

Supplemental Table 1. Amino acid sequence of the various spike constructs

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| >ECDm-RSTN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| MFVFLVLLPLVSSQCVNLTRTQLPPAYTNSFTRGVYYPDKVFRSSVLHSTQDLFLPFFSNVTWFWHAIHVSGTNGTKR<br>FDNPVLPFNDGVYFASTEKSNIIRGWIFGTTLDSTQSLIVN NATNVVIKVFCEQFCNDPFLGVVYHKNNKSWMESE<br>FRVYSSANNCTFEYVSQPFLMDLEGKQGNFKNLREFVFKNIDGYFKIYSKHTPINLVRDLPQGFSALEPLVDLPIGINIT<br>RFQTLALHRSYLT PGDSSSGWTAGAAAYVGYLQPRTFLLKYNENGTITDAVDCALDPLSETKCTLSFTVEKGIYQT<br>SNFRVQPTESIVRFPNITNLCPFGEVFNATRFASVYAWNRKRISNCVADYSVLVNSASFSTFKCYGVSPTKLNLCFTN<br>VYADSFVIRGDEV RQIAPGQTGKIADYNYKLPDDFTGCVIAWNSNNLDSKVGGNYYLYRLFRKSNLKPFERDISTEY<br>QAGSTPCNGVEGFNCYFPLQSYGFQPTNGVGYQPYRVVLSFELLHAPATVCGPKKSTNLVKNKCVNFNFNGLTGT<br>GVLTESNKKFLPFQQFGRDIADTTDAVRDPQTLEILDITPCSFGGVSVITPGTNTSNQVAVLYQDVNCTEVPVAIHAD<br>QLTPTWRVYSTGSNVFQTRAGCLIGAEHVNNSYECDIPIGAGICASYQTQTNSPGGASSVASQSIIAYTMSLGAENSV<br>AYSNNISAIPTNFTISVTTEILPVSMTKTSVDCTMYICGDSTECNLLLQYGSFCTQLNRALTGIAVEQDKNTQEVFAQ<br>VKQIYKTPPIKDFGGFNFSQILPDPSKPSKRSFIEDLLFNKVTLADAGFIKQYGDCLGDIAARDLICAQKFNGLTVLPPLL<br>TDEMIAQYTSALLAGTITSGWTFGAGAAALQIPFAMQMAYRFNGIGVTQNVLYENQKLIANQFN SAIGKIQDSLSTSA<br>SALGKLQDVVNQNAQALNTLVKQLSSNFGAISSVLNDILSRDPPEAEVQIDRLITGRQLSLQTYVTQQLIRAAEIRAS<br>ANLAATKMSECVLGQSKRVDFCGKGYHLMSPQSA PHGVVFLHVTYVPAQEKNFTTAPAICHDGKAHFPREGVFV<br>SNGTHWFVTQRNFYEPQIITDNTFVSGNCDVVIGIVNNTVYDPLQPELDSFKEELDKYFKNHTSPD VDLGDISGINA<br>SVVNIQKEIDRLNEVAKNLNESLIDLQELGKYEQGTGGSMEEA INERIQEVAGSLIFRAISSIGLECQSVTSRGDLATCP<br>RGFAVTGCTCGSACGSWDVRAETTCHCQCAGMDWTGARCCRVQPDYKDDDDKGHHHHHHG  |
| >ECD-RSTN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| MFVFLVLLPLVSSQCVNLTRTQLPPAYTNSFTRGVYYPDKVFRSSVLHSTQDLFLPFFSNVTWFWHAIHVSGTNGTKR<br>FDNPVLPFNDGVYFASTEKSNIIRGWIFGTTLDSTQSLIVN NATNVVIKVFCEQFCNDPFLGVVYHKNNKSWMESE<br>FRVYSSANNCTFEYVSQPFLMDLEGKQGNFKNLREFVFKNIDGYFKIYSKHTPINLVRDLPQGFSALEPLVDLPIGINIT<br>RFQTLALHRSYLT PGDSSSGWTAGAAAYVGYLQPRTFLLKYNENGTITDAVDCALDPLSETKCTLSFTVEKGIYQT<br>SNFRVQPTESIVRFPNITNLCPFGEVFNATRFASVYAWNRKRISNCVADYSVLVNSASFSTFKCYGVSPTKLNLCFTN<br>VYADSFVIRGDEV RQIAPGQTGKIADYNYKLPDDFTGCVIAWNSNNLDSKVGGNYYLYRLFRKSNLKPFERDISTEY<br>QAGSTPCNGVEGFNCYFPLQSYGFQPTNGVGYQPYRVVLSFELLHAPATVCGPKKSTNLVKNKCVNFNFNGLTGT<br>GVLTESNKKFLPFQQFGRDIADTTDAVRDPQTLEILDITPCSFGGVSVITPGTNTSNQVAVLYQDVNCTEVPVAIHAD<br>QLTPTWRVYSTGSNVFQTRAGCLIGAEHVNNSYECDIPIGAGICASYQTQTNSPRRARSVASQSIIAYTMSLGAENSV<br>AYSNNISAIPTNFTISVTTEILPVSMTKTSVDCTMYICGDSTECNLLLQYGSFCTQLNRALTGIAVEQDKNTQEVFAQ<br>VKQIYKTPPIKDFGGFNFSQILPDPSKPSKRSFIEDLLFNKVTLADAGFIKQYGDCLGDIAARDLICAQKFNGLTVLPPLL<br>TDEMIAQYTSALLAGTITSGWTFGAGAAALQIPFAMQMAYRFNGIGVTQNVLYENQKLIANQFN SAIGKIQDSLSTSA<br>SALGKLQDVVNQNAQALNTLVKQLSSNFGAISSVLNDILSRDKVEAEVQIDRLITGRQLSLQTYVTQQLIRAAEIRAS<br>ANLAATKMSECVLGQSKRVDFCGKGYHLMSPQSA PHGVVFLHVTYVPAQEKNFTTAPAICHDGKAHFPREGVFV<br>SNGTHWFVTQRNFYEPQIITDNTFVSGNCDVVIGIVNNTVYDPLQPELDSFKEELDKYFKNHTSPD VDLGDISGINA<br>SVVNIQKEIDRLNEVAKNLNESLIDLQELGKYEQGTGGSMEEA INERIQEVAGSLIFRAISSIGLECQSVTSRGDLATCP<br>RGFAVTGCTCGSACGSWDVRAETTCHCQCAGMDWTGARCCRVQPDYKDDDDKGHHHHHHG* |
| >ECDm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| MFVFLVLLPLVSSQCVNLTRTQLPPAYTNSFTRGVYYPDKVFRSSVLHSTQDLFLPFFSNVTWFWHAIHVSGTNGTKR<br>FDNPVLPFNDGVYFASTEKSNIIRGWIFGTTLDSTQSLIVN NATNVVIKVFCEQFCNDPFLGVVYHKNNKSWMESE<br>FRVYSSANNCTFEYVSQPFLMDLEGKQGNFKNLREFVFKNIDGYFKIYSKHTPINLVRDLPQGFSALEPLVDLPIGINIT<br>RFQTLALHRSYLT PGDSSSGWTAGAAAYVGYLQPRTFLLKYNENGTITDAVDCALDPLSETKCTLSFTVEKGIYQT<br>SNFRVQPTESIVRFPNITNLCPFGEVFNATRFASVYAWNRKRISNCVADYSVLVNSASFSTFKCYGVSPTKLNLCFTN<br>VYADSFVIRGDEV RQIAPGQTGKIADYNYKLPDDFTGCVIAWNSNNLDSKVGGNYYLYRLFRKSNLKPFERDISTEY<br>QAGSTPCNGVEGFNCYFPLQSYGFQPTNGVGYQPYRVVLSFELLHAPATVCGPKKSTNLVKNKCVNFNFNGLTGT<br>GVLTESNKKFLPFQQFGRDIADTTDAVRDPQTLEILDITPCSFGGVSVITPGTNTSNQVAVLYQDVNCTEVPVAIHAD<br>QLTPTWRVYSTGSNVFQTRAGCLIGAEHVNNSYECDIPIGAGICASYQTQTNSPGGASSVASQSIIAYTMSLGAENSV                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

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| <p>AYSNNIAIPTNFTISVTTEILPVSMTKTSVDCTMYICGDSTECSNLLLQYGSFCTQLNRALTGIAVEQDKNTQEVFAQ<br/>VKQIYKTPPIKDFGGFNFSQILPDPSKPSKRSFIEDLLFNKVTLADAGFIKQYGDCLGDIAARDLICAQKFNGLTVLPPLL<br/>TDEMIAQYTSALLAGTITSGWTFGAGAAALQIPFAMQMAYRFNGIGVTQNVLYENQKLIANQFNSAIGKIQDLSSTA<br/>SALGKLQDVVNQNAQALNTLVKQLSSNFGAISSVLNDILSRDPPEAEVQIDRLITGRLQSLQTYVTQQLIRAAEIRAS<br/>ANLAATKMSECVLGQSKRVDFCGKGYHLMSPQSAHPGVVFLHVTYVPAQEKNFTTAPAICHDGKAHFPREGVFN<br/>SNGTHWFVTQRNFYEPQIITDNTFVSGNCDVVIGIVNNTVYDPLQPELDSFKEELDKYFKNHTSPDVLGDISGINA<br/>SVVNIQKEIDRLNEVAKNLNESLIDLQELGKYEQGTQDYKDDDDKGHHHHHHG</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| >ECDm-T4Fib                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <p>MFVFLVLLPLVSSQCVNLTRTQLPPAYTNSFTRGVYYPDKVFRSSVLHSTQDLFLPFFSNVTWFWHAIHVSGTNGTKR<br/>FDNPVLPFNDGVYFASTEKSNIIRGWIFGTTLDSTQSLIVN NATNVVIKVEFCNDPFLGVVYHKNNKSWMESE<br/>FRVYSSANNCTFEYVSQPFMDLEGKQGNFKNLREFVFKNIDGYFKIYSKHTPINLVRDLPQGFSALEPLVDLPIGINIT<br/>RFQTLALHRSYLT PGDSSSGW TAGAAAYYVGYLQPRTFLLKYNENGITDAVDCALDPLSETKCTLSFTVEKGIYQT<br/>SNFRVQPTESIVRFPNITNLCPFGEVFNATRFASVYAWNKRKISNCVADYSVLVNSASFSTFKCYGVSPTKLNLCFTN<br/>VYADSFVIRGDEV RQIAPGQTGKIADYNYKLPDDFTGCVIAWNSNNLDSKVGGNYYLYRLFRKSNLKPFERDISTEY<br/>QAGSTPCNGVEGFNCYFPLQSYGFQPTNGVGYQPYRVVLSFELLHAPATVCGPKKSTNLVKNKCVNFNFNGLTGT<br/>GVLTESNKKFLPFQQFGRDIADTTDAVRDPQTLEILDITPCSFGGVSITPGTNTSNQVAVLYQDVNCTEVPVAIHAD<br/>QLTPTWRVYSTGSNVFQTRAGCLIGAEHVNNSYECDIPIGAGICASYQTQTNSPGGASSVASQSIIAYTMSLGAENSV<br/>AYSNNIAIPTNFTISVTTEILPVSMTKTSVDCTMYICGDSTECSNLLLQYGSFCTQLNRALTGIAVEQDKNTQEVFAQ<br/>VKQIYKTPPIKDFGGFNFSQILPDPSKPSKRSFIEDLLFNKVTLADAGFIKQYGDCLGDIAARDLICAQKFNGLTVLPPLL<br/>TDEMIAQYTSALLAGTITSGWTFGAGAAALQIPFAMQMAYRFNGIGVTQNVLYENQKLIANQFNSAIGKIQDLSSTA<br/>SALGKLQDVVNQNAQALNTLVKQLSSNFGAISSVLNDILSRDPPEAEVQIDRLITGRLQSLQTYVTQQLIRAAEIRAS<br/>ANLAATKMSECVLGQSKRVDFCGKGYHLMSPQSAHPGVVFLHVTYVPAQEKNFTTAPAICHDGKAHFPREGVFN<br/>SNGTHWFVTQRNFYEPQIITDNTFVSGNCDVVIGIVNNTVYDPLQPELDSFKEELDKYFKNHTSPDVLGDISGINA<br/>SVVNIQKEIDRLNEVAKNLNESLIDLQELGKYEQGTGSSGGYIPEAPRDGQAYVRKDG EWVLLSTFLTGGDYKDDDD<br/>KGWSHPQFEKGGSGGGSSWSHPQFEKGHHHHHHG</p>  |
| >ECD-T4Fib                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <p>MFVFLVLLPLVSSQCVNLTRTQLPPAYTNSFTRGVYYPDKVFRSSVLHSTQDLFLPFFSNVTWFWHAIHVSGTNGTKR<br/>FDNPVLPFNDGVYFASTEKSNIIRGWIFGTTLDSTQSLIVN NATNVVIKVEFCNDPFLGVVYHKNNKSWMESE<br/>FRVYSSANNCTFEYVSQPFMDLEGKQGNFKNLREFVFKNIDGYFKIYSKHTPINLVRDLPQGFSALEPLVDLPIGINIT<br/>RFQTLALHRSYLT PGDSSSGW TAGAAAYYVGYLQPRTFLLKYNENGITDAVDCALDPLSETKCTLSFTVEKGIYQT<br/>SNFRVQPTESIVRFPNITNLCPFGEVFNATRFASVYAWNKRKISNCVADYSVLVNSASFSTFKCYGVSPTKLNLCFTN<br/>VYADSFVIRGDEV RQIAPGQTGKIADYNYKLPDDFTGCVIAWNSNNLDSKVGGNYYLYRLFRKSNLKPFERDISTEY<br/>QAGSTPCNGVEGFNCYFPLQSYGFQPTNGVGYQPYRVVLSFELLHAPATVCGPKKSTNLVKNKCVNFNFNGLTGT<br/>GVLTESNKKFLPFQQFGRDIADTTDAVRDPQTLEILDITPCSFGGVSITPGTNTSNQVAVLYQDVNCTEVPVAIHAD<br/>QLTPTWRVYSTGSNVFQTRAGCLIGAEHVNNSYECDIPIGAGICASYQTQTNSPRRARSVASQSIIAYTMSLGAENSV<br/>AYSNNIAIPTNFTISVTTEILPVSMTKTSVDCTMYICGDSTECSNLLLQYGSFCTQLNRALTGIAVEQDKNTQEVFAQ<br/>VKQIYKTPPIKDFGGFNFSQILPDPSKPSKRSFIEDLLFNKVTLADAGFIKQYGDCLGDIAARDLICAQKFNGLTVLPPLL<br/>TDEMIAQYTSALLAGTITSGWTFGAGAAALQIPFAMQMAYRFNGIGVTQNVLYENQKLIANQFNSAIGKIQDLSSTA<br/>SALGKLQDVVNQNAQALNTLVKQLSSNFGAISSVLNDILSRDLKVEAEVQIDRLITGRLQSLQTYVTQQLIRAAEIRAS<br/>ANLAATKMSECVLGQSKRVDFCGKGYHLMSPQSAHPGVVFLHVTYVPAQEKNFTTAPAICHDGKAHFPREGVFN<br/>SNGTHWFVTQRNFYEPQIITDNTFVSGNCDVVIGIVNNTVYDPLQPELDSFKEELDKYFKNHTSPDVLGDISGINA<br/>SVVNIQKEIDRLNEVAKNLNESLIDLQELGKYEQGTGSSGGYIPEAPRDGQAYVRKDG EWVLLSTFLTGGDYKDDDD<br/>KGWSHPQFEKGGSGGGSSWSHPQFEKGHHHHHHG</p> |
| >ECDm-GCN4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <p>MFVFLVLLPLVSSQCVNLTRTQLPPAYTNSFTRGVYYPDKVFRSSVLHSTQDLFLPFFSNVTWFWHAIHVSGTNGTKR<br/>FDNPVLPFNDGVYFASTEKSNIIRGWIFGTTLDSTQSLIVN NATNVVIKVEFCNDPFLGVVYHKNNKSWMESE<br/>FRVYSSANNCTFEYVSQPFMDLEGKQGNFKNLREFVFKNIDGYFKIYSKHTPINLVRDLPQGFSALEPLVDLPIGINIT</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

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| RFQTLALHRSYLTGDSGGWTAGAAAYVGYLQPRTFLLKYNENGTITDAVDCALDPLSETKCTLSFTVEKGIYQT<br>SNFRVQPTESIVRFPNITNLCPFGEVFNATRFASVYAWNRRKRISNCVADYSVLNSASFSTFKCYGVSPTKLNDLCFTN<br>VYADSFVIRGDEVQRQIAPGQTGKIADYNYKLPDDFTGCVIAWNSNNLDSKVGGNYNYLRLFRKSNLKPFERDISTEY<br>QAGSTPCNGVEGFNCYFPLQSYGFQPTNGVGYPYRVVLSFELLHAPATVCGPKKSTNLVKNKCVNFNFNGLTGT<br>GVLTESNKKFLPFQQFGRDIADTTDAVRDPQTLEILDITPCSFGGVSIVITPGTNTSNQVAVLYQDVNCTEVPVAIHAD<br>QLTPTWRVYSTGSNVFQTRAGCLIGAHEVNNSYECDIPIGAGICASYQTQTNPPGASSVASQSIIAYTMSLGAENSV<br>AYSNNISIAIPTNFTISVTTEILPVSMTKTSVDCTMYICGDSTECNLLLQYGSFCTQLNRALTGIAVEQDKNTQEVFAQ<br>VKQIYKTPPIKDFGGFNFSQILPDPSKPSKRSFIEDLLFNKVTADAGFIKQYGDCLGDIAARDLCAQKFNGLTVPPLL<br>TDEMIAQYTSALLAGTITSGWTFGAGAAALQIPFAMQMAYRFNGIGVGTQNVLYENQKLIANQFNQSAIGKIQDLSSTA<br>SALGKLQDVVNQNAQALNTLVKQLSSNFGAISSVLNDILSRDLPPEAEVQIDRLITGRQLSLQTYVTQQLIRAAEIRAS<br>ANLAATKMSECVLGQSKRVDFCGKGYHLMSFPQSAPHGVVFLHVTYVPAQEKNTTAPAICHGDKAHFPREGVVF<br>SNGTHWFVTQRNFYEPQIITDNTFVSGNCDVVIGIVNNTVYDPLQPELDSFKEELDKYFKNHTSPDVLGDISGINA<br>SVVNIQKEIDRLNEVAKNLNESLIDLQELGKYEQGTGSSGMKQIEDKIEILSKIYHIENEIARIKKLIGEVTGGDYKDDD<br>DKGHHHHHHG                                                                                                                                                                                                                                                     |
| >ECD-GCN4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| MFVFLVLLPLVSSQCVNLTRTQLPPAYTNSFTRGVYYPDKVFRSSVLHSTQDLFLPFFSNVTWFWHAIHVSGTNGTKR<br>FDNPVLPFNDGVYFASTEKSNIIRGWIFGTTLDSTQSLIVNATNVVIKVEFCQFCNDPFLGVYHKNKNSWMESE<br>FRVYSSANNCTFEYVSQPFMDLEGKQGNFKNLREFVFNIDGYFKIYSKHTPINLVRDLPQGFSALEPLVDLPIGINIT<br>RFQTLALHRSYLTGDSGGWTAGAAAYVGYLQPRTFLLKYNENGTITDAVDCALDPLSETKCTLSFTVEKGIYQT<br>SNFRVQPTESIVRFPNITNLCPFGEVFNATRFASVYAWNRRKRISNCVADYSVLNSASFSTFKCYGVSPTKLNDLCFTN<br>VYADSFVIRGDEVQRQIAPGQTGKIADYNYKLPDDFTGCVIAWNSNNLDSKVGGNYNYLRLFRKSNLKPFERDISTEY<br>QAGSTPCNGVEGFNCYFPLQSYGFQPTNGVGYPYRVVLSFELLHAPATVCGPKKSTNLVKNKCVNFNFNGLTGT<br>GVLTESNKKFLPFQQFGRDIADTTDAVRDPQTLEILDITPCSFGGVSIVITPGTNTSNQVAVLYQDVNCTEVPVAIHAD<br>QLTPTWRVYSTGSNVFQTRAGCLIGAHEVNNSYECDIPIGAGICASYQTQTNPPRRARSVASQSIIAYTMSLGAENSV<br>AYSNNISIAIPTNFTISVTTEILPVSMTKTSVDCTMYICGDSTECNLLLQYGSFCTQLNRALTGIAVEQDKNTQEVFAQ<br>VKQIYKTPPIKDFGGFNFSQILPDPSKPSKRSFIEDLLFNKVTADAGFIKQYGDCLGDIAARDLCAQKFNGLTVPPLL<br>TDEMIAQYTSALLAGTITSGWTFGAGAAALQIPFAMQMAYRFNGIGVGTQNVLYENQKLIANQFNQSAIGKIQDLSSTA<br>SALGKLQDVVNQNAQALNTLVKQLSSNFGAISSVLNDILSRDLPKVEAEVQIDRLITGRQLSLQTYVTQQLIRAAEIRAS<br>ANLAATKMSECVLGQSKRVDFCGKGYHLMSFPQSAPHGVVFLHVTYVPAQEKNTTAPAICHGDKAHFPREGVVF<br>SNGTHWFVTQRNFYEPQIITDNTFVSGNCDVVIGIVNNTVYDPLQPELDSFKEELDKYFKNHTSPDVLGDISGINA<br>SVVNIQKEIDRLNEVAKNLNESLIDLQELGKYEQGTGSSGMKQIEDKIEILSKIYHIENEIARIKKLIGEVTGGDYKDDD<br>DKGHHHHHHG |
| >S1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| MFVFLVLLPLVSSQCVNLTRTQLPPAYTNSFTRGVYYPDKVFRSSVLHSTQDLFLPFFSNVTWFWHAIHVSGTNGTKR<br>FDNPVLPFNDGVYFASTEKSNIIRGWIFGTTLDSTQSLIVNATNVVIKVEFCQFCNDPFLGVYHKNKNSWMESE<br>FRVYSSANNCTFEYVSQPFMDLEGKQGNFKNLREFVFNIDGYFKIYSKHTPINLVRDLPQGFSALEPLVDLPIGINIT<br>RFQTLALHRSYLTGDSGGWTAGAAAYVGYLQPRTFLLKYNENGTITDAVDCALDPLSETKCTLSFTVEKGIYQT<br>SNFRVQPTESIVRFPNITNLCPFGEVFNATRFASVYAWNRRKRISNCVADYSVLNSASFSTFKCYGVSPTKLNDLCFTN<br>VYADSFVIRGDEVQRQIAPGQTGKIADYNYKLPDDFTGCVIAWNSNNLDSKVGGNYNYLRLFRKSNLKPFERDISTEY<br>QAGSTPCNGVEGFNCYFPLQSYGFQPTNGVGYPYRVVLSFELLHAPATVCGPKKSTNLVKNKCVNFNFNGLTGT<br>GVLTESNKKFLPFQQFGRDIADTTDAVRDPQTLEILDITPCSFGGVSIVITPGTNTSNQVAVLYQDVNCTEVPVAIHAD<br>QLTPTWRVYSTGSNVFQTRAGCLIGAHEVNNSYECDIPIGAGICASYQTQTNPPGASSGTDYKDDDDKGHHHHH<br>HG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| >S2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| MFVFLVLLPLVSSQCVASQSIIAYTMSLGAENSVAYSNNISIAIPTNFTISVTTEILPVSMTKTSVDCTMYICGDSTECNLLQYGSFCTQLNRALTGIAVEQDKNTQEVFAQVKQIYKTPPIKDFGGFNFSQILPDPSKPSKRSFIEDLLFNKVTLADAGFIKQYGDCLGDIAARDLCAQKFNGLTVPPLL<br>TDEMIAQYTSALLAGTITSGWTFGAGAAALQIPFAMQMAYRFNG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

IGVTQNVLYENQKLIANQFNSAIGKIQDSLSTASALGKLQDVVNQNAQALNTLVKQLSSNFGAISSVLNDILSRDPP  
EAEVQIDRLITGRLQSLQTYVTQQLIRAAEIRASANLAATKMSECVLGQSKRVDFCGKGYHLMSFPQSAPHGVVFLH  
VTYVPAQEKNFTTAPAICHGKAHFPREGVFVSNGTHWFVTQRNFYEPQIITTDNTFVSGNCDVVIGIVNNTVYDPL  
QPELDSFKEELDKYFKNHTSPDVDLGDISGINASVVNIQKEIDRLNEVAKNLNESLIDLQELGKYEQGTDYKDDDDKG  
HHHHHHG\*