

83571547.q -YLVRLEFLYGNYDSMDSSL--LKFNLSLGVNHWNTVNLDTIDDDGYNFYEAFFVVAWSWAPVCLINIGQGPFFVSTVLRLLG-TLPYPATIGQNQSLSLVRRSIG-SSADD--MRYPDDQYDFTWVIMGETTGAADMSNS-T-PTIIPPSVPFAVSPNPI
83571535.q -YLVRLKFLYGNYDGLDSSS-LKFNLTGKVHKWDITVSIDTTDGNDGYNVHEAVFVVAWSWAPVCLINIGQGTFMFMSMVELRPLG-ILPPYPAVMGNVSLSLVRSNVG-SSPDDDKLVRYPDDQYDFTWSTDEAHLPS-TNIS-T-QTTIQASTEFAVSPV
83571521.q -YLVRLKFLYGNYDGLDSSS-LKFNLTGKVHKWDITVSIDTTDGNDGYNVHEAVFVVAWSWAPVCLINIGQGTFMFMSMVELRPLG-ILPPYPAVMGNVSLSLVRSNVG-SSPDDDKLVRYPDDQYDFTWSTDEAHLPS-TNIS-T-QTTIQASTEFAVSPV
83571523.q -YLVRLKFLYGNYDGLDSSS-LKFNLTGKVHKWDITVSIDTTDGNDGYNVHEAVFVVAWSWAPVCLINIGQGTFMFMSMVELRPLG-ILPPYPAVMGNVSLSLVRSNVG-SSPDDDKLVRYPDDQYDFTWSTDEAHLPS-TNIS-T-QTTIQASTEFAVSPV
83571516.q MIGAAVAR-WTGAATNDVGG-MSGAAAATGEGGPLVAVLGLGGNGDLHNGDAAVVLC-GKWWVLAGYAR-CHG-KTWCAWSRYGDQYDFTFW-QLGYSSPTWKNLSS-T-VSAITQDSIYTVLLLTH
83571520.q MIGAAVAR-WTGAATNDVGG-MSGAAAATGEGGPLVAVLGLGGNGDLHNGDAAVVLC-GKWWVLAGYAR-CHG-KTWCAWSRYGDQYDFTFW-QLGYSSPTWKNLSS-T-VSAITQDSIYTVLLLTH
83571509.q YLVRVIAFYGNYDGKNSSS-LQFDFLYLGVNVNWNTVS-ADGDEVVYAMPVVAWSWAPVCLVNTRGGTFFVSSVNLRTLGSGVHH-PVLAANQSCLMFDRR-NMGSNSVSIIRYDDYEDRWK-KMRSD-PTWKNLSS-T-ASTIEQDNFVWL-PVMM
83571557.q YLVRLGFLYGNYDGENSESSSSASLRFDLHLCAQRWATVDDVVVTTGGGTSRMYEVVFMGWARWAPACLVNVNGGTPFVSSVIELRPVKTDLEPV-SVKTSESLSLFKRSD-MGADTTTLTRYPADEHDKW-GTGNP-GSTDIS-T-QEKIQSENSFEVPLPV
83523572.q
62680017.q MLRAVELLFLAVALAAASPAPRGPTACTPYDLATRPRECYANATAGQAAATCCWVFAAYIAAADHANTRGAALGPAP-AACSGAAFAARLSDGLVPSLLANGSCDLTGDPGKLAAGSPRCOLATI
30694327.p MVVNSFLALLIALLALLAQ-TPLSMSMAAD-CPLDFSGSNLTLRATVCSNTLNGVTSDSLSETCIASISRAMEGYGVSNATSFCLGKGKILVW-DCDGRITTVTQMHCSPGFHVSNCRCLPSPGHQCRKCH
18402188.p MVLVYNAQALLLAFFALLGQFYFPLLTEAG-CPLDFTSSNFTLVAWSVCNSNTERAKCCRVMNAFAVISVARYANTADLGVTSDLTEICITTSRMTELYGIPRNATIFCGLGTKLIVNJDCEGLTTVPPMLHSTSFGDVSRNCKLPLPPGDQCRNQ
AK102046.q MLLRGGLVSVVLLLAQSPFFFSANPAATVAGDCPLDFSWANFTLASAACSDPTQRAACCRYINAFAVIAISMARYANATGRLGVPPAFSEICLSSVSETFKLRCIPIDTADVFCLGKGKIRVSYQACGRDTVILEMLOSNFENDVVGSCRGPQLSLDITCKTC
AK064161.q
30688287.p
30688291.p
59970008.q

44970023.q HTSICDQYQN -FRLIRITALMISFSELGGD IDASFGQLLILRHLDSYNNLGSISIP DFLQMDP -LLFLTLCNNNLNCNNHCDPEISNNKR
 835393605.q YSSPAVLTALNLSVSLIGP VNLSSKPLKRENSLRLGNNANLQYANNTCAFEKSQ -LSSNKLSGSIPSDLLQKRENSLRLGNNANLQYANNTCAFEKSQ
 83510478.q YPADSKITSLNLSSSGLAGS DATYFGDLKSYQYLD LSSNDLGSPPD FFLVQMPALKFLD
 37400006.q YDSSKPIIDNLSSSGLGE ISSAFANIKALQNLDSNNNLTSGLD -LSSNKLTSGLD
 37400005.q YE-NK-HVIKINLSSSGLGE ISSSFGLKALQYLD LSNNNLTSGLD
 AK073571.q YA-NSK-HVIKINLSSSGLGE ISSSFGLKALQYLD LSNNNLTSGLD
 83534004.q YA-NSK-HVIKINLSSSGLGE ISSSFGLKALQYLD LSNNNLTSGLD
 83500238.q YD-NSSGARIIISLNLSSSGLSDA ISSAFGNLKALQYLD LSNNNLTSGLD
 83570660.q YA-NSSGARIIISLNLSSSGLSDA ISSAFGNLKALQYLD LSNNNLTSGLD
 37400008.q YA-NSSGARIIISLNLSSSGLSDA ISSAFGNLKALQYLD LSNNNLTSGLD
 83571573.q YA-NSSGARIIISLNLSSSGLSDA ISSAFGNLKALQYLD LSNNNLTSGLD
 AK105685.q
 67820003.q SDGV -
 83571592.q NTSDN- IPRIISLDLSNENLHGIV SNNFTLTTAENLNFPVIAVKGKKDDMVKGEVKKVKG -GDSQNLDEKLDWLGELEEKGSRTITKVVFDAMLPALGNLTGQNLDGTI
 83571605.q NTSDN- IPRIISLDLSNENLHGIV SNNFTLTTAENLN-LTGNQLNGT P-DSLCKLNAGSFIFS- -YNSDQDLCKTSPSSRSRATILAISIAAPVMVVAIILGSYLIWRVKR
 AK100557.q
 83571544.q TGSND -
 83571547.q SDG-K -
 83571535.q
 83571521.q DAGDK -
 83571523.q
 83571516.q SVSG -
 83571520.q NSSN -
 83571509.q NPDSN -
 83571557.q TAGDDN -
 83523572.q
 62680017.q
 18402188.p
 AK102046.q
 AK064161.q
 30688287.p
 30688291.p
 59970008.g

| | 1010 | 1020 | 1030 | 1040 | 1050 | 1060 | 1070 | 1080 | 1090 | 1100 | 1110 | 1120 | 1130 | 1140 | 1150 | 1160 | 1170 | 1180 | 1190 | 12 | | | | | | |
|------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|---|---|---|---|---|---|
| 30696480.p | M | L | I | Y | V | M | S | K | S | D | A | S | H | I | Y | S | E | K | P | Q | G | L | M | E | | |
| 30696478.p | M | L | I | Y | V | M | S | K | S | D | A | S | H | I | Y | S | E | K | P | Q | G | L | M | E | | |
| 83560345.p | M | L | I | Y | V | M | S | K | S | D | A | S | H | I | Y | S | E | K | P | Q | G | L | M | E | | |
| 18417765.p | M | L | I | Y | V | M | S | K | S | D | A | S | H | I | Y | S | E | K | P | Q | G | L | M | E | | |
| AK09778.p | I | L | V | V | E | F | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | |
| 15239694.p | I | L | V | V | E | F | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | |
| 72200021.p | I | L | V | V | E | F | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | |
| AK101189.p | I | L | V | V | E | F | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | |
| 15228078.p | I | L | V | V | E | F | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | |
| 83507008.p | I | L | V | V | E | F | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | |
| 18408845.p | I | L | V | V | E | F | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | |
| 44400022.p | F | S | V | I | W | L | T | E | N | V | T | Y | R | S | D | R | S | V | T | E | N | V | T | Y | R | S |
| 44400021.p | C | L | A | L | V | D | F | M | P | N | O | L | R | G | S | T | N | E | R | S | T | E | N | V | T | Y |
| 72170001.p | H | A | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | E | |
| 44970023.p | H | R | C | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | |
| 83593605.p | H | R | C | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | |
| 38510478.p | H | R | C | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | |
| 37400006.p | Y | M | A | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | |
| 37400005.p | Y | M | A | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | |
| AK073571.p | Y | M | A | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | |
| 83534004.p | Y | M | A | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | |
| 83500238.p | Y | M | A | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | |
| 83570660.p | Y | M | A | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | |
| 38571573.p | H | A | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | E | |
| AK105685.p | H | A | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | E | |
| 67820003.p | H | A | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | E | |
| 83571592.p | H | A | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | E | |
| 83571605.p | H | A | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | E | |
| AK100557.p | H | A | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | E | |
| 83571544.p | H | A | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | E | |
| 83571547.p | H | A | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | E | |
| 83571553.p | H | A | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | E | |
| 83571521.p | H | A | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | E | |
| 83571523.p | H | A | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | E | |
| 83571516.p | H | A | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | E | |
| 83571520.p | H | A | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | E | |
| 83571509.p | H | A | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | E | |
| 83571557.p | Y | L | A | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | E | |
| 83523572.p | E | C | F | L | I | C | N | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | A | B | C | D |
| 62680017.p | H | A | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | E | |
| 30694632.p | E | R | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | E | |
| 18402188.p | E | R | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | E | |
| AK102046.p | E | R | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | E | |
| AK06161.p | E | G | Q | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | E | |
| 30688287.p | K | R | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | E | |
| 30688291.p | K | R | L | V | E | M | S | N | S | L | N | D | R | Y | G | R | A | P | T | E | W | R | E | W | E | |
| 59970008.q | S | R | L | V | F | D | M | N | R | S | T | C | H | P | D | E | F | G | H | I | J | K | L | M | N | |

| | 1210 | 1220 | 1230 | 1240 | 1250 | 1260 | 1270 | 1280 | 1290 | 1300 | 1310 | 1320 | 1330 | 1340 | 1350 | 1360 | 1370 | 1380 | 1390 | 14 | | | | | | |
|------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|---|---|---|---|-------|---|
| 30696480.p | L | V | E | A | M | N | A | E | K | V | R | E | R | S | D | R | N | S | D | S | S | I | A | E | V | |
| 30696478.p | G | W | E | I | V | D | S | R | L | D | G | R | D | V | P | N | R | E | S | T | P | R | N | D | S | |
| 83560345.p | G | W | E | I | V | D | S | R | L | D | G | R | D | V | P | N | R | E | S | T | P | R | N | D | S | |
| 18417765.p | G | W | E | I | V | D | S | R | L | D | G | R | D | V | P | N | R | E | S | T | P | R | N | D | S | |
| AK09778.p | G | W | E | I | V | D | S | R | L | D | G | R | D | V | P | N | R | E | S | T | P | R | N | D | S | |
| 15239694.p | G | W | E | I | V | D | S | R | L | D | G | R | D | V | P | N | R | E | S | T | P | R | N | D | S | |
| 72200021.p | I | V | E | A | R | S | H | M | S | N | D | R | Y | G | R | D | V | E | S | T | P | R | N | D | S | |
| AK101189.p | I | V | E | A | R | S | H | M | S | N | D | R | Y | G | R | D | V | E | S | T | P | R | N | D | S | |
| 15228078.p | I | V | E | A | R | S | H | M | S | N | D | R | Y | G | R | D | V | E | S | T | P | R | N | D | S | |
| 83507008.p | I | V | E | A | R | S | H | M | S | N | D | R | Y | G | R | D | V | E | S | T | P | R | N | D | S | |
| 18408845.p | I | V | E | A | R | S | H | M | S | N | D | R | Y | G | R | D | V | E | S | T | P | R | N | D | S | |
| 44400022.p | V | H | P | N | V | R | Q | K | A | G | S | T | E | N | R | D | L | I | M | E | P | T | N | S | R | |
| 44400021.p | V | H | P | N | V | R | Q | K | A | G | S | T | E | N | R | D | L | I | M | E | P | T | N | S | R | |
| 72170001.p | V | H | P | N | V | R | Q | K | A | G | S | T | E | N | R | D | L | I | M | E | P | T | N | S | R | |
| 44970023.p | C | V | R | D | W | L | S | S | G | R | E | T | A | T | E | P | G | A | T | T | E | P | G | A | T | |
| 83593605.p | S | V | E | A | R | S | H | M | S | N | D | R | Y | G | R | D | V | E | S | T | P | R | N | D | S | |
| 83510478.p | S | V | E | A | R | S | H | M | S | N | D | R | Y | G | R | D | V | E | S | T | P | R | N | D | S | |
| 37400006.p | S | I | L | H | N | A | O | R | L | A | G | T | E | N | R | D | L | I | M | E | P | T | N | S | R | |
| 37400005.p | S | I | L | H | N | A | O | R | L | A | G | T | E | N | R | D | L | I | M | E | P | T | N | S | R | |
| AK073571.p | S | I | L | H | N | A | O | R | L | A | G | T | E | N | R | D | L | I | M | E | P | T | N | S | R | |
| 83534004.p | S | I | L | H | N | A | O | R | L | A | G | T | E | N | R | D | L | I | M | E | P | T | N | S | R | |
| 83500238.p | S | I | L | H | N | A | O | R | L | A | G | T | E | N | R | D | L | I | M | E | P | T | N | S | R | |
| 83570660.p | S | I | L | H | N | A | O | R | L | A | G | T | E | N | R | D | L | I | M | E | P | T | N | S | R | |
| 37400008.p | T | T | I | L | H | N | A | O | R | L | A | G | T | E | N | R | D | L | I | M | E | P | T | N | S | R |
| 83571573.p | V | V | R | V | R | Q | S | D | G | D | I | S | A | R | T | E | P | G | A | T | T | E | P | G | A | T |
| AK105685.p | V | V | R | V | R | Q | S | D | G | D | I | S | A | R | T | E | P | G | A | T | T | E | P | G | A | T |
| 67820003.p | V | V | R | V | R | Q | S | D | G | D | I | S | A | R | T | E | P | G | A | T | T | E | P | G | A | T |
| 83571592.p | V | V | R | V | R | Q | S | D | G | D | I | S | A | R | T | E | P | G | A | T | T | E | P | G | A</td | |

83571547.q VVORVKQRKVTCN ISSIVDTTRGGG- YNVSMMKVLDIAMCTTINIAAEERCTMAAVVQILLESLELAEHQGERGMDMENQAR - DNTYLMSTF GPLAR
 83571535.q IVERVKQKVNIVN ISSVPDARCGS- YNVSMMKVLDIAMCTTADIAAQQRPMDVVVQILLESLELAEHQGERGMDMENQAR - DAKFMSMML GPSAR
 83571521.q IVERVKQKVNIVN ISSVPDARCGA- YNVSMMKVVNIAAMCTTADIAQRPMDVVVQILLESLELAEHQGERGMDMENQAR - DTMSSMSTF GPSAR
 83571523.q IVERVKQKVNIVN ISSVPDARCGA- YNVSMMKVVNIAAMCTTADIAQRPMDVVVQILLESLELAEHQGERGMDMENQAR - PGNHIIQHMMQIVTGNITSVADERLGGSYIFNSMWKVLIDAMMCITDASQRLMSMSAVLQLKENHLEEA
 83571516.q IVERVKQKVNIVN ISSVPDARCGA- YDVSMMKVVDIALCTTADIAQRPMDVVVQILLESLELAEHQGERGMDMENQAR - VTIQELP-II GPLAR
 83571520.q IVERVKQKVNIVN ISSVPDARCGA- YDVSMMKVVDIALCTTADIAQRPMDVVVQILLESLELAEHQGERGMDMENQAR - DEDSGFMGSTVSDNTFSTSRF GPSAR
 83571509.q IVERVKQKVNIVN ISSVPDARCGA- YDVSMMKVVDIALCTTADIAQRPMDVVVQILLESLELAEHQGERGMDMENQAR - GPSAR
 83571557.q IVERVKQKVNIVN ISSVPDARCGS- YDVSMMKVVDIAMCTTADIAQRPMDVVVQILLESLELAEHQGERGMDMENQAR - DAVDVSTF GPSAR
 83523572.q PMSLDRMASMIIIREQN VLFEPADPRNGE VSTEADFLSLKLALSTG - HKKQRSMEMEQVSHLIAKHSRISMRDDKHNISIIESHS -
 62680017.q AESIVAAWAWAQAGGEAGAAAEMVDERQH KRPVPRALACRVRQYKHEPRPMEVQVHADYATARGGGADRMSVSSSTATPDLASLP - STSSSVANTEAMATPPRDS
 30694632.p GRNLVEMCPFLAKSK HLELVDPRKDSDINDAGGQKLDLVAVTVYRCEKEGRSRSRISIKVQVRLIDCSCDPVSEPAKAVEEICWD - RKRNLRIQR - GD-RI FGPSSSTTSRSHYSRS - LPHSPINGFSF-
 18402188.p GRNLVELSPCLIVSSES RIELVDPRKDCCID - GQLEQETTVVAVWRCNTEKEGVARSRSIKVQVRLIDCSCDPVHLGLAMAVEENKGRSL - RGDS - GFQS - GD-IRG LASSSSSTTSRSHCSRSFLLETGSPHSPNGLSF-
 AK102046.q SRNLVEMCPFLAKSK TRECVDPTTRGLWHD - MDQHLILWVLSIVWVQTCQRECGRSRSIKVQVRLIDCSCDPVNGSFGEMEDAGFFI - PRNSKCCVHRNELLPHDGMRS - LHSSSSTTSRSHCSRSMLLCGGQAHSPPETL
 AK061616.q SRNLVEMCPFLAKSK TRECVDPTTRGLWHD - DDELQVMDAVHWWCTH - RDGAARSPMSKVCERLIPERDPLSGKLARAVAGEEGYYGGWOSGRKGKEGAEMLAGGGGGDGR - CLPSSNTTSRSHCSRSVLLECNPEAAPSSRFGLP
 30688287.p GNDLIEWVDCSCIANS IDKMDIDPDIGNNYNS - SRELOKVKAVARLCKTTRYEPSSISITHVYRYLKKCDVAT -
 30688291.p GNDLIEWVDCSCIANS IDKMDIDPDIGNNYNS - SRELOKVKAVARLCKTTRYEPSSISITHVYRYLKKCDVAT -
 59970008.q G-ELVQWVQZEGFACT MTKMVIDADIGNNYD - SKELRNLVITIARCTRPGND - AMWSIPLIHYRLOGKANIGCESENICELCSV

1410 1420 1430 1440 1450 1460 1470 1480 1490 1500 1510 1520 1530 1540 1550 1560 1570

30696480.p
30696478.p
83560345.q
18417765.p
AK099778.q
15239694.p
72200021.q
AK101189.q
15228078.p
83507008.q
18408845.p
44400022.q
44400021.q
72170001.q
44970023.q
83593605.q
83510478.q
37400006.q
37400005.q
AK073571.q
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83500238.q
83570660.q
37400008.q
83571573.q
AK105685.q
67820003.q
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83571523.q
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83571520.q
83571509.q
83571557.q
83523572.q
62680017.q
30694632.p
18402188.p
AK102046.q
AK064161.q
30688287.p
30688291.p
59970008.q