

|             |                                                              |
|-------------|--------------------------------------------------------------|
| Hs_SGCY1    | .....                                                        |
| Ml_sGC3     | .....                                                        |
| Oc_sGC3     | .....                                                        |
| Ml_sGC1     | .....                                                        |
| Ca_sGC1     | .....                                                        |
| Pf_sGC2     | .....                                                        |
| Pb_sGC2     | .....                                                        |
| Oc_sGC2     | .....                                                        |
| Ml_sGC2     | .....                                                        |
| Vs_sGC2     | .....                                                        |
| Hc_sGC1     | .....                                                        |
| Dg_sGC1     | .....                                                        |
| Bea_sGC1    | .....                                                        |
| Hc_sGC2     | .....                                                        |
| Oc_sGC1     | .....                                                        |
| Ml_sGC4     | .....                                                        |
| Oc_sGC4     | .....                                                        |
| Hc_sGC4     | .....                                                        |
| Pp_sGC2     | .....                                                        |
| Pb_sGC4     | .....                                                        |
| Hs_SGCY3    | .....                                                        |
| Hs_SGCY2    | .....                                                        |
| Ed_sGC4     | .....                                                        |
| Pb_Nit1     | .....                                                        |
| Ed_Nit1     | .....                                                        |
| Hc_Nit1     | MMMWPFLLLTSSLFYIVHSGAPIYGFMDLFRPDFEQQQGalwsENPSFLGFevGPgAlVA |
| Pf_Nit12    | .....                                                        |
| Pf_Nit1     | .....                                                        |
| Ps_Nit1     | .....                                                        |
| Ca_Nit1     | .....                                                        |
| Bea_Nit1    | .....                                                        |
| Bi_sGC1     | .....                                                        |
| Bi_Nit1     | .....                                                        |
| Dg_Nit1     | .....                                                        |
| Lt_Nit1     | .....                                                        |
| Ml_NIT-like | .....                                                        |
| Vs_Nit1     | .....                                                        |
| Oc_Nit1     | .....                                                        |
| Ocg_Nit1    | .....                                                        |
| Ocg_Nit12   | .....                                                        |

|             |                                                             |
|-------------|-------------------------------------------------------------|
| Hs_SGCY1    | .....                                                       |
| Ml_sGC3     | .....                                                       |
| Oc_sGC3     | .....                                                       |
| Ml_sGC1     | .....                                                       |
| Ca_sGC1     | .....                                                       |
| Pf_sGC2     | .....                                                       |
| Pb_sGC2     | .....MLGELLFNQLTcPYTKAGQCKLayLKF                            |
| Oc_sGC2     | .....                                                       |
| Ml_sGC2     | .....                                                       |
| Vs_sGC2     | .....                                                       |
| Hc_sGC1     | .....                                                       |
| Dg_sGC1     | .....                                                       |
| Bea_sGC1    | .....                                                       |
| Hc_sGC2     | .....                                                       |
| Oc_sGC1     | .....                                                       |
| Ml_sGC4     | .....                                                       |
| Oc_sGC4     | .....                                                       |
| Hc_sGC4     | .....                                                       |
| Pp_sGC2     | .....                                                       |
| Pb_sGC4     | .....                                                       |
| Hs_SGCY3    | .....                                                       |
| Hs_SGCY2    | .....                                                       |
| Ed_sGC4     | .....                                                       |
| Pb_Nit1     | .....                                                       |
| Ed_Nit1     | .....                                                       |
| Hc_Nit1     | LDELGKKNARGDLELLTAWDIERTEWDKAQTRKNLSTIECGDEWKTERCLENLRSTGRQ |
| Pf_Nit12    | .....                                                       |
| Pf_Nit1     | .....                                                       |
| Ps_Nit1     | .....                                                       |
| Ca_Nit1     | .....                                                       |
| Bea_Nit1    | .....                                                       |
| Bi_sGC1     | .....                                                       |
| Bi_Nit1     | .....                                                       |
| Dg_Nit1     | .....                                                       |
| Lt_Nit1     | .....                                                       |
| Ml_NIT-like | .....                                                       |
| Vs_Nit1     | .....                                                       |
| Oc_Nit1     | .....                                                       |
| Ocg_Nit1    | .....                                                       |
| Ocg_Nit12   | .....                                                       |

|             |                                                               |
|-------------|---------------------------------------------------------------|
| Hs_SGCY1    | .....                                                         |
| Ml_sGC3     | .....                                                         |
| Oc_sGC3     | .....                                                         |
| Ml_sGC1     | .....                                                         |
| Ca_sGC1     | .....                                                         |
| Pf_sGC2     | .....                                                         |
| Pb_sGC2     | KECVSKTQGLFLSSAKTQNAQKANLYYLQQTCLILIRSTLTTLKQASFRIANLMRVLCSEA |
| Oc_sGC2     | .....                                                         |
| Ml_sGC2     | .....                                                         |
| Vs_sGC2     | .....                                                         |
| Hc_sGC1     | .....                                                         |
| Dg_sGC1     | .....                                                         |
| Bea_sGC1    | .....                                                         |
| Hc_sGC2     | .....                                                         |
| Oc_sGC1     | .....                                                         |
| Ml_sGC4     | .....                                                         |
| Oc_sGC4     | .....                                                         |
| Hc_sGC4     | .....                                                         |
| Pp_sGC2     | .....                                                         |
| Pb_sGC4     | .....                                                         |
| Hs_SGCY3    | .....                                                         |
| Hs_SGCY2    | .....                                                         |
| Ed_sGC4     | .....                                                         |
| Pb_Nit1     | .....                                                         |
| Ed_Nit1     | .....                                                         |
| Hc_Nit1     | PTLIIGSHKDLASQTSSLHSFINSGLFVYCSADISNSAVVSGPTKDSKGLLNTVRMDNSV  |
| Pf_Nit12    | .....                                                         |
| Pf_Nit1     | .....                                                         |
| Ps_Nit1     | .....                                                         |
| Ca_Nit1     | .....                                                         |
| Bea_Nit1    | .....                                                         |
| Bi_sGC1     | .....                                                         |
| Bi_Nit1     | .....                                                         |
| Dg_Nit1     | .....                                                         |
| Lt_Nit1     | .....                                                         |
| Ml_NIT-like | .....                                                         |
| Vs_Nit1     | .....                                                         |
| Oc_Nit1     | .....                                                         |
| Ocg_Nit1    | .....                                                         |
| Ocg_Nit12   | .....                                                         |

|             |                                                               |
|-------------|---------------------------------------------------------------|
| Hs_SGCY1    | .....                                                         |
| Ml_sGC3     | .....                                                         |
| Oc_sGC3     | .....                                                         |
| Ml_sGC1     | .....                                                         |
| Ca_sGC1     | .....                                                         |
| Pf_sGC2     | .....                                                         |
| Pb_sGC2     | VQDPTKVEANVRAQAAERQKKHLKSNAERQLTKEQKTEKKIAKLTEDTTDGVHVTVPFKID |
| Oc_sGC2     | .....                                                         |
| Ml_sGC2     | .....                                                         |
| Vs_sGC2     | .....                                                         |
| Hc_sGC1     | .....                                                         |
| Dg_sGC1     | .....                                                         |
| Bea_sGC1    | .....                                                         |
| Hc_sGC2     | .....                                                         |
| Oc_sGC1     | .....                                                         |
| Ml_sGC4     | .....                                                         |
| Oc_sGC4     | .....                                                         |
| Hc_sGC4     | .....                                                         |
| Pp_sGC2     | .....                                                         |
| Pb_sGC4     | .....                                                         |
| Hs_SGCY3    | .....                                                         |
| Hs_SGCY2    | .....                                                         |
| Ed_sGC4     | .....                                                         |
| Pb_Nit1     | .....                                                         |
| Ed_Nit1     | .....                                                         |
| Hc_Nit1     | FSGNVQAFLLKHYGWTQHLFIISGVFQADYRSGAVWDDDTLNLVDTSSQKKRVRFYPFSFM |
| Pf_Nit12    | .....                                                         |
| Pf_Nit1     | .....                                                         |
| Ps_Nit1     | .....                                                         |
| Ca_Nit1     | .....                                                         |
| Bea_Nit1    | .....                                                         |
| Bi_sGC1     | .....                                                         |
| Bi_Nit1     | .....                                                         |
| Dg_Nit1     | .....                                                         |
| Lt_Nit1     | .....                                                         |
| Ml_NIT-like | .....                                                         |
| Vs_Nit1     | .....                                                         |
| Oc_Nit1     | .....                                                         |
| Ocg_Nit1    | .....                                                         |
| Ocg_Nit12   | .....                                                         |

|             |                                                               |
|-------------|---------------------------------------------------------------|
| Hs_SGCY1    | .....                                                         |
| Ml_sGC3     | .....                                                         |
| Oc_sGC3     | .....                                                         |
| Ml_sGC1     | .....                                                         |
| Ca_sGC1     | .....                                                         |
| Pf_sGC2     | .....                                                         |
| Pb_sGC2     | NLSSPQHKYK VETNAQQFLLTGIMLMHKDHNLVIVEGGPKALRKFKRLMLLRIRWNEDVR |
| Oc_sGC2     | .....                                                         |
| Ml_sGC2     | .....                                                         |
| Vs_sGC2     | .....                                                         |
| Hc_sGC1     | .....                                                         |
| Dg_sGC1     | .....                                                         |
| Bea_sGC1    | .....                                                         |
| Hc_sGC2     | .....                                                         |
| Oc_sGC1     | .....                                                         |
| Ml_sGC4     | .....                                                         |
| Oc_sGC4     | .....                                                         |
| Hc_sGC4     | .....                                                         |
| Pp_sGC2     | .....                                                         |
| Pb_sGC4     | .....                                                         |
| Hs_SGCY3    | .....                                                         |
| Hs_SGCY2    | .....                                                         |
| Ed_sGC4     | .....                                                         |
| Pb_Nit1     | .....                                                         |
| Ed_Nit1     | .....                                                         |
| Hc_Nit1     | EIKDGNTPPFREDARKERTELYEEIFKGTAIKHHSRIVLLFGSQRMVRDMMLEAYDAGMM  |
| Pf_Nit12    | .....                                                         |
| Pf_Nit1     | .....                                                         |
| Ps_Nit1     | .....                                                         |
| Ca_Nit1     | .....MA                                                       |
| Bea_Nit1    | .....                                                         |
| Bi_sGC1     | .....                                                         |
| Bi_Nit1     | .....                                                         |
| Dg_Nit1     | .....                                                         |
| Lt_Nit1     | .....                                                         |
| Ml_NIT-like | .....                                                         |
| Vs_Nit1     | .....                                                         |
| Oc_Nit1     | .....                                                         |
| Ocg_Nit1    | .....                                                         |
| Ocg_Nit12   | .....                                                         |

|             |                                                               |
|-------------|---------------------------------------------------------------|
| Hs_SGCY1    | .....                                                         |
| Ml_sGC3     | .....                                                         |
| Oc_sGC3     | .....                                                         |
| Ml_sGC1     | .....                                                         |
| Ca_sGC1     | .....                                                         |
| Pf_sGC2     | .....                                                         |
| Pb_sGC2     | NRKRCKTLRMHGQQYTNTFTFLAGYKKDTLLFKVDIKINCRRDFCRKGLSRQIQLSKSLGL |
| Oc_sGC2     | .....                                                         |
| Ml_sGC2     | .....                                                         |
| Vs_sGC2     | .....                                                         |
| Hc_sGC1     | .....                                                         |
| Dg_sGC1     | .....                                                         |
| Bea_sGC1    | .....                                                         |
| Hc_sGC2     | .....                                                         |
| Oc_sGC1     | .....                                                         |
| Ml_sGC4     | .....                                                         |
| Oc_sGC4     | .....                                                         |
| Hc_sGC4     | .....                                                         |
| Pp_sGC2     | .....                                                         |
| Pb_sGC4     | .....                                                         |
| Hs_SGCY3    | .....                                                         |
| Hs_SGCY2    | .....                                                         |
| Ed_sGC4     | .....                                                         |
| Pb_Nit1     | .....                                                         |
| Ed_Nit1     | .....                                                         |
| Hc_Nit1     | EKNEYVFIIIP TNYFPLYNWTSVLDNVYYDLSQKERDEDARKAFQSAFIVTAEVDTKLFD |
| Pf_Nit12    | .....                                                         |
| Pf_Nit1     | .....                                                         |
| Ps_Nit1     | .....                                                         |
| Ca_Nit1     | QSNEYGFIIIP TNYFPLYTWEGKDDDL YNKSQKYRDEDARKAFQSAFIITADIDTSRFA |
| Bea_Nit1    | .....                                                         |
| Bi_sGC1     | .....                                                         |
| Bi_Nit1     | .....                                                         |
| Dg_Nit1     | .....                                                         |
| Lt_Nit1     | .....                                                         |
| Ml_NIT-like | .....                                                         |
| Vs_Nit1     | .....                                                         |
| Oc_Nit1     | .....                                                         |
| Ocg_Nit1    | .....                                                         |
| Ocg_Nit12   | .....                                                         |

|             |                                                              |
|-------------|--------------------------------------------------------------|
| Hs_SGCY1    | .....                                                        |
| Ml_sGC3     | .....                                                        |
| Oc_sGC3     | .....                                                        |
| Ml_sGC1     | .....                                                        |
| Ca_sGC1     | .....                                                        |
| Pf_sGC2     | .....                                                        |
| Pb_sGC2     | GHVREHRFRRTVNQRDMQSERGERETIINVVEDIKKTVRSFECIQLTMIHFLVVDLVKL  |
| Oc_sGC2     | .....                                                        |
| Ml_sGC2     | .....                                                        |
| Vs_sGC2     | .....                                                        |
| Hc_sGC1     | .....                                                        |
| Dg_sGC1     | .....                                                        |
| Bea_sGC1    | .....                                                        |
| Hc_sGC2     | .....                                                        |
| Oc_sGC1     | .....                                                        |
| Ml_sGC4     | .....                                                        |
| Oc_sGC4     | .....                                                        |
| Hc_sGC4     | .....                                                        |
| Pp_sGC2     | .....                                                        |
| Pb_sGC4     | .....                                                        |
| Hs_SGCY3    | .....                                                        |
| Hs_SGCY2    | .....                                                        |
| Ed_sGC4     | .....                                                        |
| Pb_Nit1     | .....                                                        |
| Ed_Nit1     | .....                                                        |
| Hc_Nit1     | NFTEKVKERAKDAP.FEYEFSEGREVPLYAANYHDAVLLWSYAVEHHYNATDSTIDVPKL |
| Pf_Nit12    | .....                                                        |
| Pf_Nit1     | .....                                                        |
| Ps_Nit1     | .....                                                        |
| Ca_Nit1     | EFEENVKERAKQPPFDYDFDKAKRQVPLYAANYHDAVLLWAYALRNHYNSAEKSINVSAL |
| Bea_Nit1    | .....FNYTFPPNRKLPPLYAANYHDAVLLWAYAIKHHYDPEKKGLQVEEL          |
| Bi_sGC1     | .....                                                        |
| Bi_Nit1     | .....                                                        |
| Dg_Nit1     | .....                                                        |
| Lt_Nit1     | .....                                                        |
| Ml_NIT-like | .....                                                        |
| Vs_Nit1     | .....                                                        |
| Oc_Nit1     | .....                                                        |
| Ocg_Nit1    | .....                                                        |
| Ocg_Nit12   | .....                                                        |

|             |                                                                  |
|-------------|------------------------------------------------------------------|
| Hs_SGCY1    | .....                                                            |
| Ml_sGC3     | .....                                                            |
| Oc_sGC3     | .....                                                            |
| Ml_sGC1     | .....                                                            |
| Ca_sGC1     | .....                                                            |
| Pf_sGC2     | .....                                                            |
| Pb_sGC2     | YKPKRKGGKGA VRPLSPDNGSVGGGSVNSWDKI QEDFNDIVDSTGKFTLLIPLPPP I PCL |
| Oc_sGC2     | .....                                                            |
| Ml_sGC2     | .....                                                            |
| Vs_sGC2     | .....                                                            |
| Hc_sGC1     | .....                                                            |
| Dg_sGC1     | .....                                                            |
| Bea_sGC1    | .....                                                            |
| Hc_sGC2     | .....                                                            |
| Oc_sGC1     | .....                                                            |
| Ml_sGC4     | .....                                                            |
| Oc_sGC4     | .....                                                            |
| Hc_sGC4     | .....                                                            |
| Pp_sGC2     | .....                                                            |
| Pb_sGC4     | .....MFCT                                                        |
| Hs_SGCY3    | .....MSRRKISSESFSSLGSDYLETSPEEEGECPLSRLCWN GSR S                 |
| Hs_SGCY2    | .....                                                            |
| Ed_sGC4     | .....                                                            |
| Pb_Nit1     | .....                                                            |
| Ed_Nit1     | .....                                                            |
| Hc_Nit1     | YNRTYTKEDFHGIEPVTGNIKLNEFGDRVNSFVFWHLDQNSQ.WEQVGRFANGEYTVLKA     |
| Pf_Nit12    | .....                                                            |
| Pf_Nit1     | .....                                                            |
| Ps_Nit1     | .....                                                            |
| Ca_Nit1     | YNRKFNASNFGGIEPITGDIELDEYGDRINRFKFWHLDADGQKWVEVGKYDGG EYKEIIP    |
| Bea_Nit1    | YDKTFTKEHFNGIEPITGNIKLDANGDRENSFLFWHLDHNGE.WEKVGQYVNDKYEV L VN   |
| Bi_sGC1     | .....                                                            |
| Bi_Nit1     | .....                                                            |
| Dg_Nit1     | .....                                                            |
| Lt_Nit1     | .....                                                            |
| Ml_NIT-like | .....                                                            |
| Vs_Nit1     | .....                                                            |
| Oc_Nit1     | .....                                                            |
| Ocg_Nit1    | .....                                                            |
| Ocg_Nit12   | .....                                                            |

|             |                                                              |
|-------------|--------------------------------------------------------------|
| Hs_SGCY1    | .....                                                        |
| Ml_sGC3     | .....                                                        |
| Oc_sGC3     | .....                                                        |
| Ml_sGC1     | .....                                                        |
| Ca_sGC1     | .....                                                        |
| Pf_sGC2     | .....                                                        |
| Pb_sGC2     | VRSSFPDKKSLNKATFSIQSKHAFSHRMTKGMTVEGLNAEMLWTMMYIYGNLDYPVVVTL |
| Oc_sGC2     | .....                                                        |
| Ml_sGC2     | .....                                                        |
| Vs_sGC2     | .....                                                        |
| Hc_sGC1     | .....                                                        |
| Dg_sGC1     | .....                                                        |
| Bea_sGC1    | .....                                                        |
| Hc_sGC2     | .....                                                        |
| Oc_sGC1     | .....                                                        |
| Ml_sGC4     | .....                                                        |
| Oc_sGC4     | .....                                                        |
| Hc_sGC4     | .....                                                        |
| Pp_sGC2     | .....                                                        |
| Pb_sGC4     | .....                                                        |
| Hs_SGCY3    | KLKDLKITGECPFSLAPGQVPNESSEEAAGSSESCKATVPICQDIPEKNIQESLPQRKT  |
| Hs_SGCY2    | PPGPLEPSPAAAAAAPAPTPAASAAAAAATAGARRVQRRRRVNLDSLGESISRLTAPS   |
| Ed_sGC4     | .....                                                        |
| Pb_Nit1     | .....                                                        |
| Ed_Nit1     | .....                                                        |
| Hc_Nit1     | ENEIAWPNGGKSAPPYEPVCGFRNEKCPDRTSLVIGVSVGVSAALLVLVAGLFVMTMYRK |
| Pf_Nit12    | .....                                                        |
| Pf_Nit1     | .....                                                        |
| Ps_Nit1     | .....                                                        |
| Ca_Nit1     | TDKIAWPNGGTRKAPPAEPECDFGKGC.KSKSQTIASISVGVAAILVAGFIVMAYMYRK  |
| Bea_Nit1    | EADIAWPNAAKSAPQAEPECDFGKGC.DN.TLTIAIGATTGAVAILVSGLAVMYMYRK   |
| Bi_sGC1     | .....                                                        |
| Bi_Nit1     | .....                                                        |
| Dg_Nit1     | .....                                                        |
| Lt_Nit1     | .....                                                        |
| Ml_NIT-like | .....                                                        |
| Vs_Nit1     | .....                                                        |
| Oc_Nit1     | .....                                                        |
| Ocg_Nit1    | .....                                                        |
| Ocg_Nit12   | .....                                                        |

## STYKc protein kinase domain

|             |                                                               |    |    |    |    |    |
|-------------|---------------------------------------------------------------|----|----|----|----|----|
|             | 1                                                             | 10 | 20 | 30 | 40 | 50 |
| Hs_SGCY1    | .MYGFVNHALELLVIRNYGPEVWEDIKKEAQLDEEGQFLVRIIYDDSKTYDLVAAASKVL  |    |    |    |    |    |
| Ml_sGC3     | .....                                                         |    |    |    |    |    |
| Oc_sGC3     | .....                                                         |    |    |    |    |    |
| Ml_sGC1     | .....                                                         |    |    |    |    |    |
| Ca_sGC1     | .....                                                         |    |    |    |    |    |
| Pf_sGC2     | .....                                                         |    |    |    |    |    |
| Pb_sGC2     | FAYKSKQPNVNQESFSSYIAPFQLSISSWPRTLETNYATKTQFFRDLENLRSQIDAQQLR  |    |    |    |    |    |
| Oc_sGC2     | .....                                                         |    |    |    |    |    |
| Ml_sGC2     | .....                                                         |    |    |    |    |    |
| Vs_sGC2     | .....                                                         |    |    |    |    |    |
| Hc_sGC1     | .....                                                         |    |    |    |    |    |
| Dg_sGC1     | .....                                                         |    |    |    |    |    |
| Bea_sGC1    | .....                                                         |    |    |    |    |    |
| Hc_sGC2     | .....                                                         |    |    |    |    |    |
| Oc_sGC1     | .....                                                         |    |    |    |    |    |
| Ml_sGC4     | .....                                                         |    |    |    |    |    |
| Oc_sGC4     | .....                                                         |    |    |    |    |    |
| Hc_sGC4     | .....                                                         |    |    |    |    |    |
| Pp_sGC2     | .....                                                         |    |    |    |    |    |
| Pb_sGC4     | .....                                                         |    |    |    |    |    |
| Hs_SGCY3    | SRSRVYLHTLAESICKLIFPEFERLNVALQRTLAKHKIKESRKSLEREDFEKTIAEQAVA  |    |    |    |    |    |
| Hs_SGCY2    | PQTIQQTTLKRTLQYYEHQVIGYRDAEKNFHNISNRCSYADHSNKEEIEDVSGILQCTANI |    |    |    |    |    |
| Ed_sGC4     | .....                                                         |    |    |    |    |    |
| Pb_Nit1     | .....                                                         |    |    |    |    |    |
| Ed_Nit1     | .....                                                         |    |    |    |    |    |
| Hc_Nit1     | ARFEAALSAMSWKIPTSEMRDIGRDPLGSSVFGSRKSSLGTRSSLNSNPS.NLKKPTCQF  |    |    |    |    |    |
| Pf_Nit12    | .....                                                         |    |    |    |    |    |
| Pf_Nit1     | .....                                                         |    |    |    |    |    |
| Ps_Nit1     | .....                                                         |    |    |    |    |    |
| Ca_Nit1     | ARYEAEELHAMNWKIQMTEIRNINNSKLGSSIFGT.RSRLTMDSONSSNPSAKVNGRHTQY |    |    |    |    |    |
| Bea_Nit1    | VTYEAALAAMSWRIPINNVRDVARDPLGSSVFGSRRSMLATPDSSLSSQSTNLKGKTQQF  |    |    |    |    |    |
| Bi_sGC1     | .....                                                         |    |    |    |    |    |
| Bi_Nit1     | .....                                                         |    |    |    |    |    |
| Dg_Nit1     | .....                                                         |    |    |    |    |    |
| Lt_Nit1     | .....                                                         |    |    |    |    |    |
| Ml_NIT-like | .....                                                         |    |    |    |    |    |
| Vs_Nit1     | .....                                                         |    |    |    |    |    |
| Oc_Nit1     | .....                                                         |    |    |    |    |    |
| Ocg_Nit1    | .....                                                         |    |    |    |    |    |
| Ocg_Nit12   | .....                                                         |    |    |    |    |    |

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-----
60      70      80      90      100     110
Hs_SGCY1 NLNAGEILQMFGKMFVFCQESGYDTILRVLGSNVREFLQNLDALHDHLATIIYPGMRAPS
Ml_sGC3  .....
Oc_sGC3  .....
Ml_sGC1  .....
Ca_sGC1  .....
Pf_sGC2  .....
Pb_sGC2  AEEAFKAYHIMIKIIYEGVIQSLQGGSFSLVWNTLVITYETIIFSRYQLFLIESVGVMYFM
Oc_sGC2  .....
Ml_sGC2  .....
Vs_sGC2  .....
Hc_sGC1  .....
Dg_sGC1  .....
Bea_sGC1 .....
Hc_sGC2  .....
Oc_sGC1  .....
Ml_sGC4  .....
Oc_sGC4  .....
Hc_sGC4  .....
Pp_sGC2  .....
Pb_sGC4  .....
Hs_SGCY3 AGVPVEVIKESLGEEVFKICYEEDENILGVVGGTLKDFLNSFSTLLKQSSHCQEAGKRGR
Hs_SGCY2 LGLKFEEIQKRFGEFFNICFHENERVLRVGGTLQDFPFGFDALLEHIRTSTFGKQATLE
Ed_sGC4  .....
Pb_Nit1  .....
Ed_Nit1  .....
Hc_Nit1  FSKRAQYQNKVVALKKTILPQYFTVNRELMIEMKTLKELRN..ENVLTVYGAIIDHDVCYL
Pf_Nit12 .....
Pf_Nit1  .....
Ps_Nit1  .....
Ca_Nit1  FSKRAYYQNKVVAMKVLPQYMTINRSLMVEMKALKELRN..DNLLTVHGAISD.NLCYL
Bea_Nit1 FSRRGQYENKIVALKTIVLPQYMNITRELMVQMKTLKDLRN..ENLLTVYGAIIERDISYL
Bi_sGC1  .....
Bi_Nit1  .....
Dg_Nit1  .....
Lt_Nit1  .....
Ml_NIT-like .....
Vs_Nit1  .....
Oc_Nit1  .....
Ocg_Nit1 .....
Ocg_Nit12 .....

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## STYKc protein kinase domain

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-----
120     130     140     150     160     170
Hs_SGCY1 FRCT...DAEKKGKGLILHYYSEREGLDIVIGIIKTVAAQQIHGTEIDMKVVIQQRNEECD
Ml_sGC3  .....MYGFVFDAIRLGCFFKDFNKKTW
Oc_sGC3  .....
Ml_sGC1  .....
Ca_sGC1  .....
Pf_sGC2  .....
Pb_sGC2  NGTISLDIHNLFIGALKLHDYSLQFSQIYGGDTIRSKIYQSLIKYSGDLRTLLKQIRGNA
Oc_sGC2  ..MG...TSDFDFVKLYKPNKKILGKVGKKSKGKRKGKNNGLRPGTPRESSSDVGSV
Ml_sGC2  .....MGTSYFAGSV
Vs_sGC2  .....
Hc_sGC1  .....
Dg_sGC1  .....
Bea_sGC1 .....
Hc_sGC2  .....
Oc_sGC1  .....
Ml_sGC4  QQTG...ILDTKLPRLRKFLDRGSNSASLRNLCKVKAEKITWSENEVNCKMFGFMFNA
Oc_sGC4  .....
Hc_sGC4  .....
Pp_sGC2  .....
Pb_sGC4  .....
Hs_SGCY3 LEDASILCLDKEDDFLVVYFFPKRTTSLILPGI IKAHAHVLYETEVEVSLMPPCFHNDC
Hs_SGCY2 SPSF...LCKELPEGTMLMHYFPHHIVGFAMLMGIKAAGKKIYRLDVEVEQVANEKLC
Ed_sGC4  .....
Pb_Nit1  .....
Ed_Nit1  .....
Hc_Nit1  VTEY...CNKGSLQDILENDDVKLDDMLKYSLINDLAKGMRFLHSSVIESHGYLEKSSNC
Pf_Nit12 .....MRFLHSSVIESHGYLEKSSNC
Pf_Nit1  .....MRFLHSSVIESHGYLEKSSNC
Ps_Nit1  .....
Ca_Nit1  VTEY...CNKGSLQDILENEEIKLDDTFKFSLINDLVKGMAYLHSTDIGSHGYLEKSSNC
Bea_Nit1 VTEY...CSKGSLQDILENDDVKLDDMLKFSLINDLAQGLKYIHESVIDSHGYLEKSSNC
Bi_sGC1  .....
Bi_Nit1  .....
Dg_Nit1  .....
Lt_Nit1  .....
Ml_NIT-like .....
Vs_Nit1  .....
Oc_Nit1  .....
Ocg_Nit1 .....
Ocg_Nit12 .....

```

## STYKc protein kinase domain

|             | 180                           | 190                             | 200                      | 210       | 220 |
|-------------|-------------------------------|---------------------------------|--------------------------|-----------|-----|
| Hs_SGCY1    | H.TQFL.....                   | IEEKESKEEDFYEDLDRFEENG          | TQESRISPYTFCKAPFFHIIFDRD |           |     |
| Ml_sGC3     | Q.DISKDSGCSGEFDYSVDYDS        | DIIFYRLADDATKMKYTRS             | SAVLQMFGRWYIAFIWDKWN     |           |     |
| Oc_sGC3     | .....                         | .....                           | .....                    |           |     |
| Ml_sGC1     | .....                         | .....                           | .....                    |           |     |
| Ca_sGC1     | .....                         | .....                           | .....                    |           |     |
| Pf_sGC2     | .....                         | .....                           | .....                    |           |     |
| Pb_sGC2     | HVEQSHKIALFWINIGMSYDEHIKS     | IQDSVAATVNEKMASMIKQAILYQYATEV   | VLIILC                   |           |     |
| Oc_sGC2     | N.SWDR.....                   | IQEDFNDIVDSTGKDDKGGEYKRKSRN     | ISVCIIIPILAVISYSCYH      |           |     |
| Ml_sGC2     | N.SWDR.....                   | IQEDFNDIVDSTGKDDKGGEYKRKSRN     | ISVCIIIPILAVISYSCYH      |           |     |
| Vs_sGC2     | .....                         | .....                           | .....                    |           |     |
| Hc_sGC1     | .....                         | .....                           | .....                    |           |     |
| Dg_sGC1     | .....                         | .....                           | .....                    |           |     |
| Bea_sGC1    | .....                         | .....                           | .....                    |           |     |
| Hc_sGC2     | .....                         | .....                           | .....                    |           |     |
| Oc_sGC1     | .....                         | .....                           | .....                    |           |     |
| Ml_sGC4     | I.KLGF.....                   | YSDFEKRSWYIICTAASVPEDYDDYIDYED  | QLFLELAVGLMYESYT         |           |     |
| Oc_sGC4     | .....                         | MELDDVLPPLTSLSILSLPFFFIYFDRYNEI | HSVSGTLDQI               |           |     |
| Hc_sGC4     | .....                         | .....                           | .....                    |           |     |
| Pp_sGC2     | .....                         | .....                           | .....                    |           |     |
| Pb_sGC4     | .....                         | .....                           | .....                    |           |     |
| Hs_SGCY3    | S.EFVN.....                   | QPYLLYSVHMKSTKPSLSKPSKPQSSSLV   | IPTSLFCKTFPFHMFMDKD      |           |     |
| Hs_SGCY2    | S.DVSNPNCSCLTFLIKECENTNIMKNLP | QGTSSQVPADLRISINTFCRAFPFHL      | MFDP                     |           |     |
| Ed_sGC4     | .....                         | .....                           | MRERRINRVYR..            | PPEALADPT |     |
| Pb_Nit1     | .....                         | .....                           | .....                    |           |     |
| Ed_Nit1     | .....                         | .....                           | .....                    |           |     |
| Hc_Nit1     | V.INNH.....                   | FSLKLADFSRTIFMSDMDRLSRATEE      | EARNDRLVYR..             | APELLRMQM |     |
| Pf_Nit12    | V.INNH.....                   | FSLKIADFSRTIFMSDMDRLSKATEE      | EARNERLVYR..             | APELLRMQC |     |
| Pf_Nit1     | V.INNH.....                   | FSLKIADFSRTIFMSDMDRLSKATEE      | EARNERLVYR..             | APELLRMQC |     |
| Ps_Nit1     | .....                         | .....                           | .....                    | MQC       |     |
| Ca_Nit1     | I.INNL.....                   | FSLKISDFSRTIFMSDMERVSRMSAE      | EARNERLVYR..             | APELLRMTT |     |
| Bea_Nit1    | I.INNQ.....                   | FALKISDFSRTIFMSDMERLSRATEE      | EAMNERLVYR..             | APELLRMSC |     |
| Bi_sGC1     | .....                         | .....                           | .....                    |           |     |
| Bi_Nit1     | .....                         | .....                           | .....                    |           |     |
| Dg_Nit1     | .....                         | .....                           | MSDMERLNRANEEARNERLVYR.. | APELLRMQC |     |
| Lt_Nit1     | .....                         | .....                           | .....                    |           |     |
| Ml_NIT-like | .....                         | .....                           | .....                    |           |     |
| Vs_Nit1     | .....                         | .....                           | .....                    |           |     |
| Oc_Nit1     | .....                         | .....                           | .....                    |           |     |
| Ocg_Nit1    | .....                         | .....                           | MSDMERLNRATEAARNERLVYR.. | APELLRMEC |     |
| Ocg_Nit12   | .....                         | .....                           | MSDMERLNRATEAARNERLVYR.. | APELLRMEC |     |

|             | 230                                                        | 240                  | 250                | 260 | 270 |
|-------------|------------------------------------------------------------|----------------------|--------------------|-----|-----|
| Hs_SGCY1    | LVVVTQCGN.AIYRVLPQLQPGNCSLLSVFSLVRPHIDISFHGILSHI.....      |                      |                    |     |     |
| Ml_sGC3     | MGMIGRTPGEFFRNWSDFFFEYKSQEYPLFIHDRFKIIRNLHIFYVLG.....      |                      |                    |     |     |
| Oc_sGC3     | .....                                                      | .....                | .....              |     |     |
| Ml_sGC1     | .....                                                      | .....                | MLWTMMYIYGNLD..... |     |     |
| Ca_sGC1     | .....                                                      | .....                | .....              |     |     |
| Pf_sGC2     | .....                                                      | .....                | .....              |     |     |
| Pb_sGC2     | LILSVFAVIDIRKIKQIYLYLKVSTGHLLPPCIYLVDTIPSSRDSFVWLVETGGTMKV | LK                   |                    |     |     |
| Oc_sGC2     | IYQGHISHRQSRANHNVLVGSSQQFSKAVEGLNAEMLWTMMYIYGNLD.....      |                      |                    |     |     |
| Ml_sGC2     | IYQGHISHRQSRANHNVLVGSSQQFSKAVEGLNAEMLWTMMYIYGTLD.....      |                      |                    |     |     |
| Vs_sGC2     | .....                                                      | .....                | .....              |     |     |
| Hc_sGC1     | .....                                                      | .....                | .....              |     |     |
| Dg_sGC1     | .....                                                      | .....                | .....              |     |     |
| Bea_sGC1    | .....                                                      | .....                | .....              |     |     |
| Hc_sGC2     | .....                                                      | .....                | .....              |     |     |
| Oc_sGC1     | .....                                                      | .....                | .....              |     |     |
| Ml_sGC4     | VSKEDEQGFDL.....                                           | AMRCWAPNMAYFGLG..... |                    |     |     |
| Oc_sGC4     | MPNLVTRTKLNKNFFLRKPKYGTLTWNYIRSNTHMIFELCTKASEGIT.....      |                      |                    |     |     |
| Hc_sGC4     | .....                                                      | .....                | .....              |     |     |
| Pp_sGC2     | .....                                                      | .....                | .....              |     |     |
| Pb_sGC4     | .....                                                      | .....                | .....              |     |     |
| Hs_SGCY3    | MTILQFGNGIRRLMNRRDFQGPNFEEYFEILTPKINQTFSGIMTML.....        |                      |                    |     |     |
| Hs_SGCY2    | MSVLQLGEGLRKQL.RCDTHKVLKFEDCFEIVSPKVNATFERVLLRL.....       |                      |                    |     |     |
| Ed_sGC4     | LIHQ PST..DVYSF.AIILVEIGDRTEISPPEETIFDPLWRPELPEL.....      |                      |                    |     |     |
| Pb_Nit1     | .....                                                      | .....                | .....              |     |     |
| Ed_Nit1     | .....                                                      | .....                | .....              |     |     |
| Hc_Nit1     | VPCKGTKEGDMYSF.AIIIVHEIIVRYGPFGLSNMDCDLTATEVINMV.....      |                      |                    |     |     |
| Pf_Nit12    | IPCKGTREGDMYSF.AIIIVHEIIVRYGPFGLSNMDADLTATEVINMV.....      |                      |                    |     |     |
| Pf_Nit1     | IPCKGTREGDMYSF.AIIIVHEIIVRYGPFGLSNMDADLTATEVINMV.....      |                      |                    |     |     |
| Ps_Nit1     | IPCKGTREGDMYSF.AIIIVHEIIVRYGPFGLSNMDADLTATEVINMV.....      |                      |                    |     |     |
| Ca_Nit1     | VPCQGTKEADVYSF.GIILHEVLLREGPFGLSSMECDLTSTEVHVLV.....       |                      |                    |     |     |
| Bea_Nit1    | VPCQGTREGDIYSF.GIVLHEILVREGPFGLSSMQSDLTATEVICMI.....       |                      |                    |     |     |
| Bi_sGC1     | .....                                                      | .....                | .....              |     |     |
| Bi_Nit1     | .....                                                      | .....                | .....              |     |     |
| Dg_Nit1     | IPCQGTKEGDVYSF.GIIVHEILVREGPFGLSSMECDLTAAEVMSMI.....       |                      |                    |     |     |
| Lt_Nit1     | .....                                                      | .....                | .....              |     |     |
| Ml_NIT-like | .....                                                      | .....                | .....              |     |     |
| Vs_Nit1     | .....                                                      | .....                | .....              |     |     |
| Oc_Nit1     | .....                                                      | .....                | .....              |     |     |
| Ocg_Nit1    | IPCKGTKEGDMYSF.GIIVHEILVREGPFGLSNMRCDLTATEVINLV.....       |                      |                    |     |     |
| Ocg_Nit12   | IPCKGTKEGDMYSF.GIIVHEILVREGPFGLSNMRCDLTATEVINLV.....       |                      |                    |     |     |

```

Hs_SGCY1 .....
Ml_sGC3 .....
Oc_sGC3 .....
Ml_sGC1 .....
Ca_sGC1 .....
Pf_sGC2 .....
Pb_sGC2 IQKDKSEALLFRMLPYSVVRELKRCRESDNLYVGSYQSATVLFADLADFQRLAARDMSPF
Oc_sGC2 .....
Ml_sGC2 .....
Vs_sGC2 .....
Hc_sGC1 .....
Dg_sGC1 .....
Bea_sGC1 .....
Hc_sGC2 .....
Oc_sGC1 .....
Ml_sGC4 .....
Oc_sGC4 .....
Hc_sGC4 .....
Pf_sGC2 .....
Pb_sGC4 .....
Hs_SGCY3 .....
Hs_SGCY2 .....
Ed_sGC4 .....
Pb_Nit1 .....
Ed_Nit1 .....
Hc_Nit1 .....
Pf_Nit12 .....
Pf_Nit1 .....
Ps_Nit1 .....
Ca_Nit1 .....
Bea_Nit1 .....
Bi_sGC1 .....
Bi_Nit1 .....
Dg_Nit1 .....
Lt_Nit1 .....
Ml_NIT-like .....
Vs_Nit1 .....
Oc_Nit1 .....
Ocg_Nit1 .....
Ocg_Nit12 .....

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## STYKc protein kinase domain

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                                     280      290      300
Hs_SGCY1 .....NTVFVL...RSKEGLLDVEKLECEDELGTGEISCLRLKGO
Ml_sGC3 .....MSKTSTA.....ELEYDTPVLVQGO
Oc_sGC3 .....
Ml_sGC1 .....YPVVVV.....SDLRIKSNESLDL
Ca_sGC1 .....
Pf_sGC2 .....
Pb_sGC2 AYVRFLETIFYTRIAEVLESHTVNEIETAAGECLTLFCIQIKAAQREPRMFQFLHRPISAE
Oc_sGC2 .....YPV...VVV.....SDLRIKSNESLAE
Ml_sGC2 .....YPV...VVV.....SDLRIKSNESLAE
Vs_sGC2 .....
Hc_sGC1 .....
Dg_sGC1 .....
Bea_sGC1 .....
Hc_sGC2 .....
Oc_sGC1 .....
Ml_sGC4 .....IIKFVL.....KNLFRLHEEGMSV
Oc_sGC4 .....KLMKNE.....ETEIDLHFRLQGO
Hc_sGC4 .....
Pf_sGC2 .....
Pb_sGC4 .....
Hs_SGCY3 .....NMQFVV.....RVRRWDNSVKKSSRVMDLKGO
Hs_SGCY2 .....STPFVI.....RTKPEASGSENKDKVMEVKGO
Ed_sGC4 .....N.....EQDNDQDNKC...
Pb_Nit1 .....
Ed_Nit1 .....
Hc_Nit1 .....T.....KTDRTTTPRPEFP
Pf_Nit12 .....I.....KTDRTVTPRPEFP
Pf_Nit1 .....I.....KTDRTVTPRPEFP
Ps_Nit1 .....I.....KTDRTVTPRPEFP
Ca_Nit1 .....T.....KTDTAQPYRPTFP
Bea_Nit1 .....R.....KTGTTTPYRPEFP
Bi_sGC1 .....
Bi_Nit1 .....
Dg_Nit1 .....S.....RSDLETYPYRPEFP
Lt_Nit1 .....
Ml_NIT-like .....
Vs_Nit1 .....
Oc_Nit1 .....T.....KLHSQVPYRPEFP
Ocg_Nit1 .....T.....KLHSQVPYRPEFP
Ocg_Nit12 .....

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## STYKc protein kinase domain

## HNOB

|             | 310      | 320      | 330      | 340      | 350      | 360                     |
|-------------|----------|----------|----------|----------|----------|-------------------------|
| Hs_SGCY1    | MIYLPEAD | SILFLCSP | SVMNLDL  | TRRGLYLS | DIPLHDAT | RDVLVLGEQFREEYKLTQEL    |
| Ml_sGC3     | MVTGMVDK | SALFLCYP | AVGCFLSR | .RNAFYV  | GDLPPGPL | KHTVIALICLKNSLVEHSLDL   |
| Oc_sGC3     | ISTWPTT  | LETNYASK | LEFIADLE | EKLRLGLI | DAQRLRAE | EAFKAYHIMIKIIYEGVIQSLQG |
| Ml_sGC1     | ISTWPTT  | LETNYASK | LEFIADLE | EKLRLGLI | DAQRLRAE | EAFKAYHIMIKIIYEGVIQSLQG |
| Ca_sGC1     | ISTWPTT  | LETNYASK | LEFIADLE | EKLRLGLI | DAQRLRAE | EAFKAYHIMIKIIYEGVIQSLQG |
| Pf_sGC2     | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Pb_sGC2     | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Oc_sGC2     | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Ml_sGC2     | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Vs_sGC2     | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Hc_sGC1     | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Dg_sGC1     | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Bea_sGC1    | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Hc_sGC2     | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Oc_sGC1     | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Ml_sGC4     | VVEPQQV  | DGYIFQNN | FRLQFDNT | PFFRNSDE | EDFSDNEL | DEIMPLTSLSLSLPFFFIYF    |
| Oc_sGC4     | IYVFEDT  | GDAIFLCS | PRLESMAC | .KSTFFG  | DLEAHD   | TTKNQLVSSTLRLHLIRLLDE   |
| Hc_sGC4     | IYVFEDT  | GDAIFLCS | PRLESMAC | .KSTFFG  | DLEAHD   | TTKNQLVSSTLRLHLIRLLDE   |
| Pp_sGC2     | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Pb_sGC4     | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Hs_SGCY3    | MIYIVES  | SAILFLG  | SPCVDRL  | EDFTGRGL | YLSLDIPI | HNALRDVVLIGEQAQDGLKKRL  |
| Hs_SGCY2    | MIHVPES  | NSILFLG  | SPCVDRL  | EDFTGRGL | YLSLDIPI | HNALRDVVLIGEQAQDGLKKRL  |
| Ed_sGC4     | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Pb_Nit1     | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Ed_Nit1     | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Hc_Nit1     | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Pf_Nit12    | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Pf_Nit1     | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Ps_Nit1     | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Ca_Nit1     | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Bea_Nit1    | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Bi_sGC1     | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Bi_Nit1     | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Dg_Nit1     | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Lt_Nit1     | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Ml_NIT-like | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Vs_Nit1     | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Oc_Nit1     | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Ocg_Nit1    | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |
| Ocg_Nit12   | ISSWPRT  | LETNYATK | TQFFRDLE | NLRSQIDA | AQQLRAEE | EAFKAYHIMIKIIYEGVIQSLQG |

## domain

|             | 370    |
|-------------|--------|
| Hs_SGCY1    | EILTDR |
| Ml_sGC3     | EILTDR |
| Oc_sGC3     | EILTDR |
| Ml_sGC1     | EILTDR |
| Ca_sGC1     | EILTDR |
| Pf_sGC2     | EILTDR |
| Pb_sGC2     | EILTDR |
| Oc_sGC2     | EILTDR |
| Ml_sGC2     | EILTDR |
| Vs_sGC2     | EILTDR |
| Hc_sGC1     | EILTDR |
| Dg_sGC1     | EILTDR |
| Bea_sGC1    | EILTDR |
| Hc_sGC2     | EILTDR |
| Oc_sGC1     | EILTDR |
| Ml_sGC4     | EILTDR |
| Oc_sGC4     | EILTDR |
| Hc_sGC4     | EILTDR |
| Pp_sGC2     | EILTDR |
| Pb_sGC4     | EILTDR |
| Hs_SGCY3    | EILTDR |
| Hs_SGCY2    | EILTDR |
| Ed_sGC4     | EILTDR |
| Pb_Nit1     | EILTDR |
| Ed_Nit1     | EILTDR |
| Hc_Nit1     | EILTDR |
| Pf_Nit12    | EILTDR |
| Pf_Nit1     | EILTDR |
| Ps_Nit1     | EILTDR |
| Ca_Nit1     | EILTDR |
| Bea_Nit1    | EILTDR |
| Bi_sGC1     | EILTDR |
| Bi_Nit1     | EILTDR |
| Dg_Nit1     | EILTDR |
| Lt_Nit1     | EILTDR |
| Ml_NIT-like | EILTDR |
| Vs_Nit1     | EILTDR |
| Oc_Nit1     | EILTDR |
| Ocg_Nit1    | EILTDR |
| Ocg_Nit12   | EILTDR |

|             |                                                              |
|-------------|--------------------------------------------------------------|
| Hs_SGCY1    | .....                                                        |
| Ml_sGC3     | .....                                                        |
| Oc_sGC3     | .....                                                        |
| Ml_sGC1     | .....                                                        |
| Ca_sGC1     | .....                                                        |
| Pf_sGC2     | .....                                                        |
| Pb_sGC2     | SQIYGGDTIRSKIYQSLIKYSGDLRTLLKQIRGNAHVEQSHKIALFWINIGMSYDEHIKS |
| Oc_sGC2     | SQIYGGDTIRSKIYQSLIKYSGDLRTLLKQIRANAHVEQSHKIALFWINIGMSYDEHIKS |
| Ml_sGC2     | .....                                                        |
| Vs_sGC2     | .....                                                        |
| Hc_sGC1     | .....                                                        |
| Dg_sGC1     | .....                                                        |
| Bea_sGC1    | .....                                                        |
| Hc_sGC2     | .....                                                        |
| Oc_sGC1     | .....                                                        |
| Ml_sGC4     | .....                                                        |
| Oc_sGC4     | .....                                                        |
| Hc_sGC4     | .....                                                        |
| Pp_sGC2     | .....                                                        |
| Pb_sGC4     | .....                                                        |
| Hs_SGCY3    | .....                                                        |
| Hs_SGCY2    | .....                                                        |
| Ed_sGC4     | .....                                                        |
| Pb_Nit1     | .....                                                        |
| Ed_Nit1     | .....                                                        |
| Hc_Nit1     | .....                                                        |
| Pf_Nit12    | .....                                                        |
| Pf_Nit1     | .....                                                        |
| Ps_Nit1     | .....                                                        |
| Ca_Nit1     | .....                                                        |
| Bea_Nit1    | .....                                                        |
| Bi_sGC1     | .....                                                        |
| Bi_Nit1     | .....                                                        |
| Dg_Nit1     | .....                                                        |
| Lt_Nit1     | .....                                                        |
| Ml_NIT-like | .....                                                        |
| Vs_Nit1     | .....                                                        |
| Oc_Nit1     | .....                                                        |
| Ocg_Nit1    | .....                                                        |
| Ocg_Nit12   | .....                                                        |

|             |                                                              |
|-------------|--------------------------------------------------------------|
| Hs_SGCY1    | .....                                                        |
| Ml_sGC3     | .....                                                        |
| Oc_sGC3     | .....                                                        |
| Ml_sGC1     | .....LL                                                      |
| Ca_sGC1     | .....                                                        |
| Pf_sGC2     | .....                                                        |
| Pb_sGC2     | IQDSVAATVNEKMASMIKQAILYQYATEVVLIILCLILSVFAVIDIRKIKQIYLYLKSQS |
| Oc_sGC2     | IQDSVAASVNEKMASMIKQAILYQYATEVVLIILCLILSVFAVIDIRKIKQIYLYLKSQS |
| Ml_sGC2     | .....LSQS                                                    |
| Vs_sGC2     | .....                                                        |
| Hc_sGC1     | .....                                                        |
| Dg_sGC1     | .....                                                        |
| Bea_sGC1    | .....                                                        |
| Hc_sGC2     | .....                                                        |
| Oc_sGC1     | .....                                                        |
| Ml_sGC4     | .....                                                        |
| Oc_sGC4     | .....                                                        |
| Hc_sGC4     | .....                                                        |
| Pp_sGC2     | .....                                                        |
| Pb_sGC4     | .....                                                        |
| Hs_SGCY3    | .....                                                        |
| Hs_SGCY2    | .....                                                        |
| Ed_sGC4     | .....                                                        |
| Pb_Nit1     | .....                                                        |
| Ed_Nit1     | .....                                                        |
| Hc_Nit1     | .....                                                        |
| Pf_Nit12    | .....                                                        |
| Pf_Nit1     | .....                                                        |
| Ps_Nit1     | .....                                                        |
| Ca_Nit1     | .....                                                        |
| Bea_Nit1    | .....                                                        |
| Bi_sGC1     | .....                                                        |
| Bi_Nit1     | .....                                                        |
| Dg_Nit1     | .....                                                        |
| Lt_Nit1     | .....                                                        |
| Ml_NIT-like | .....                                                        |
| Vs_Nit1     | .....                                                        |
| Oc_Nit1     | .....                                                        |
| Ocg_Nit1    | .....                                                        |
| Ocg_Nit12   | .....                                                        |

## HNOB domain

## CYC6

|             | 380                      | 390    | 400   | 410        | 420     |         |        |        |       |
|-------------|--------------------------|--------|-------|------------|---------|---------|--------|--------|-------|
| Hs_SGCY1    | ....TLRALEDEKKKTDLLYS    | VLPPSV | ANELR | HRKR....   | PVPAKRV | DNV     | TIL    | FS     | GIV   |
| Ml_sGC3     | ....SCLAAAKEAEELSDNLLNQ  | LMPPHI | HKA   | VRVGRPY... | GESCEL  | Y       | NNA    | TV     | LLS   |
| Oc_sGC3     | ....                     | ....   | ....  | ....       | ....    | ....    | ....   | ....   | ....  |
| Ml_sGC1     | HDYSLQFSQIYGGDSSIRSKIYQS | LFKYRL | NKNAN | ESSHTRSPT  | TGSERT  | NEDN    | NES    | F      | E     |
| Ca_sGC1     | ....                     | MLPYSV | VRELR | KCKD....   | TPYVGS  | Y       | QSA    | TV     | FADLA |
| Pf_sGC2     | ....                     | ....   | ....  | ....       | ....    | ....    | ....   | ....   | ....  |
| Pb_sGC2     | DRTKVTMKVLKIQKDKSEALLFR  | MLPYSV | VRELR | KCRESD..   | NLYVGS  | Y       | QSA    | TV     | FADLA |
| Oc_sGC2     | ERTKVTMKVLKIQKDKSEALLFR  | MLPYSV | VRELR | KCRETN..   | TVYVGS  | Y       | QSA    | TV     | FADLA |
| Ml_sGC2     | ERTKVTMKVLKIQKDRSEALLFR  | MLPYSV | VRELR | KCRQTS..   | TLYVGS  | Y       | QSA    | TV     | FADLA |
| Vs_sGC2     | ....MKVLKIQKDRSEALLFR    | MLPYSV | VRELR | KCRQTS..   | TLYVGS  | Y       | QSA    | TV     | FADLA |
| Hc_sGC1     | ....                     | ....   | ....  | ....       | ....    | ....    | ....   | ....   | ....  |
| Dg_sGC1     | ....                     | ....   | ....  | ....       | ....    | ....    | ....   | ....   | ....  |
| Bea_sGC1    | ....                     | ....   | ....  | ....       | ....    | ....    | ....   | ....   | ....  |
| Hc_sGC2     | ....                     | ....   | ....  | ....       | ....    | ....    | ....   | ....   | ....  |
| Oc_sGC1     | ....                     | ....   | ....  | ....       | ....    | ....    | ....   | ....   | ....  |
| Ml_sGC4     | ....                     | GSTLDQ | IMP   | NLVR       | SKLN    | KNF.... | SLR    | KPK    | ARS   |
| Oc_sGC4     | ....QYLSVLNTEMRITEGLIRO  | IMPRD  | V     | ALQ        | I       | KEG     | TPF... | VNT    | CEE   |
| Hc_sGC4     | ....MTECLVRO             | IMPRE  | I     | ADQ        | M       | R       | DGE    | SF...  | VNT   |
| Pp_sGC2     | ....DYLSILSTEMKITECLVRO  | ILPKEL | A     | QQ         | I       | R       | DGT    | TPF... | VNT   |
| Pb_sGC4     | ....EYLSILSTEMKITECLVRO  | ILPREL | A     | QQ         | I       | R       | DGT    | TPF... | VNT   |
| Hs_SGCY3    | ....AHQALEEEKKKTVDLLCS   | IFPCEV | A     | QQ         | L       | W       | QQG... | VV     | QAK   |
| Hs_SGCY2    | ....THQALEEEKKKTVDLLYS   | IFPGDV | A     | QQ         | L       | W       | QQG... | QV     | QAR   |
| Ed_sGC4     | ....RTFDLIEKKKTDRLLYA    | MLPASV | A     | E          | L       | K       | Q      | GK...  | A     |
| Pb_Nit1     | ....MQIIKIRTCSLK         | I      | C     | S          | K       | V       | N      | K      | L     |
| Ed_Nit1     | ....                     | MLPKSV | A     | D          | L       | K       | T      | G      | N     |
| Hc_Nit1     | ....RTAQLQCEKKRTDDLIES   | MLPKSV | A     | D          | L       | K       | S      | G      | S     |
| Pf_Nit12    | ....RTAQLRCEKKRTDDLIES   | MLPKSV | A     | D          | L       | K       | S      | G      | S     |
| Pf_Nit1     | ....RTAQLRCEKKRTDDLIES   | MLPKSV | A     | D          | L       | K       | S      | G      | S     |
| Ps_Nit1     | ....RTAQLRCEKKRTDDLIES   | MLPKSV | A     | D          | L       | K       | S      | G      | S     |
| Ca_Nit1     | ....                     | ....   | ....  | ....       | ....    | ....    | ....   | ....   | ....  |
| Bea_Nit1    | ....RTAQLQVEKKRTDDLLES   | MLPKSV | A     | D          | L       | K       | S      | G      | S     |
| Bi_sGC1     | ....                     | MLPRAV | A     | E          | K       | M       | K      | Q      | G     |
| Bi_Nit1     | ....                     | ....   | ....  | ....       | ....    | ....    | ....   | ....   | ....  |
| Dg_Nit1     | ....RTSQLQAEKKRTDDLLES   | MLPKSV | A     | D          | L       | K       | A      | G      | T     |
| Lt_Nit1     | ....RTAQLQSEKKKTDDDLLES  | MLPKSV | A     | D          | L       | K       | S      | G      | H     |
| Ml_NIT-like | ....                     | ....   | ....  | ....       | ....    | ....    | ....   | ....   | ....  |
| Vs_Nit1     | ....                     | ....   | ....  | ....       | ....    | ....    | ....   | ....   | ....  |
| Oc_Nit1     | ....                     | ....   | ....  | ....       | ....    | ....    | ....   | ....   | ....  |
| Ocg_Nit1    | ....RTAQLQVEKKKTDDDLLES  | MLPKSV | A     | D          | L       | K       | S      | G      | S     |
| Ocg_Nit12   | ....RTAQLQVEKKKTDDDLLES  | MLPKSV | A     | D          | L       | K       | S      | G      | S     |

|          | 430 | 440 | 450 | 460 | 470 | 480 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     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| Hs_SGCY1 | G   | F   | N   | A   | F   | C   | S   | K   | H   | A   | S   | G   | E   | G   | A   | M   | K   | I   | V   | N   | L   | N   | D   | L   | Y   | T   | R   | F   | D   | T   | L   | T   | S   | R   | K   | N   | P   | F   | V   | Y   | K   | ... | V   | E   | T   | V   | G   | D   | K   | Y   | M   | T   | V   | S   | G   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     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| Ml_sGC3  | G   | F   | T   | S   | I   | C   | S   | Q   | .   | I   | S   | ... | ... | ... | P   | M   | D   | V   | A   | R   | M   | L   | N   | A   | M   | Y   | M   | T   | F   | D   | S   | L   | I   | S   | N   | R   | K   | S   | ..  | V   | Y   | K   | R   | N   | V   | Q   | V   | E   | T   | I   | G   | D   | Y   | M   | V   | V   | V   | G   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     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| Oc_sGC3  | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... 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CYCc  
Adenylyl- / guanylyl cyclase, catalytic domain

|             | 490                   | 500     | 510          | 520          | 530              |
|-------------|-----------------------|---------|--------------|--------------|------------------|
| Hs_SGCY1    | LP EPC..IHHARSICH LAL | DMMEI   | AGQVQVD..    | GESVQIT I..  | GIHTGEVVTGVIGQRM |
| Ml_sGC3     | IPNTQ..ERHAEYAADMAI   | DMLAG   | LKKVELPFL    | LEGK.MAVKL.. | GINSGPIVAGVMGWKV |
| Oc_sGC3     | IPTYQ..EKHAEYAAEMAI   | DMLIG   | LRSVELPFL    | EDNMRVKI..   | GLNSGPIVAGVMGWKV |
| Ml_sGC1     | LPDRSPTTKHCSEIALTAL   | GLRSVM  | CRGLQLGV     | VHGDFVCFRLIQ | GIATGFCAGVIGVKL  |
| Ca_sGC1     | LPDRT.T.SKHCSEIAHTAL  | GLRSIM  | CRGLQLGV     | VHGDFVCFRLIQ | GIATGFCAGVIGVKL  |
| Pf_sGC2     | ..                    | ..      | ..           | ..           | GIATGFCAGVIGVKL  |
| Pb_sGC2     | LPDKT..PKHCSEIALTAL   | GLRSVM  | CRGLQLGV     | VHGDFVCFRLIQ | GIATGFCAGVIGVKL  |
| Oc_sGC2     | LPDRI..PKHCSEIAMTAL   | GLRSVM  | CRGLQLGV     | VHGDFVCFRLIQ | GIATGFCAGVIGVKL  |
| Ml_sGC2     | LPDRI..PKHCSEIALTAL   | GLRSVM  | CRGLQLGV     | VHGDFVCFRLIQ | GIATGFCAGVIGVKL  |
| Vs_sGC2     | LPDRI..PKHCSEIALTAL   | GLRSVM  | CRGLQLGV     | VHGDFVCFRLIQ | GIATGFCAGVIGVKL  |
| Hc_sGC1     | ..                    | ..      | ..           | ..           | GIATGFCAGVIGVKL  |
| Dg_sGC1     | ..                    | ..      | ..           | ..           | GIATGFCAGVIGVKL  |
| Bea_sGC1    | LPDRSPTS KHCSEIAHTAL  | GLRSVM  | CRGLQLGV     | VHGDFVCFRLIQ | GIATGFCAGVIGVKL  |
| Hc_sGC2     | LPDRSPTS KHCSEIALTAL  | GLRSVM  | CRGLQLGV     | VHGDFVCFRLIQ | GIATGFCAGVIGVKL  |
| Oc_sGC1     | LPDRSPTS KHCSEIALTAL  | GLRSVM  | CRGLQLGV     | VHGDFVCFRLIQ | GIATGFCAGVIGVKL  |
| Ml_sGC4     | LPDRT..EHHAKH AADVA   | MEMVQAI | IQVKINFL     | KEPLSVK L..  | GMHSGPVVAGVVGWKM |
| Oc_sGC4     | LPDRT..EHHAKH AADVA   | MEMVQAI | IQVKINFL     | KEPLSVK L..  | GMHSGPVVAGVVGWKM |
| Hc_sGC4     | LPIDED..DNHARH AADIA  | IDMVQQA | IAEVKVDFL    | TEPISIK L..  | GIHTGPIVAGVVGWKM |
| Pp_sGC2     | LP TKD..DNHAKY AANIA  | TEMVQK  | IQQVKVDFL    | KSSISVK L..  | GIHTGPIVAGVVGWKM |
| Pb_sGC4     | LP TKD..DNHAKY AANIA  | TEMVQK  | IQQVKVDFL    | KSSISVK L..  | GIHTGPIVAGVVGWKM |
| Hs_SGCY3    | LHKE S..DTHAVQ IALMAL | KMMELS  | SDEVMSPH..   | GEPIMRI..    | GLHSGSVFAGVVGWKM |
| Hs_SGCY2    | LHRK S..LCHAKP IALMAL | KMMELS  | SEEVLTDP..   | GRPIQMRI..   | GIHSGSVFAGVVGWKM |
| Ed_sGC4     | VPNKNG.DKHAE EIAMMAI  | KIVMFC  | RGFRVPHRADQI | VNIR A..     | GVHSGPVVAGVVGWKM |
| Pb_Nit1     | LP IRNE.DRHAAQ IALMSL | DFLDN   | IRNFKIAH     | LPEEKLIRI..  | GMHSGPVVAGVVGWKM |
| Ed_Nit1     | LP IRNG.LRHAAQ ISLMSL | LEFLNK  | VESFVIRH     | FPEEKLIRI..  | GMHSGPVVAGVVGWKM |
| Hc_Nit1     | LP IRNG.DRHAAQ IALMSL | DFLDS   | IRNFKIAH     | LPEEKLIRI..  | GMHSGPVVAGVVGWKM |
| Pf_Nit12    | LP IQNG.DRHAAQ IALMSL | DFLDS   | ISNFKIAH     | LPEEKLIRI..  | GMHSGPVVAGVVGWKM |
| Pf_Nit1     | LP IQNG.DRHAAQ IALMSL | DFLDS   | ISNFKIAH     | LPEEKLIRI..  | GMHSGPVVAGVVGWKM |
| Ps_Nit1     | LP IQNG.DRHAAQ IALMSL | DFLDS   | ISNFKIAH     | LPEEKLIRI..  | GMHSGPVVAGVVGWKM |
| Ca_Nit1     | LP IRNG.DRHAAQ IALMSL | DFLDN   | KNFVIRH      | KPDALMIRI..  | GIHSGPVVAGVVGWKM |
| Bea_Nit1    | LP IRNG.DRHAAQ IGLMSL | DFLDN   | VNNFVIGH     | LPEEKLIRI..  | GMHSGPVVAGVVGWKM |
| Bi_sGC1     | ..                    | ..      | ..           | ..           | ..               |
| Bi_Nit1     | LP VRNG.DRHAAQ IALMSL | NFLSCL  | LKTFVISH     | LPEEKLIRI..  | GMHSGPVVAGVVGWKM |
| Dg_Nit1     | LP IRNG.DRHAAQ IALMSL | DFLTC   | IKHFVSSH     | LPTERLIRI..  | GMHSGPVVAGVVGWKM |
| Lt_Nit1     | LP VRNG.DRHAAQ IALMSL | DFLGCL  | IKTFVISH     | LPEEKLIRI..  | GMHSGPVVAGVVGWKM |
| Ml_NIT-like | LP VRNG.DRHAAQ IALMSL | DFLSCL  | LNTFVISH     | LPEEKLIRI..  | GMHSGPVVAGVVGWKM |
| Vs_Nit1     | ..                    | ..      | ..           | ..           | ..               |
| Oc_Nit1     | LP VRNG.DRHAAQ VALMSL | DFLSS   | LKTFVISH     | LPEEKLIRI..  | GMHSGPVVAGVVGWKM |
| Ocg_Nit1    | LP VRNG.DRHAAQ VALMSL | DFLSS   | LNTFVISH     | LPEEKLIRI..  | GMHSGPVVAGVVGWKM |
| Ocg_Nit12   | LP VRNG.DRHAAQ VALMSL | DFLSS   | LNTFVISH     | LPEEKLIRI..  | GMHSGPVVAGVVGWKM |

|             | 540           | 550             | 560             | 570       | 580         |
|-------------|---------------|-----------------|-----------------|-----------|-------------|
| Hs_SGCY1    | PRYCL.....    | FGNTVNLTSRTETT  | GEK GKINV.....  | SEYTYRCL  | MSPENS DQPF |
| Ml_sGC3     | PRYGV.....    | FGDTVN NVNLEST  | .....           | .....     | SKNF        |
| Oc_sGC3     | PRYGV.....    | FGDTVN NVNLEST  | SKPNRIHI        | SES.....  | .....       |
| Ml_sGC1     | ..            | ..              | ..              | ..        | ..          |
| Ca_sGC1     | PRFCV.....    | FGNTVNTAARMKST  | CLGMRIQI        | TEACKYVL  | EEEE        |
| Pf_sGC2     | PRFCV.....    | FGDTINTAARMKST  | AIGMRIQI        | TDVCCDIL  | EEEE        |
| Pb_sGC2     | PRFCV.....    | FGDTINTAARMKST  | AIGMRIQI        | TDVCCDIL  | EEEE        |
| Oc_sGC2     | PRFCV.....    | FGDTVNTAARMKST  | AIGMRIQI        | TDVCSEVL  | EEEE        |
| Ml_sGC2     | PRFCV.....    | FGDTVNTAARMKST  | AIGMRIQI        | TDVCSEVL  | EDEF        |
| Vs_sGC2     | PRFCV.....    | FGDTVNTAARMKST  | AIGMRIQI        | TDVCSEVL  | EDEF        |
| Hc_sGC1     | PRFCV.....    | FGDTINTAARMKST  | AIGMRIQI        | TDVCCDIL  | EDEF        |
| Dg_sGC1     | PRFCV.....    | FGDTVNTAARMKST  | CLGMRIQI        | TDICSVIL  | EDEF        |
| Bea_sGC1    | PRFCV.....    | FGDTVNTAARMKST  | CLGMRIQI        | TDICSVIL  | EDEF        |
| Hc_sGC2     | PRFCV.....    | FGDTVNTAARMKST  | CLGMRIQI        | TDICSVIL  | EDEF        |
| Oc_sGC1     | ..            | ..              | ..              | ..        | ..          |
| Ml_sGC4     | PRYCL.....    | FGDTVNTASRMES   | ASEALKIHI       | SDSTNEHL  | KRYGNY      |
| Oc_sGC4     | PRYCL.....    | FGDTVNTASRMET   | ASEALKIHI       | SDSTNEHL  | KRYGNY      |
| Hc_sGC4     | ..            | ..              | ..              | ..        | ..          |
| Pp_sGC2     | PRYCL.....    | FGDTVNTASRMETS  | SEALKIHI        | SDATNECL  | KRYGNY      |
| Pb_sGC4     | PRFCLSLYLCLSV | FGDINTWC DPRQV  | MSPM SVCLFVCLSL | SLSTPFLQV | WWDGRCRGN   |
| Hs_SGCY3    | PRYCL.....    | FGNNVT LANKFE   | SCSVPRKINV      | SPTTYRLL  | KDCPGF      |
| Hs_SGCY2    | PRYCL.....    | FGNNVT LANKFE   | SGSHPRRINV      | SPTTYQLL  | KREESF      |
| Ed_sGC4     | PRFCL.....    | FGDTVN MASRMEST | GEALKIQV        | SPTTHRLL  | KDREDF      |
| Pb_Nit1     | PRYCL.....    | FGDTVNTASRMES   | NGEAEKIQM       | SSQSHDIL  | KINGGF      |
| Ed_Nit1     | ..            | ..              | ..              | ..        | ..          |
| Hc_Nit1     | PRYCL.....    | FGDTVNTASRMES   | NGEAEKIQM       | SLQSHDIL  | NIHGGF      |
| Pf_Nit12    | PRYCL.....    | FGDTVNTASRMES   | NGEAEKIQM       | SSQSHDIL  | KIHGGF      |
| Pf_Nit1     | PRYCL.....    | FGDTVNTASRMES   | NGEAEKIQM       | SSQSHDIL  | KIHGGF      |
| Ps_Nit1     | PRYCL.....    | FGDTVNTASRMES   | NGEAEKIQM       | SSQSHDIL  | KIHGGF      |
| Ca_Nit1     | PRYCL.....    | FGDTVNTASRMES   | NGQALKIHM       | SEQTYNIL  | DKHGGF      |
| Bea_Nit1    | PRYCL.....    | FGDTVNTASRMES   | NGEAEKIQM       | SEQSYKIL  | INHGGF      |
| Bi_sGC1     | ..            | ..              | ..              | ..        | ..          |
| Bi_Nit1     | PRYCL.....    | FGDTVNTASRMES   | NGEPEKIQM       | SSQSYSIL  | SSHGGF      |
| Dg_Nit1     | PRYCL.....    | FGDTVNTASRMES   | NGEPEKIQM       | SEQSYNIL  | ASHGGF      |
| Lt_Nit1     | PRYCL.....    | FGDTVNTASRMES   | NGEAEKIQM       | SSQSYGIL  | SEHGGF      |
| Ml_NIT-like | PRYCL.....    | FGDTVNTASRMES   | NGEAEKIQM       | STQSYGIL  | SNHGGF      |
| Vs_Nit1     | PRYCL.....    | FGDTVNTASRMES   | NGEAEKIQM       | STQSYGIL  | SNHGGF      |
| Oc_Nit1     | PRYCL.....    | FGDTVNTASRMES   | NGMAEKIQM       | SSQSYNIL  | ANHGGF      |
| Ocg_Nit1    | PRYCL.....    | FGDTVNTASRMES   | NGIAGKIQM       | SSQSYSIL  | SNHGGF      |
| Ocg_Nit12   | PRYCL.....    | FGDTVNTASRMES   | NGIAGKIQM       | SSQSYSIL  | SNHGGF      |

|             | 590    | 600                                      |                                       |
|-------------|--------|------------------------------------------|---------------------------------------|
| Hs_SGCY1    | HLEHR  | GPVSMKGGKEPMQVFL                         | ...SRKNT...                           |
| Ml_sGC3     | ISRR   | .....TYWLC                               | ...GRRTSDTNPPFENEAEDEALP...           |
| Oc_sGC3     | .....  | .....                                    | .....                                 |
| Ml_sGC1     | .....  | .....                                    | .....                                 |
| Ca_sGC1     | LISKRR | GVIYVKGGGEMETHWLI                        | ...GVRNN.....                         |
| Pf_sGC2     | LISKRR | GTIFVKGGGEMETHWLI                        | ...GNRNS.....NEDINN                   |
| Pb_sGC2     | LISKRR | GTIFVKGGGEMETHWLI                        | ...GSRNSNEDMNSYSNNNNNNNNNGGKNKSGSGGGR |
| Oc_sGC2     | IVSKRR | GIIIFVKGGGEMETHWLI                       | ...GVRNS.....NEDLS                    |
| Ml_sGC2     | IVSKRR | GVIIFVKGGGEMETHWLI                       | ...GVRNSTEDLTSYNNNSNNNNN              |
| Vs_sGC2     | IVSKRR | GVIIFVK.....                             | .....                                 |
| Hc_sGC1     | LIARR  | GTIFVKGGGEMETHWLI                        | ...GNRTS.....                         |
| Dg_sGC1     | LVTKR  | GTIFVKGGGEMETHWLI                        | ...GERN.....                          |
| Bea_sGC1    | VVTKR  | GTIFVKGGGEMETHWLI                        | ...SERNS.....                         |
| Hc_sGC2     | VISRR  | GIIIFVKGGGELETHWLI                       | ...GERNS.....NDD                      |
| Oc_sGC1     | .....  | .....                                    | .....                                 |
| Ml_sGC4     | ITRQR  | GWHSHKGGGQLPTYWLC                        | ...GQGDNILPSYQTTELMEEEA...            |
| Oc_sGC4     | ITRQR  | GWHAHKGGGQLPTYWLC                        | ...GQGDITILASYTKNELMEEEA...           |
| Hc_sGC4     | .....  | .....                                    | .....                                 |
| Pp_sGC2     | ITRQR  | GWHDHKGGGQLPTYWLC                        | ...GQGDITLLTSYTKTEELTEEA...           |
| Pb_sGC4     | ITRQR  | GWHDHKGGGQLPTYWLC                        | ...GQGDIT.....                        |
| Hs_SGCY3    | VFTPR  | .....SREELPPNFP                          | .....                                 |
| Hs_SGCY2    | TFIPR  | .....SREELPDNFP                          | .....                                 |
| Ed_sGC4     | RFEYR  | GKVEVKGGGTQETHWLI                        | ...GRDN.....                          |
| Pb_Nit1     | VTESR  | GLVEMKVLMLNDLYTLFDTCIEKYDCYKVETIGDAYMVVS | .....                                 |
| Ed_Nit1     | .....  | .....                                    | .....                                 |
| Hc_Nit1     | VTESR  | GLVEMKGGGKVPFWLK                         | ...GVEND.....                         |
| Pf_Nit12    | VTECR  | GLVEMKGGGKVEFWLK                         | ...GVENN.....                         |
| Pf_Nit1     | VTECR  | GLVEMKGGGKVEFWLK                         | ...GVENN.....                         |
| Ps_Nit1     | VTECR  | GLVEMKGGGKVEFWLK                         | ...GVENN.....                         |
| Ca_Nit1     | VIEYR  | GLVEMKGGGKLPTYWLO                        | ...GLDE.....                          |
| Bea_Nit1    | IEAR   | GLIEMKGGGLVQTYWLO                        | ...GVDKA.....                         |
| Bi_sGC1     | .....  | .....                                    | .....                                 |
| Bi_Nit1     | IDPR   | REGLVDMKGGGKQQTYWLO                      | ...GVEKD.....                         |
| Dg_Nit1     | VIEPR  | GLVEMKGGGKIPTYWLO                        | ...SIEKD.....                         |
| Lt_Nit1     | EDPR   | REGLIEMKGGGLQQTYWLO                      | ...GVEKD.....                         |
| Ml_NIT-like | VIQPR  | RDGLVDMKGGGKQQTYWLO                      | ...GVEKD.....                         |
| Vs_Nit1     | VIQPR  | RDGLVDMKGGGKQQTYWLO                      | ...GVEKD.....                         |
| Oc_Nit1     | VIEPR  | RDGLVDMKGGGLQQTYWLH                      | ...GVEKY.....                         |
| Ocg_Nit1    | IEPR   | RDGLVDMKGGGLQQTYWLO                      | ...GVEKY.....                         |
| Ocg_Nit12   | IEPR   | RDGLVDMKGGGLQQTYWLO                      | ...GVEKY.....                         |

|             |                                                                |
|-------------|----------------------------------------------------------------|
| Hs_SGCY1    | .....                                                          |
| Ml_sGC3     | .....                                                          |
| Oc_sGC3     | .....                                                          |
| Ml_sGC1     | .....                                                          |
| Ca_sGC1     | .....                                                          |
| Pf_sGC2     | .....                                                          |
| Pb_sGC2     | NKKKQSNWSMESAAARGVVRQIALTNPIILVITHNLCSNPPFTFVKEAGVTEGLGGASADDG |
| Oc_sGC2     | .....                                                          |
| Ml_sGC2     | .....                                                          |
| Vs_sGC2     | .....                                                          |
| Hc_sGC1     | .....                                                          |
| Dg_sGC1     | .....                                                          |
| Bea_sGC1    | .....                                                          |
| Hc_sGC2     | .....                                                          |
| Oc_sGC1     | .....                                                          |
| Ml_sGC4     | .....                                                          |
| Oc_sGC4     | .....                                                          |
| Hc_sGC4     | .....                                                          |
| Pp_sGC2     | .....                                                          |
| Pb_sGC4     | .....                                                          |
| Hs_SGCY3    | .....                                                          |
| Hs_SGCY2    | .....                                                          |
| Ed_sGC4     | .....                                                          |
| Pb_Nit1     | .....                                                          |
| Ed_Nit1     | .....                                                          |
| Hc_Nit1     | .....                                                          |
| Pf_Nit12    | .....                                                          |
| Pf_Nit1     | .....                                                          |
| Ps_Nit1     | .....                                                          |
| Ca_Nit1     | .....                                                          |
| Bea_Nit1    | .....                                                          |
| Bi_sGC1     | .....                                                          |
| Bi_Nit1     | .....                                                          |
| Dg_Nit1     | .....                                                          |
| Lt_Nit1     | .....                                                          |
| Ml_NIT-like | .....                                                          |
| Vs_Nit1     | .....                                                          |
| Oc_Nit1     | .....                                                          |
| Ocg_Nit1    | .....                                                          |
| Ocg_Nit12   | .....                                                          |

|             |                                                            |
|-------------|------------------------------------------------------------|
| Hs_SGCY1    | .....VAVAKQPVTKTKKTTVP.....                                |
| Ml_sGC3     | .....VAVAKQPVTKTKKTTVP.....                                |
| Oc_sGC3     | .....VAVAKQPVTKTKKTTVP.....                                |
| Ml_sGC1     | .....MTEEEMSVYAGNKMSSST.....                               |
| Ca_sGC1     | .....YSNNNNSGGNTGHKQSGSR.....                              |
| Pf_sGC2     | KEGHKSKSKSSKSNAPQLTTSVNIIFSLHHLAPQIPISLYITQVSGSCEWTRLRSRSS |
| Pb_sGC2     | .....NYNSGNNNSASKNTS.....                                  |
| Oc_sGC2     | .....NNNNNNNNNNNNNSGNKTSNR.....                            |
| Ml_sGC2     | .....NNNNNNNNNNNNNSGNKTSNR.....                            |
| Vs_sGC2     | .....NDNMNNYNGSSGDSRQGATDPGREPVR.....                      |
| Hc_sGC1     | .....NDNMNNYNGSSGDSRQGATDPGREPVR.....                      |
| Dg_sGC1     | .....NDNMNNYNGSSGDSRQGATDPGREPVR.....                      |
| Bea_sGC1    | .....NDNMNNYNGSSGDSRQGATDPGREPVR.....                      |
| Hc_sGC2     | .....IQRLTNKSTITNHASAPAAA.....                             |
| Oc_sGC1     | .....KQVNVQVLEQVNEGAQLSADVLNQLSNNP.....                    |
| Ml_sGC4     | .....KQVNVQVLEQVNEGAQLSADVLNQLSNNP.....                    |
| Oc_sGC4     | .....KQVNVQVLEQVNEGALSVDVLQQLSNNPALQRQIN.....              |
| Hc_sGC4     | .....KQVNVQVLEQVNEGALSVDVLQQLSNNPALQRQIN.....              |
| Pp_sGC2     | .....KQVNDVLEQLPDGSTAAAEMIQQMGGFNPALQR.....                |
| Pb_sGC4     | .....KQVNDVLEQLPDGSTAAAEMIQQMGGFNPALQR.....                |
| Hs_SGCY3    | .....EIPGICHFLDAYQQG.....                                  |
| Hs_SGCY2    | .....EIPGICYFLEVRTGPKP.....                                |
| Ed_sGC4     | .....LSISNCLSPASHKRIFKGALP.....                            |
| Pb_Nit1     | .....GLPIRNEDRHAAQIALMSLDFLDNIRNFKIAHLPEEKLRIIRIGMHSNLTSR  |
| Ed_Nit1     | .....GLPIRNEDRHAAQIALMSLDFLDNIRNFKIAHLPEEKLRIIRIGMHSNLTSR  |
| Hc_Nit1     | .....INLNNPRHFTDQALL.....                                  |
| Pf_Nit12    | .....INLTNPRFTDQAVLA.....                                  |
| Pf_Nit1     | .....INLTNPRFTDQAVLA.....                                  |
| Ps_Nit1     | .....INLTNPRFTDQAVLA.....                                  |
| Ca_Nit1     | .....INLTNPRFTDQAVLA.....                                  |
| Bea_Nit1    | .....LNLTNPRQFTDQTTQK.....                                 |
| Bi_sGC1     | .....LNLTNPRQFTDQTTQK.....                                 |
| Bi_Nit1     | .....LNIDNPRHFTDRDALQ.....                                 |
| Dg_Nit1     | .....LHVLNPRQFTDQATAL.....                                 |
| Lt_Nit1     | .....LNVNPNRHTDHTALL.....                                  |
| Ml_NIT-like | .....LNIDNPRHFTDKTALL.....                                 |
| Vs_Nit1     | .....LNIDNPRHFTDKTALL.....                                 |
| Oc_Nit1     | .....LNVNPNRQFTDKATLM.....                                 |
| Ocg_Nit1    | .....LNIGNPRHFTDKTALL.....                                 |
| Ocg_Nit12   | .....LNIGNPRHFTDKTALL.....                                 |

610

|             |                                                               |
|-------------|---------------------------------------------------------------|
| Hs_SGCY1    | .....GTEETKQDDD.....                                          |
| Ml_sGC3     | .....TDMGLDVMVDPESSSVISAEGVRSVEERWKIVVEKIRKFEKE               |
| Oc_sGC3     | .....TDMGLDVMVDPESSSVISAEGVRSVEERWKIVVEKIRKFEKE               |
| Ml_sGC1     | .....QKVQDIPNEDQVTSSKSSNKQKDDKSKFSMNSKSLGPFPS..               |
| Ca_sGC1     | .....SQQKQSNWSMEEGLGGAGDEGKGHKS KAKSSRSNG.....                |
| Pf_sGC2     | .....SQQKQSNWSMEEGLGGAGDEGKGHKS KAKSSRSNG.....                |
| Pb_sGC2     | IDQSEDCVTIPSGRPTTAPDTSQVSFRTSRQNSAAAAGSRDFINLQEQSTKNVSMVNRSTH |
| Oc_sGC2     | .....NRKKASNWSGTDQTNVGAEDSKSKSKTKPGRSNNGGVNGR..               |
| Ml_sGC2     | .....KQPVRTTWPQGPTSSHTNEEAKSKNPKAGHSNNGGLNSR..                |
| Vs_sGC2     | .....KQPVRTTWPQGPTSSHTNEEAKSKNPKAGHSNNGGLNSR..                |
| Hc_sGC1     | .....KAKKQSSSWSIIEEGLRGGATDDLKDGHKSKPKSDRSPKYG..              |
| Dg_sGC1     | .....KAKKQSSSWSIIEEGLRGGATDDLKDGHKSKPKSDRSPKYG..              |
| Bea_sGC1    | .....KAKKQSSSWSIIEEGLRGGATDDLKDGHKSKPKSDRSPKYG..              |
| Hc_sGC2     | .....RQKGTNNKQEVPLTPMQAGSGAVNSPAATAAVSGPNVSTS                 |
| Oc_sGC1     | .....RQKGTNNKQEVPLTPMQAGSGAVNSPAATAAVSGPNVSTS                 |
| Ml_sGC4     | .....ALQRQINPLQKVAELSAESRELNDDEREHKNRQTFPNVRNV                |
| Oc_sGC4     | .....PLQKVAELGKEEQGVVEEGARKIKEEEEENGRKKKKGAIKIENV             |
| Hc_sGC4     | .....PLQKVAELGKEEQGVVEEGARKIKEEEEENGRKKKKGAIKIENV             |
| Pp_sGC2     | .....QLQPGGSTSSSKPNVKTTPGGGGPLNKIHPKISPSEVGSVLAAP             |
| Pb_sGC4     | .....LLSSYTKEELTEEEAKKQVNDVLEQVGH.....                        |
| Hs_SGCY3    | .....TNSKPCFQKKDVEDGNANFLGKASGID.....                         |
| Hs_SGCY2    | .....PKPSLSSSRIKKVSYNIGTMFLRETSL.....                         |
| Ed_sGC4     | .....KPKPLTPTPAMLALETPTDTEPAANSTPTTPAEPTVPIILPPP              |
| Pb_Nit1     | ILAHRYPSGPVIVAGIVGKKMPRYCLFGDTVNTASRMESNGEVNRRIFKKLKNQKQIISCF |
| Ed_Nit1     | .....KPKPLTPTPAMLALETPTDTEPAANSTPTTPAEPTVPIILPPP              |
| Hc_Nit1     | .....KK.G.....SYGDQPG.AGFMNIVNIYNPSEEKTH.D                    |
| Pf_Nit12    | .....KRS.G.....VYSDGGAPPNYMNIIVNIYNPDYDKTHND                  |
| Pf_Nit1     | .....KRS.G.....VYSDGGAPPNYMNIIVNIYNPDYDKTHND                  |
| Ps_Nit1     | .....KRS.G.....VYSDGGAPPNYMNIIVNIYNPDYDKTHND                  |
| Ca_Nit1     | .....KRS.G.....VYSDGGAPPNYMNIIVNIYNPDYDKTHND                  |
| Bea_Nit1    | .....RKK.....                                                 |
| Bi_sGC1     | .....RKK.....                                                 |
| Bi_Nit1     | .....KRESNAVTTHATNLVYTVDSNSKKNTVKSSSSPNDMVNYYNL               |
| Dg_Nit1     | .....KKNFVEDRKSNNKLYNNLNHNNKHHKDHKTHYKEFP.....                |
| Lt_Nit1     | .....KRDTSSSQ.....ILIDSSKEKKQSIKSKSVVPDIINFNNL                |
| Ml_NIT-like | .....KRESNSQF.....YTDTDTKKQTVLPKTPQSKDMVKLQQS                 |
| Vs_Nit1     | .....KRESNSQF.....YTDTDTKKQTVLPKTPQSKDMVKLQQS                 |
| Oc_Nit1     | .....KKEASNQFYL.....                                          |
| Ocg_Nit1    | .....KKEASNQI.....FLVGDSSKEGGKSPQ..PSPPEMVNYYNL               |
| Ocg_Nit12   | .....KKEASNQI.....FLVGDSSKEGGKSPQ..PSPPEMVNYYNL               |

|             |                                                              |
|-------------|--------------------------------------------------------------|
| Hs_SGCY1    | .....                                                        |
| Ml_sGC3     | SKICSI.....                                                  |
| Oc_sGC3     | .....                                                        |
| Ml_sGC1     | .....                                                        |
| Ca_sGC1     | .....                                                        |
| Pf_sGC2     | .....                                                        |
| Pb_sGC2     | WKIASAGGRPEKSCTDSKLDISKILAQVELKNKMRRDEAFRPEYSLMELERIKAMNMWLS |
| Oc_sGC2     | .....                                                        |
| Ml_sGC2     | .....                                                        |
| Vs_sGC2     | .....                                                        |
| Hc_sGC1     | .....                                                        |
| Dg_sGC1     | .....                                                        |
| Bea_sGC1    | .....                                                        |
| Hc_sGC2     | ASATTAAVQHSPV.....                                           |
| Oc_sGC1     | .....                                                        |
| Ml_sGC4     | STICTIL.....                                                 |
| Oc_sGC4     | SAICNIL.....                                                 |
| Hc_sGC4     | .....                                                        |
| Pp_sGC2     | PTPIRASRQDELSCSRLCSIM.....                                   |
| Pb_sGC4     | .....                                                        |
| Hs_SGCY3    | .....                                                        |
| Hs_SGCY2    | .....                                                        |
| Ed_sGC4     | PYSTSPSRERSSSGSTSSRDKLLV.....                                |
| Pb_Nit1     | KLCELVNIEKTLXLQYKN.....                                      |
| Ed_Nit1     | .....                                                        |
| Hc_Nit1     | KHLQ.....                                                    |
| Pf_Nit12    | KHLQ.....                                                    |
| Pf_Nit1     | KHLQ.....                                                    |
| Ps_Nit1     | KHLQ.....                                                    |
| Ca_Nit1     | .....                                                        |
| Bea_Nit1    | .....                                                        |
| Bi_sGC1     | .....                                                        |
| Bi_Nit1     | NHVDSKNHKVHLNNKEFQ.....                                      |
| Dg_Nit1     | .....                                                        |
| Lt_Nit1     | NHSDKKSHKVHLNNKEFRS.....                                     |
| Ml_NIT-like | .....                                                        |
| Vs_Nit1     | NHVDSKNHKVHLNNKEFQ.....                                      |
| Oc_Nit1     | .....                                                        |
| Ocg_Nit1    | NHVDSKDKHKVHLNNCKEFP.....                                    |
| Ocg_Nit12   | NHVDSKDKHKVHLNNCKEFP.....                                    |

|             |                                |
|-------------|--------------------------------|
| Hs_SGCY1    | .....                          |
| Ml_sGC3     | .....                          |
| Oc_sGC3     | .....                          |
| Ml_sGC1     | .....                          |
| Ca_sGC1     | .....                          |
| Pf_sGC2     | .....                          |
| Pb_sGC2     | LHLVAMQFLNMYHLLHAIYNVVSFSSNLLI |
| Oc_sGC2     | .....                          |
| Ml_sGC2     | .....                          |
| Vs_sGC2     | .....                          |
| Hc_sGC1     | .....                          |
| Dg_sGC1     | .....                          |
| Bea_sGC1    | .....                          |
| Hc_sGC2     | .....                          |
| Oc_sGC1     | .....                          |
| Ml_sGC4     | .....                          |
| Oc_sGC4     | .....                          |
| Hc_sGC4     | .....                          |
| Pp_sGC2     | .....                          |
| Pb_sGC4     | .....                          |
| Hs_SGCY3    | .....                          |
| Hs_SGCY2    | .....                          |
| Ed_sGC4     | .....                          |
| Pb_Nit1     | .....                          |
| Ed_Nit1     | .....                          |
| Hc_Nit1     | .....                          |
| Pf_Nit12    | .....                          |
| Pf_Nit1     | .....                          |
| Ps_Nit1     | .....                          |
| Ca_Nit1     | .....                          |
| Bea_Nit1    | .....                          |
| Bi_sGC1     | .....                          |
| Bi_Nit1     | .....                          |
| Dg_Nit1     | .....                          |
| Lt_Nit1     | .....                          |
| Ml_NIT-like | .....                          |
| Vs_Nit1     | .....                          |
| Oc_Nit1     | .....                          |
| Ocg_Nit1    | .....                          |
| Ocg_Nit12   | .....                          |