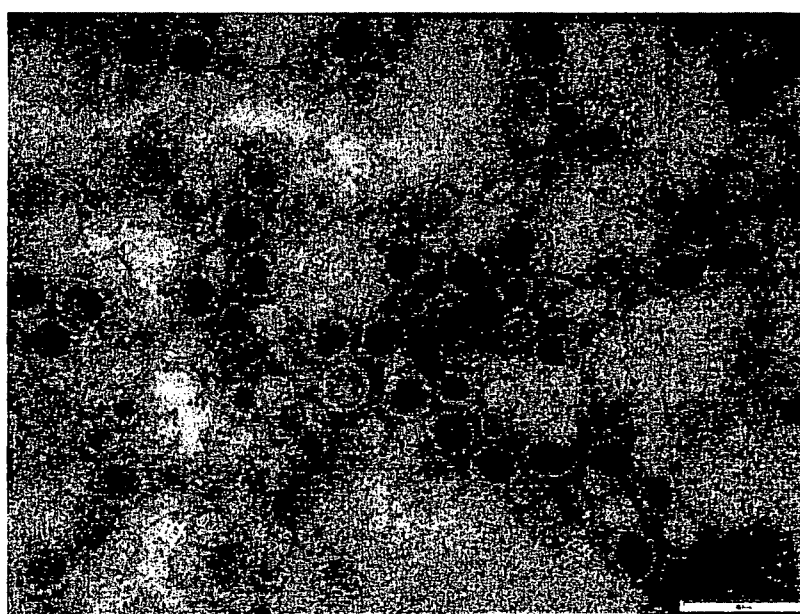


FIGURE 17

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VP1-S4      1  MAPKRKSGVSKCETKCTKACPRPAPVPKLLIKGGMEVLDLVTGPDSVTEI  50
VP1-S4A    1  MAPKRKSGVSKCETKCTKACPRPAPVPKLLIKGGMEVLDLVTGPDSVTEI  50
VP1-S4B    1  MAPKRKSGVSKCETKCTKACPRPAPVPKLLIKGGMEVLDLVTGPDSVTEI  50
VP1-S4hM2e 1  MAPKRKSGVSKCETKCTKACPRPAPVPKLLIKGGMEVLDLVTGPDSVTEI  50
*****

VP1-S4      51  EAFLNPRMGQPPTPESLTEGGQYYGWSRGINLATSDTEDSPGNNTLPTWS 100
VP1-S4A    51  EAFLNPRMGQPPTPESLTEGGQYYGWSRGINLATSDTEDSPGNNTLPTWS 100
VP1-S4B    51  EAFLNPRMGQPPTPESLTEGGQYYGWSRGINLATSDTEDSPGNNTLPTWS 100
VP1-S4hM2e 51  EAFLNPRMGQPPTPESLTEGGQYYGWSRGINLATSDTEDSPGNNTLPTWS 100
*****

VP1-S4      101 MAKLQLPMLNEDLTCDTLQMWEAVSVKTEVVGSGSLLDVHGFNKPTDTVN 150
VP1-S4A    101 MAKLQLPMLNEDLTCDTLQMWEAVSVKTEVVGSGSLLDVHGFNKPTDTVN 150
VP1-S4B    101 MAKLQLPMLNEDLTCDTLQMWEAVSVKTEVVGSGSLLDVHGFNKPTDTVN 150
VP1-S4hM2e 101 MAKLQLPMLNEDLTCDTLQMWEAVSVKTEVVGSGSLLDVHGFNKPTDTVN 150
*****

VP1-S4      151 TKGISTPVEGSQYHVFAVGGEPLDLQGLVTDARTKYKEEGVVTIKTITKK 200
VP1-S4A    151 TKGISTPVEGSQYHVFAVGGEPLDLQGLVTDARTKYKEEGVVTIKTITKK 200
VP1-S4B    151 TKGISTPVEGSQYHVFAVGGEPLDLQGLVTDARTKYKEEGVVTIKTITKK 200
VP1-S4hM2e 151 TKGISTPVEGSQYHVFAVGGEPLDLQGLVTDARTKYKEEGVVTIKTITKK 200
*****

VP1-S4      201 DMVNKDQVLNPISKAKLKDGMYPVEIWHDPAPAKNENTRYFGNYTGTTT 250
VP1-S4A    201 DMVNKDQVLNPISKAKLKDGMYPVEIWHDPAPAKNENTRYFGNYTGTTT 250
VP1-S4B    201 DMVNKDQVLNPISKAKLKDGMYPVEIWHDPAPAKNENTRYFGNYTGTTT 250
VP1-S4hM2e 201 DMVNKDQVLNPISKAKLKDGMYPVEIWHDPAPAKNENTRYFGNYTGTTT 250
*****

VP1-S4      251 PPVLQFTNTLTTLVLLDENGVGPLCKGEGLYLSCVDIMGWRVTRS----- 294
VP1-S4A    251 PPVLQFTNTLTTLVLLDENGVGPLCKGEGLYLSCVDIMGWRVTRSPYNGK- 299
VP1-S4B    251 PPVLQFTNTLTTLVLLDENGVGPLCKGEGLYLSCVDIMGWRVTRSPNDAAE 300
VP1-S4hM2e 251 PPVLQFTNTLTTLVLLDENGVGPLCKGEGLYLSCVDIMGWRVTRSSLLTEV 300
*****

VP1-S4      295 -----AYDVHHWRGLPRYFKITLRKRWVKNPYPMASLI 327
VP1-S4A    300 -----SS-AYDVHHWRGLPRYFKITLRKRWVKNPYPMASLI 334
VP1-S4B    301 QTKLYQN-----PTTYAYDVHHWRGLPRYFKITLRKRWVKNPYPMASLI 344
VP1-S4hM2e 301 ETPIRNEWGCRCNDSSDAYDVHHWRGLPRYFKITLRKRWVKNPYPMASLI 350
*****

VP1-S4      328 SSLFNNMLPQVQGQPMEGENTQVEEVRYVDGTEPVPGDPDMTRYVDRFGK 377
VP1-S4A    335 SSLFNNMLPQVQGQPMEGENTQVEEVRYVDGTEPVPGDPDMTRYVDRFGK 384
VP1-S4B    345 SSLFNNMLPQVQGQPMEGENTQVEEVRYVDGTEPVPGDPDMTRYVDRFGK 394
VP1-S4hM2e 351 SSLFNNMLPQVQGQPMEGENTQVEEVRYVDGTEPVPGDPDMTRYVDRFGK 400
*****

VP1-S4      378 TKTVPFPGN 385
VP1-S4A    385 TKTVPFPGN 393
VP1-S4B    395 TKTVPFPGN 403
VP1-S4hM2e 401 TKTVPFPGN 409
*****

```

FIGURE 18

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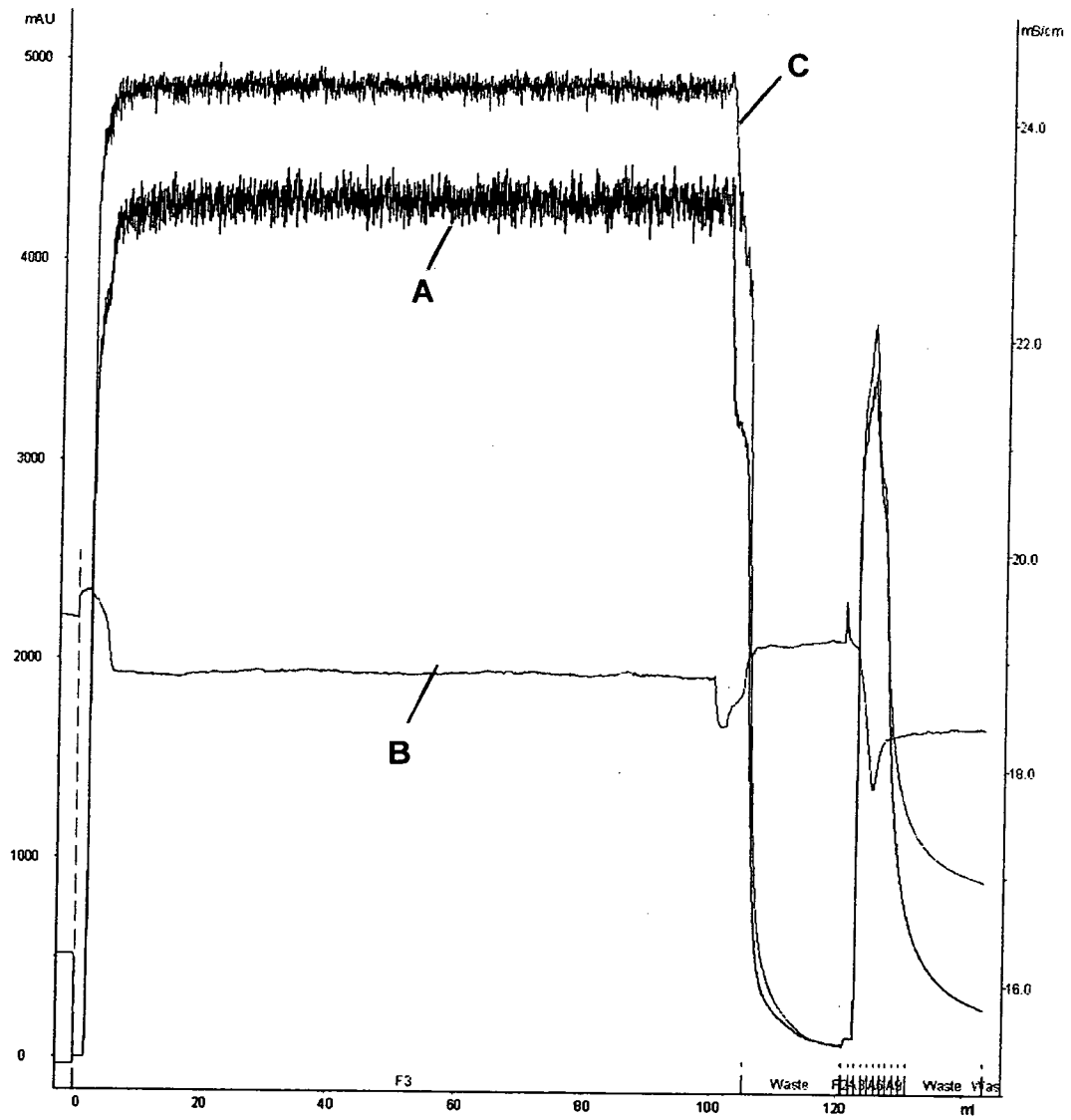


FIGURE 19A

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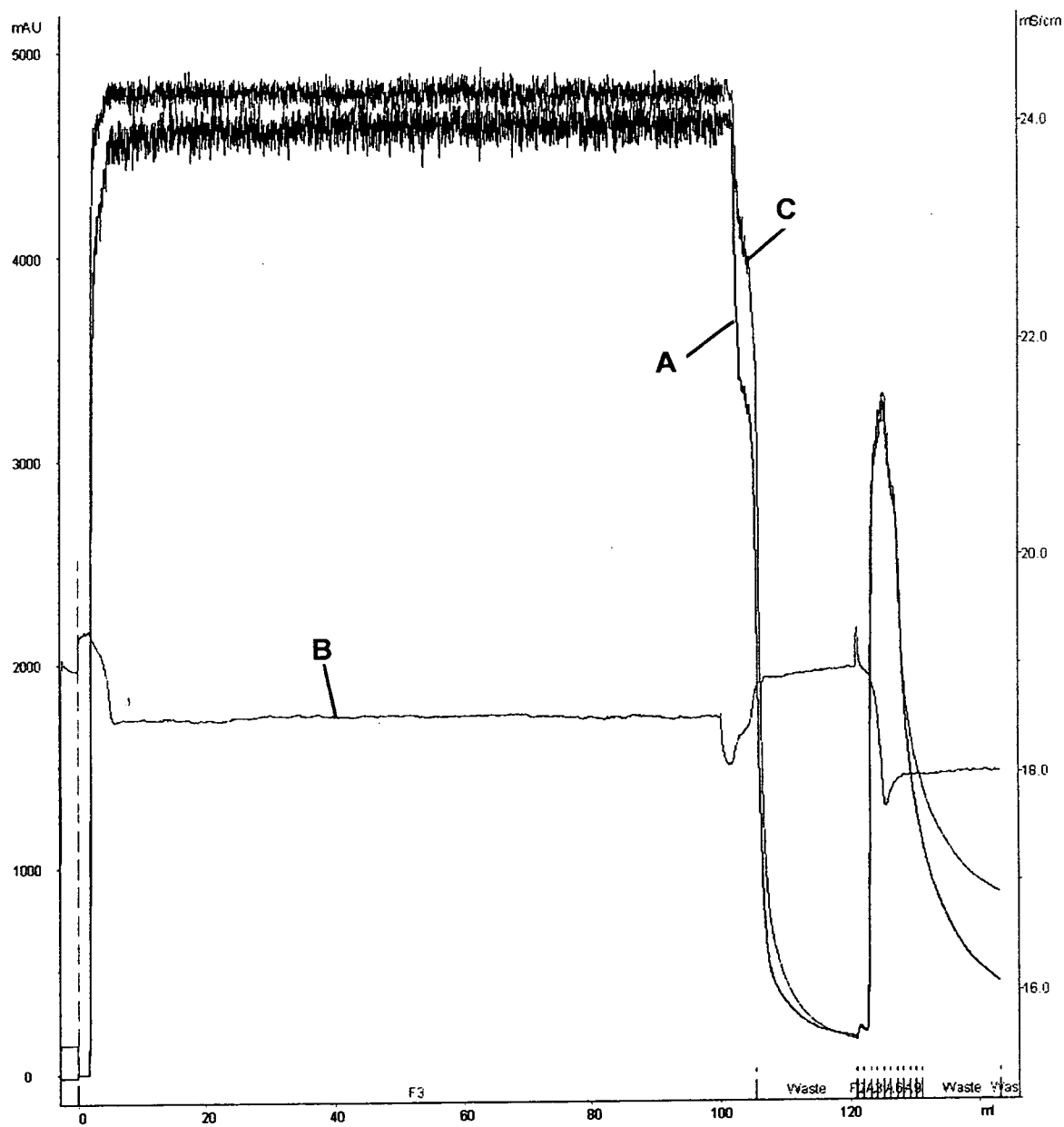


FIGURE 19B

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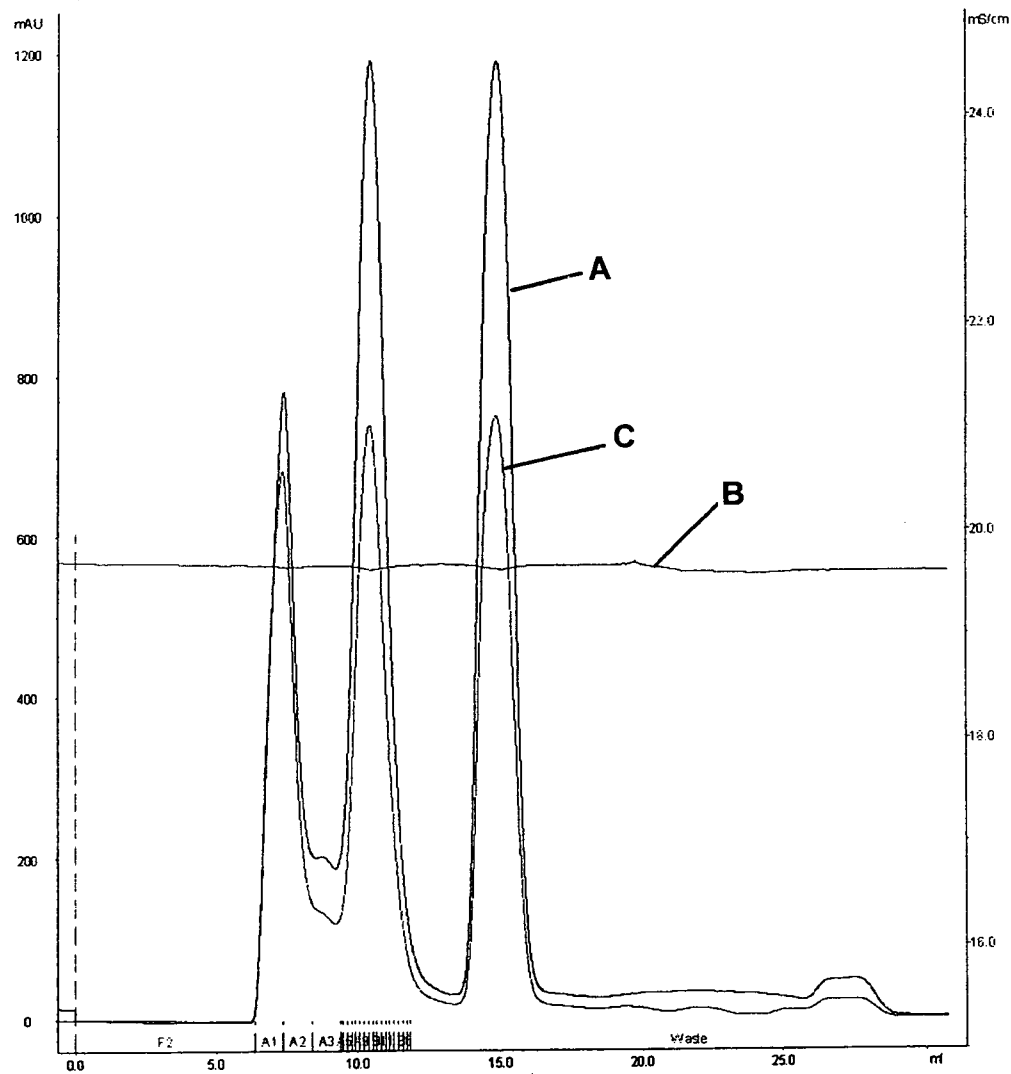


FIGURE 20A

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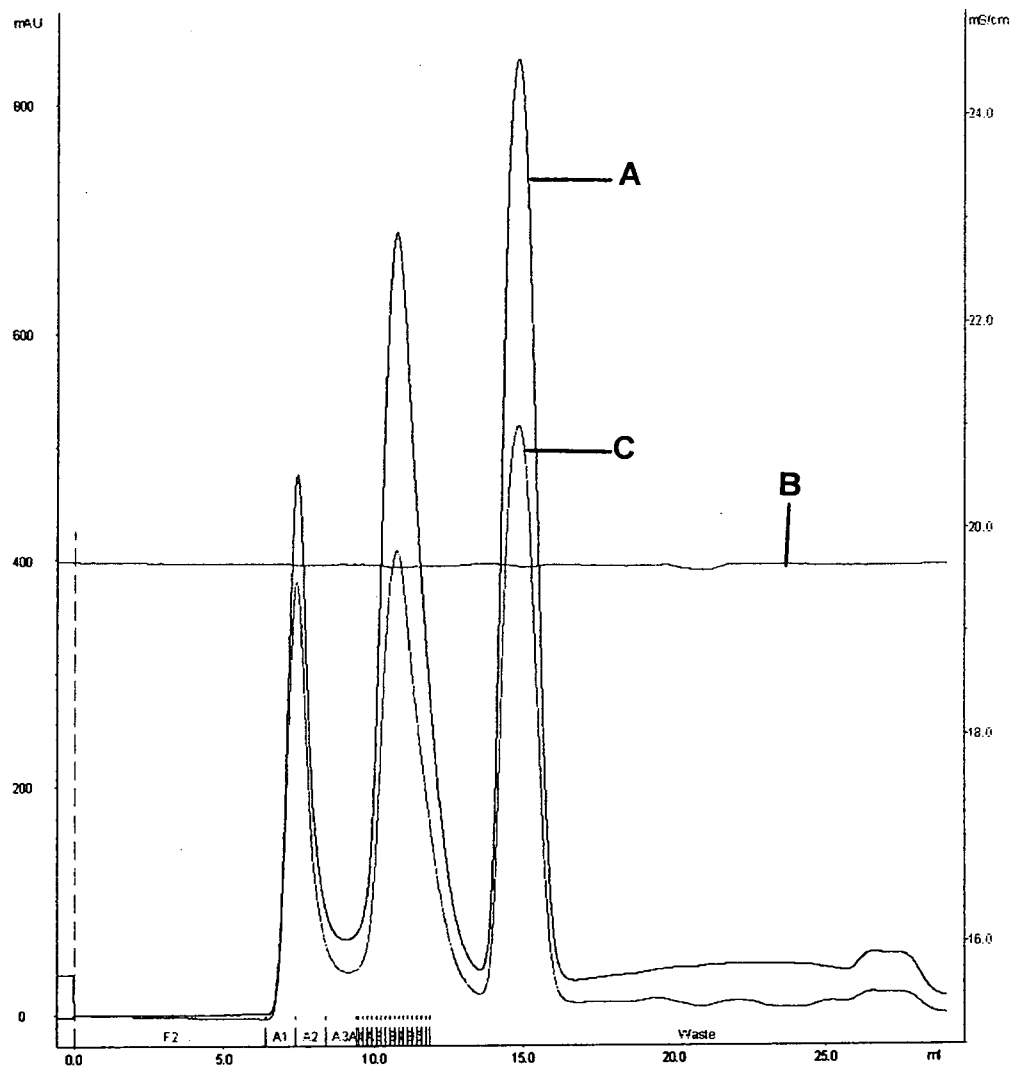


FIGURE 20B

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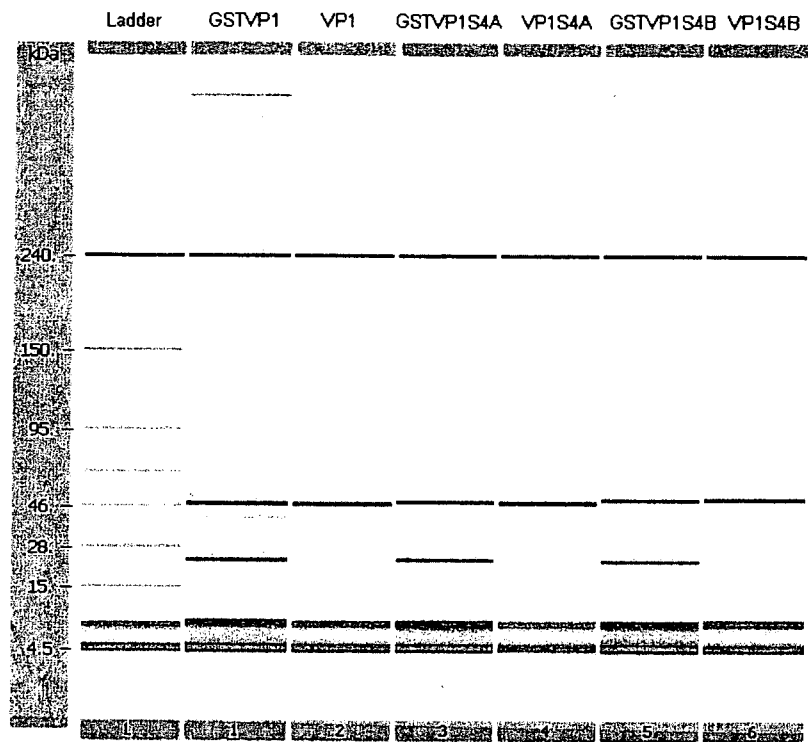


FIGURE 21

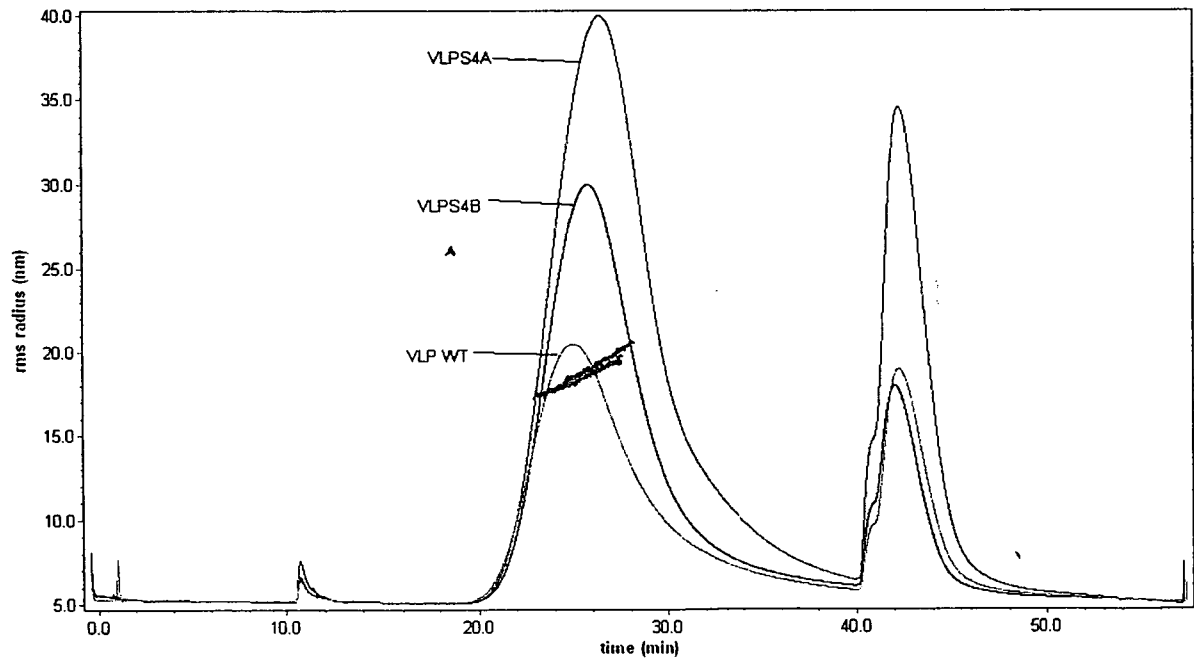
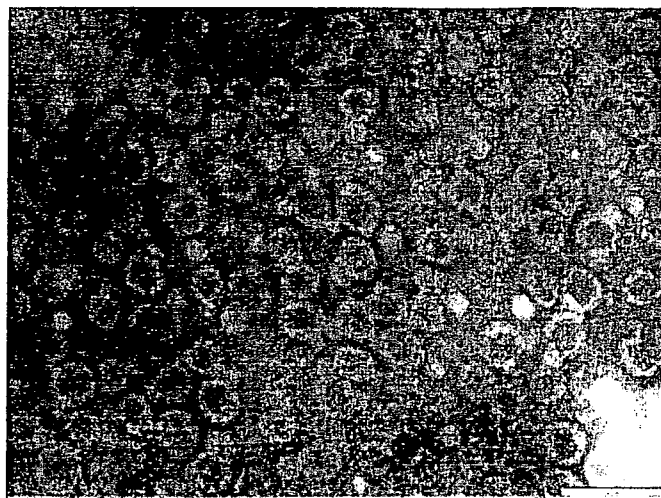
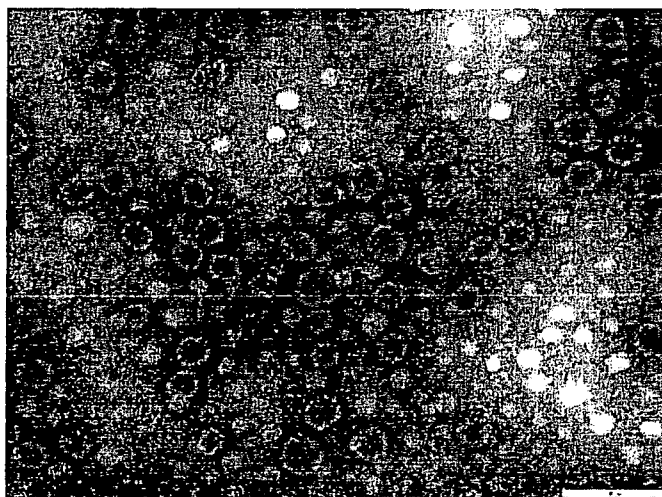


FIGURE 22

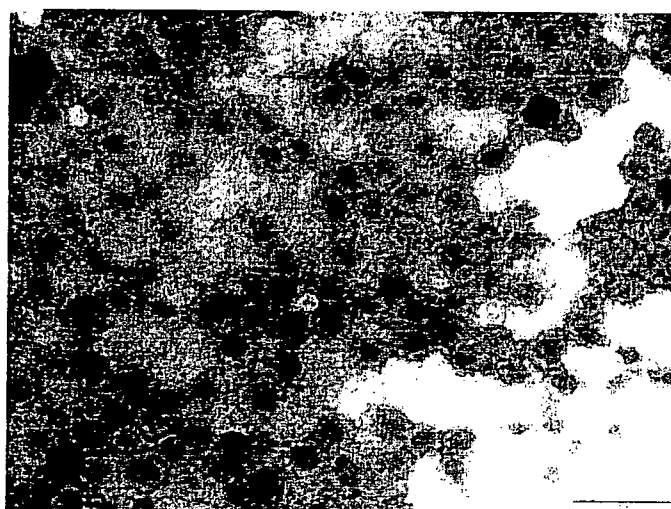
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A



B



C

FIGURE 23