

Supplementary Figure 1. Alignment of the Sec2 GEF domains from the fungal Sec2/Spo13 family members noted in Figure 9. For each protein the species, the GenBank accession number of the protein, and its total length are shown. Amongst the presumptive Spo13 orthologs, the homologous domain extends to the C-terminal side of the GEF homology (upper five sequences).

|                      |              |     |  |                |
|----------------------|--------------|-----|--|----------------|
| <i>S. pombe</i>      | Sp013        | 67  | KEMEDLSVSLFTEANEMVAKARQDTEVLKRELDYLRakeKGRIGKLRSIQTAVR   | (total 138aa)  |
| <i>N. crassa</i>     | EAA32074     | 271 | REIEELSVTLFSEANEMVASERRAKLEERVKTTLEKRDEQKKERLEMLEGAVR    | (total 376aa)  |
| <i>C. immitis</i>    | EER25262     | 204 | SELEDLTTQLFSQANEMVAQERKARAKLEERVEVLELERRDGEKRRRLDRLEKAVA | (total 279aa)  |
| <i>M. grisea</i>     | EDJ94906     | 253 | REVEELSASLFEENEMVATERRARAKLEERVVDILEKRDVEKRRRLERLELAVG   | (total 318aa)  |
| <i>A. nidulans</i>   | XP_680621    | 217 | TELEELTAQLFSQANEMVAQERKARARLEERVAVLERRDIEKRNRLERLEKAME   | (total 280aa)  |
| <i>S. cerevisiae</i> | Sec2         | 99  | KEVEDLTASLFDDEANNVADARKEKYAIEIL                          | (total 742aa)  |
| <i>K. lactis</i>     | XP_45229     | 92  | QEIEDLTASLFDDEANNVADARKEQNAVEIL                          | (total 658aa)  |
| <i>D. hansenii</i>   | XP_459929    | 96  | AEVEDLTASLFDNEANEMVSNASREAYNFKVK                         | (total 647aa)  |
| <i>Y. lipolytica</i> | XP_505944    | 97  | EEMQELSAELFDEANNVSDARRDAAKEVAE                           | (total 661aa)  |
| <i>A. nidulans</i>   | XP_662363    | 193 | QELETTLTAALFEEANKMVAANKLEREAVEKK                         | (total 605aa)  |
| <i>N. crassa</i>     | EAA36306     | 103 | QELENLTAALFEEANKMVISAKKEEARIEQEI                         | (total 642aa)  |
| <i>M. grisea</i>     | EDK01615     | 160 | QELEELSTQLFEEAQKVIAAKEDAQKEQEI                           | (total 669aa)  |
| <i>S. pombe</i>      | NP_593182    | 109 | NELEDLTSSLFEEANRMVANARKEITVASEKR                         | (total 527aa)  |
| <i>C. immitis</i>    | XP_001246665 | 196 | QELADLTAALFEEANKMVAANKKEREAVEKR                          | (total 705aa)  |
| <i>C. cineris</i>    | EAU89437     | 163 | KDLDDLASLFDQANTMVAEARFAQHLSEQK                           | (total 1145aa) |
| <i>C. cineris</i>    | EAU90994     | 177 | DELESLSQALFEEANKMVAQERMKLAETEEE                          | (total 451aa)  |
| <i>C. neoformans</i> | XP_569677    | 94  | AELESLSQALFEEANKMVADEKRRRAEMEEN                          | (total 300aa)  |
| <i>C. neoformans</i> | XP_567458    | 217 | NEVDDLTAKLFDQANTMVA TERMSRAQAEAR                         | (total 990aa)  |

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