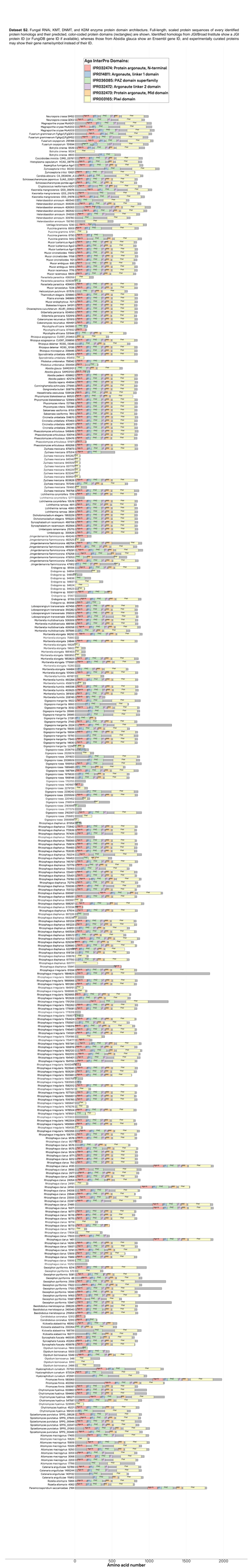
Dataset S2. Fungal RNAi, KMT, DNMT, and KDM enzyme protein domain architecture. Full-length, scaled protein sequences of every identified protein homology and their predicted, color-coded protein domains (rectangles) are shown. Identified homologs from JGIBrowse Institute show a JGI protein ID (or FungiDB gene ID if available), whereas those from Absidia glauca show an Ensembl gene ID, and experimentally curated proteins may show their gene name/symbol instead of their ID.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IPR003165: Piwi domain
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Coccidioides posadasii 5501
Histoplasma capsulatum H146_Ajac
Aspergillus fumigatus Afpf1
Zymoseptoria tritici 9020
Candida albicans CA_C4_06940
Schizosaccharomyces japonicus SJAG_02921
Cryptococcus neoformans 5420
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Heterobasidion annosum 14230
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Puccinia graminis 1512
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Mucor circinelloides 11922
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Mucor lanceolatus 7228
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Thamnidium elegans 33564
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Chaosphaeria cauciflorifrum AFUBI_05602
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Hesseltinella vesiculosa 130928
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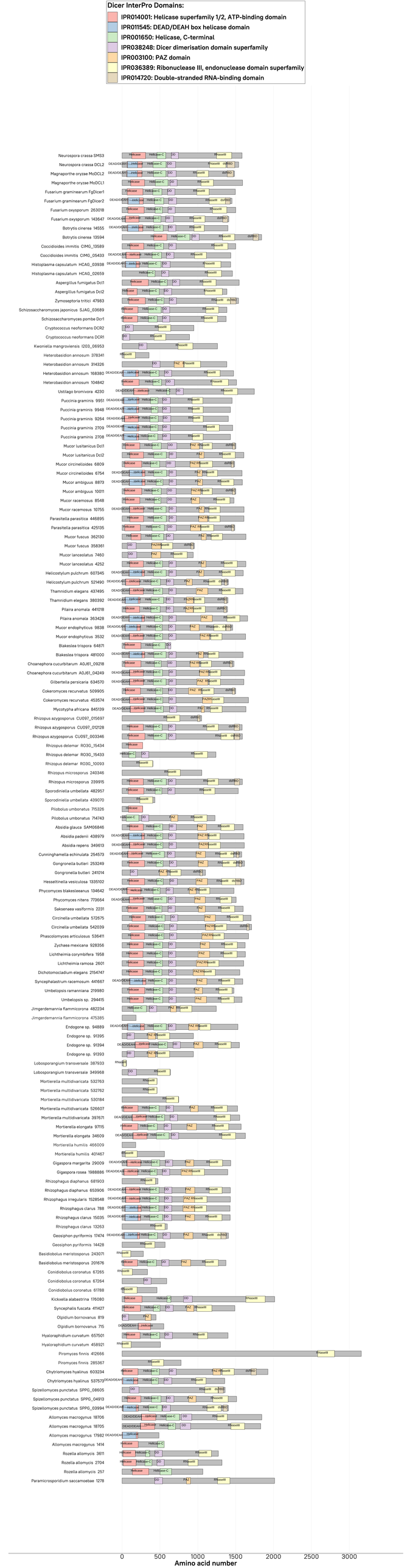
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IPR001650: Helicase, C-terminal
IPR038248: Dicer dimerisation domain superfamily
IPR003100: PAZ domain
IPR036389: Ribonuclease III, endonuclease domain superfamily
IPR014720: Double-stranded RNA-binding domain
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Magnaporthe oryzae MoDCL1
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Fusarium graminearum FgDicer2
Fusarium oxysporum 263018
Fusarium oxysporum 143647
Botrytis cinerea 14555
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Histoplasma capsulatum HCAG_03938
Histoplasma capsulatum HCAG_02659
Aspergillus fumigatus Dcl1
Aspergillus fumigatus Dcl2
Zymoseptoria tritici 47983
Schizosaccharomyces japonicus SJAG_03689
Schizosaccharomyces pombe Dcr1
Cryptococcus neoformans DCR2
Cryptococcus neoformans DCR1
Kwoniella mangroviensis I203_06953
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Heterobasidion annosum 104842
Ustilago bromivora 4230
Puccinia graminis 9951
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Mucor lusitanicus Dcl2
Mucor circinelloides 6809
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Mucor ambiguus 8873
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Thamnidium elegans 380392
Pilaira anomala 441018
Pilaira anomala 363428
Mucor endophyticus 9838
Mucor endophyticus 3532
Blakeslea trispora 64871
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Glibertella persicaria 634570
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Rhizopus microsporus 239915
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Pilobolus umbonatus 714743
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Absidia repens 349613
Cunninghamella echinulata 254573
Gongronella butleri 253249
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Hesseltinella vesiculosa 1335102
Phycomyces blakesleeanus 134642
Phycomyces nitens 773664
Saksenaea vasiformis 2231
Circinella umbellata 572675
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Phascolomyces articulosus 536411
Zychaea mexicana 928356
Lichtheimia corymbifera 1958
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Piromyces finnis 285367
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Spizellomyces punctatus SPPG_04913
Spizellomyces punctatus SPPG_03994
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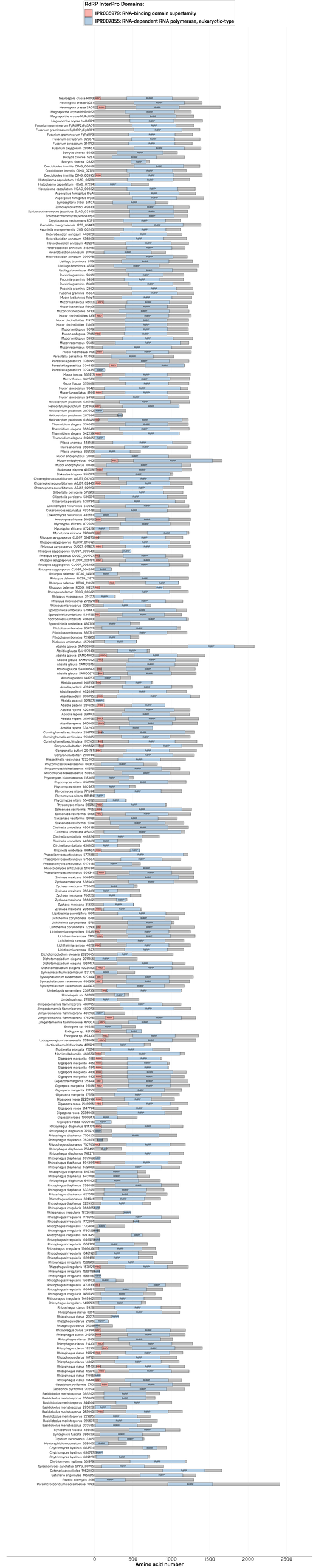
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IPR035979: RNA-binding domain superfamily
IPR007855: RNA-dependent RNA polymerase, eukaryotic-type
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Fusarium oxysporum 320671
Fusarium oxysporum 314702
Fusarium oxysporum 269461
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Botrytis cinerea 12932
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Pilobolus umbonatus 854511
Pilobolus umbonatus 836791
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Cunninghamella echinulata 258773
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Gongronella butleri 259972
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Hesseltinella vesiculosa 1332490
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Circinella umbellata 490438
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Phascolomyces articulosus 577238
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Endogone sp. 89330
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Mortierella humilis 463574
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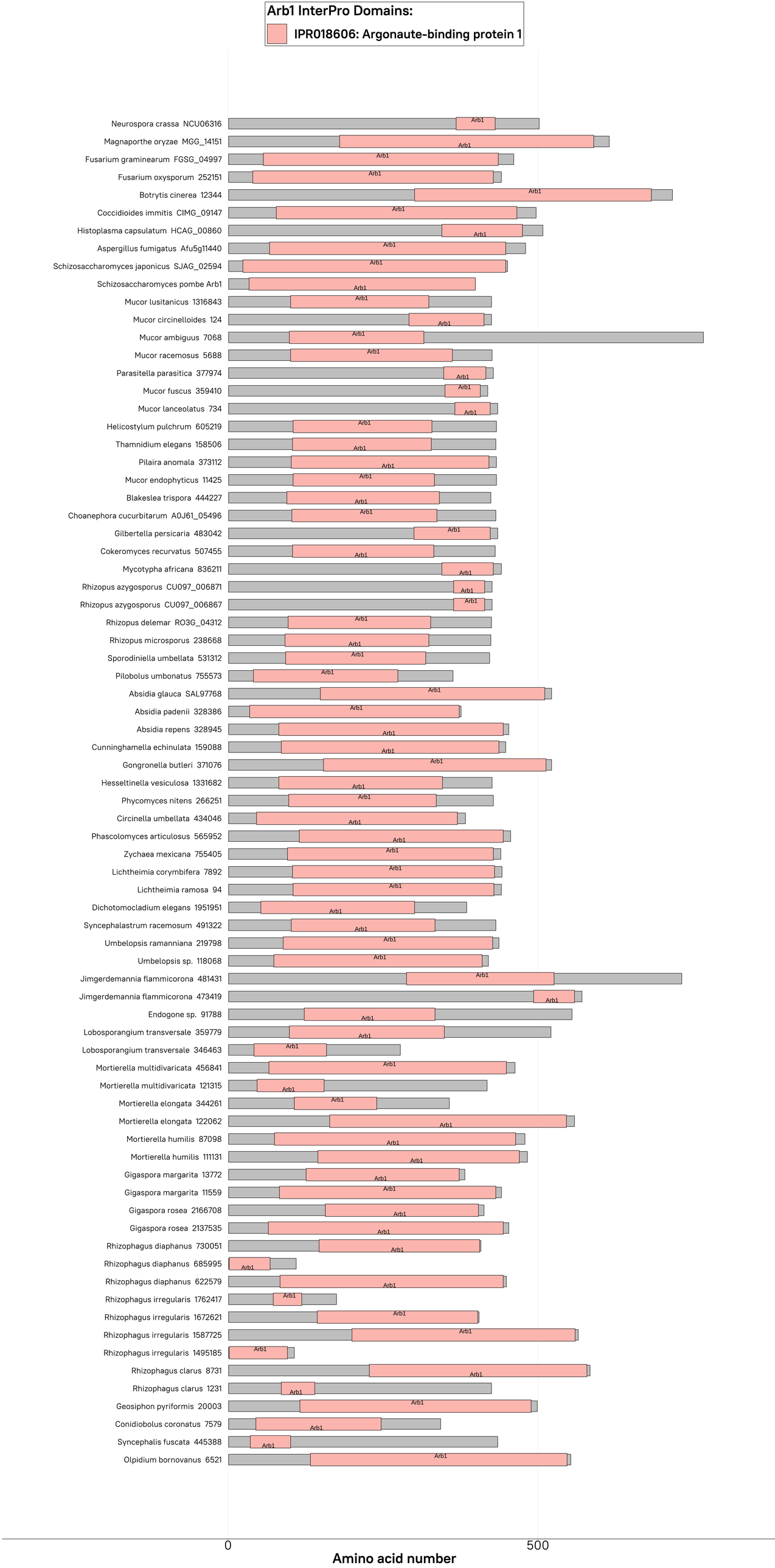
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Coccidioides immitis CIMG_09147
Histoplasma capsulatum HCAG_00860
Aspergillus fumigatus Afu5g11440
Schizosaccharomyces japonicus SJAG_02594
Schizosaccharomyces pombe Arb1
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Mucor circinelloides 124
Mucor ambiguus 7068
Mucor racemosus 5688
Parasitella parasitica 377974
Mucor fuscus 359410
Mucor lanceolatus 734
Helicostylum pulchrum 605219
Thamnidium elegans 158506
Pilaira anomala 373112
Mucor endophyticus 11425
Blakeslea trispora 444227
Choanephora cucurbitarum A0J61_05496
Gilbertella persicaria 483042
Cokeromyces recurvatus 507455
Mycotypha africana 836211
Rhizopus azygosporus CU097_006871
Rhizopus azygosporus CU097_006867
Rhizopus delemar RO3G_04312
Rhizopus microsporus 238668
Sporodiniella umbellata 531312
Pilobolus umbonatus 755573
Absidia glauca SAL97768
Absidia padenii 328386
Absidia repens 328945
Cunninghamella echinulata 159088
Gongronella butleri 371076
Hesseltinella vesiculosa 1331682
Phycomyces nitens 266251
Circinella umbellata 434046
Phascolomyces articulosus 565952
Zychaea mexicana 755405
Lichtheimia corymbifera 7892
Lichtheimia ramosa 94
Dichotomocladium elegans 1951951
Syncephalastrum racemosum 491322
Umbelopsis ramanniana 219798
Umbelopsis sp. 118068
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Mortierella multidivaricata 121315
Mortierella elongata 344261
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Mortierella humilis 87098
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Gigaspora rosea 2166708
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Rhizophagus irregularis 1762417
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Rhizophagus clarus 8731
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Arb2 InterPro Domains:

- IPR029058: Alpha/Beta hydrolase fold
- IPR019154: Arb2 domain
- IPR018004: KilA, N-terminal/APSES-type HTH, DNA-binding

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Fusarium oxysporum 200490
Mucor lusitanicus 1342189 — a/b-HF
Mucor ambiguus 4153 — a/b-HF
Mucor racemosus 6046 — KilA-HTH
Parasitella parasitica 419685
Mucor fuscus 357066
Mucor lanceolatus 3841
Helicostylum pulchrum 560687 — a/b-HF
Thamnidium elegans 423117 — a/b-HF
Pilaira anomala 388768
Mucor endophyticus 8556
Gilbertella persicaria 560366
Cokeromyces recurvatus 506961
Mycotypha africana 813564
Rhizopus azygosporus CU097_011364
Rhizopus delemar RO3G_06395 — a/b-HF
Rhizopus microsporus 240912
Sporodiniella umbellata 527371
Pilobolus umbonatus 725233
Absidia glauca SAL97913 — a/b-HF
Absidia padenii 464202 — a/b-HF
Absidia repens 418884 — a/b-HF
Cunninghamella echinulata 270391
Gongronella butleri 151540
Hesseltinella vesiculosa 1302089 — a/b-HF
Phycomyces blakesleeanus 186125
Phycomyces nitens 834504
Saksenaea vasiformis 3059
Circinella umbellata 456548
Phascolomyces articulosus 502546
Zychaea mexicana 764618
Dichotomocladium elegans 1893688
Syncephalastrum racemosum 564656 — a/b-HF
Umbelopsis ramanniana 258964 — a/b-HF
Umbelopsis ramanniana 231454
Umbelopsis sp. 357802
Umbelopsis sp. 34292 — a/b-HF
Lobosporangium transversale 382922
Mortierella multidivaricata 460398
Mortierella elongata 132923 — a/b-HF
Gigaspora margarita 4186 — a/b-HF
Gigaspora rosea 1061502 — a/b-HF
Rhizophagus diaphanus 811772 — Arb2
Rhizophagus diaphanus 763736 — a/b-HF
Rhizophagus irregularis 1497166 — Arb2
Rhizophagus clarus 22424 — Arb2
Geosiphon pyriformis 17917
Geosiphon pyriformis 17269
Kickxella alabastrina 182946
Syncephalis fuscata 416451
Chytriomyces hyalinus 594705 — a/b-HF

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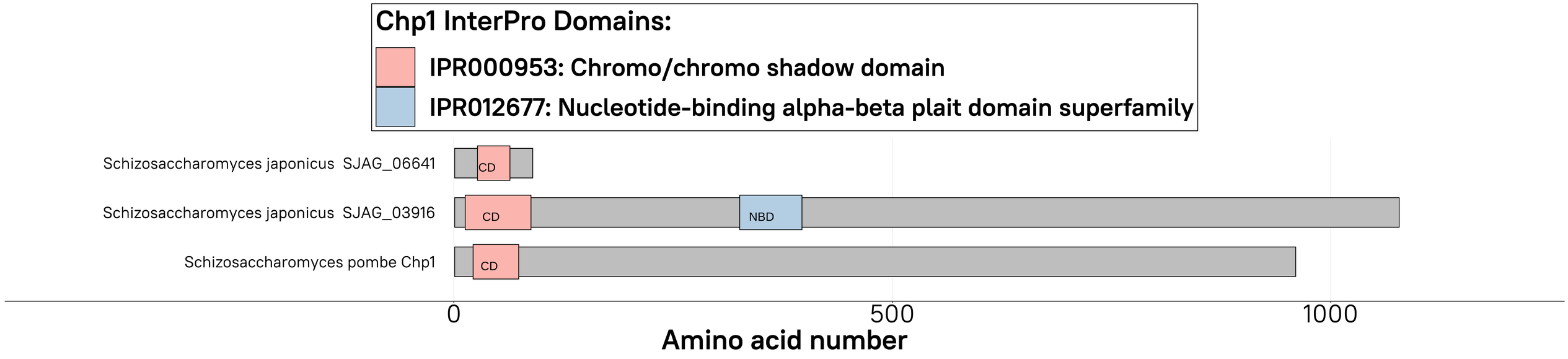
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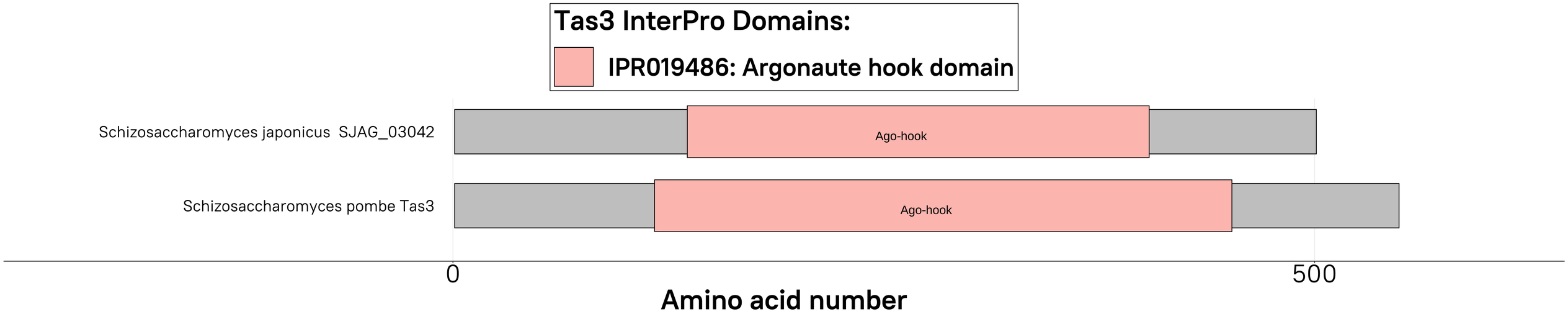
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Ago-hook
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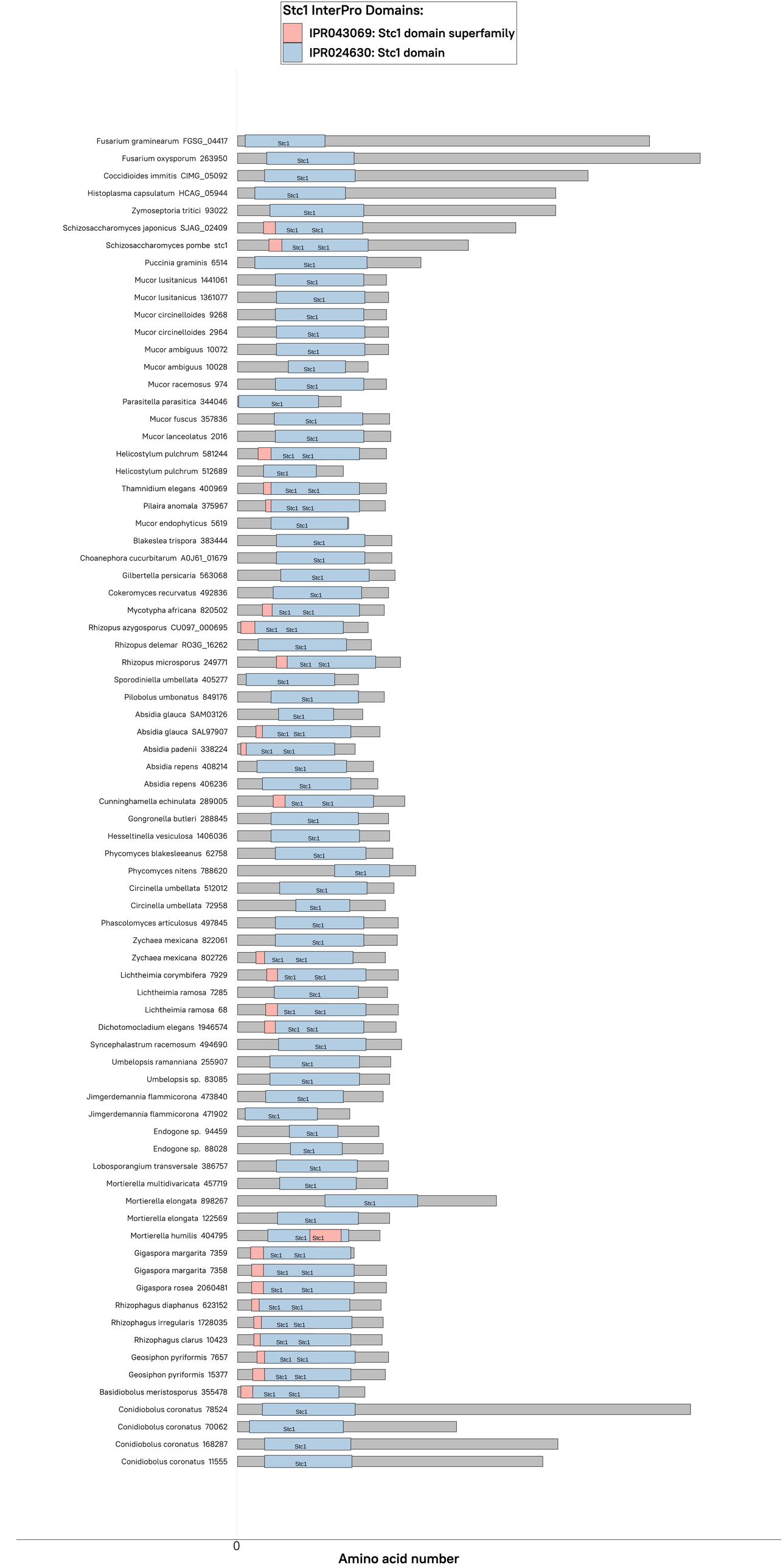
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IPR043069: Stc1 domain superfamily
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Fusarium oxysporum 263950
Coccidioides immitis CIMG_05092
Histoplasma capsulatum HCAG_05944
Zymoseptoria tritici 93022
Schizosaccharomyces japonicus SJAG_02409
Schizosaccharomyces pombe stc1
Puccinia graminis 6514
Mucor lusitanicus 1441061
Mucor lusitanicus 1361077
Mucor circinelloides 9268
Mucor circinelloides 2964
Mucor ambiguus 10072
Mucor ambiguus 10028
Mucor racemosus 974
Parasitella parasitica 344046
Mucor fuscus 357836
Mucor lanceolatus 2016
Helicostylum pulchrum 581244
Helicostylum pulchrum 512689
Thamnidium elegans 400969
Pilaira anomala 375967
Mucor endophyticus 5619
Blakeslea trispora 383444
Choanephora cucurbitarum A0J61_01679
Gilbertella persicaria 563068
Cokeromyces recurvatus 492836
Mycotypha africana 820502
Rhizopus azygosporus CU097_000695
Rhizopus delemar RO3G_16262
Rhizopus microsporus 249771
Sporodiniella umbellata 405277
Pilobolus umbonatus 849176
Absidia glauca SAM03126
Absidia glauca SAL97907
Absidia padenii 338224
Absidia repens 408214
Absidia repens 406236
Cunninghamella echinulata 289005
Gongronella butleri 288845
Hesseltinella vesiculosa 1406036
Phycomyces blakesleeanus 62758
Phycomyces nitens 788620
Circinella umbellata 512012
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Phascolomyces articulosus 497845
Zychaea mexicana 822061
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Lichtheimia corymbifera 7929
Lichtheimia ramosa 7285
Lichtheimia ramosa 68
Dichotomocladium elegans 1946574
Syncephalastrum racemosum 494690
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Umbelopsis sp. 83085
Jimgerdemannia flammicorona 473840
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Endogone sp. 94459
Endogone sp. 88028
Lobosporangium transversale 386757
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Mortierella elongata 898267
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Mortierella humilis 404795
Gigaspora margarita 7359
Gigaspora margarita 7358
Gigaspora rosea 2060481
Rhizophagus diaphanus 623152
Rhizophagus irregularis 1728035
Rhizophagus clarus 10423
Geosiphon pyriformis 7657
Geosiphon pyriformis 15377
Basidiobolus meristosporus 355478
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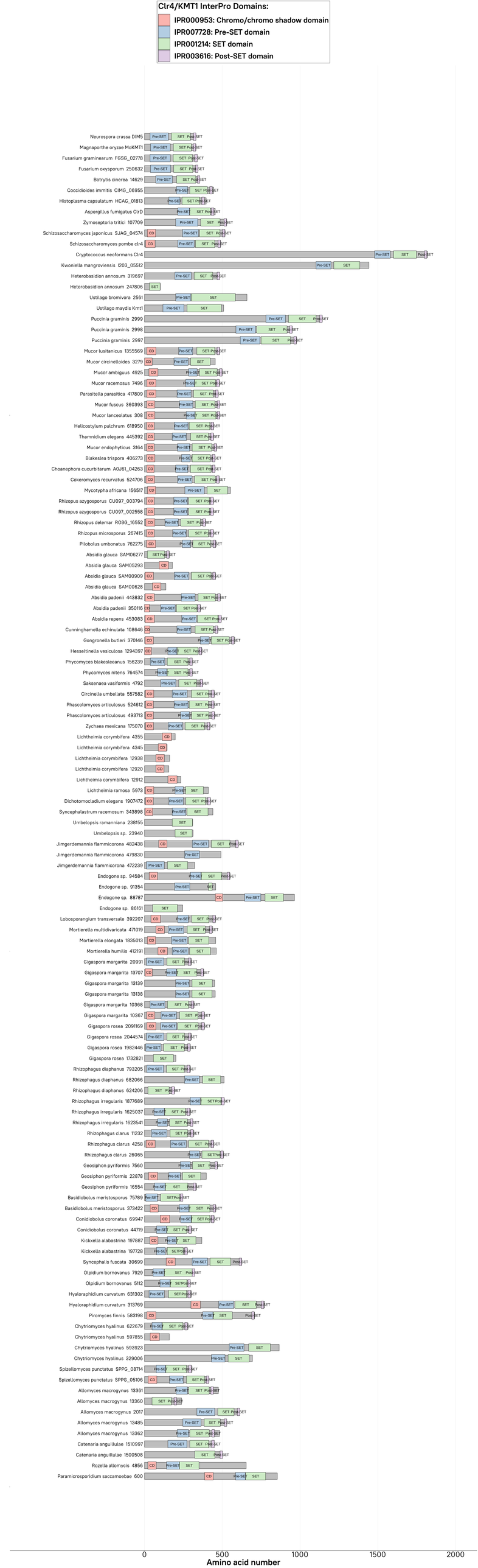
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Magnaporthe oryzae MoKMT1
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Fusarium oxysporum 250632
Botrytis cinerea 14629
Coccidioides immitis CIMG_06955
Histoplasma capsulatum HCAG_01813
Aspergillus fumigatus ClrD
Zymoseptoria tritici 107709
Schizosaccharomyces japonicus SJAG_04574
Schizosaccharomyces pombe clr4
Cryptococcus neoformans Clr4
Kwoniella mangroviensis 1203_05512
Heterobasidion annosum 319697
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Mucor circinelloides 3279
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Mucor racemosus 7496
Parasitella parasitica 417809
Mucor fuscus 360393
Mucor lanceolatus 308
Helicostylum pulchrum 618950
Thamnidium elegans 445392
Mucor endophyticus 3164
Blakeslea trispora 406273
Choanephora cucurbitarum A0J61_04263
Cokeromyces recurvatus 524706
Mycotypha africana 156517
Rhizopus azygosporus CU097_003794
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Rhizopus delemar RO3G_16552
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Absidia glauca SAM06277
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Absidia padenii 443832
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Cunninghamella echinulata 108646
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Phycomyces blakesleeanus 156239
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Saksenaea vasiformis 4792
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Piromyces finnis 583198
Chytriomyces hyalinus 622679
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Spizellomyces punctatus SPPG_05106
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Histoplasma capsulatum HCAG_02556
Aspergillus fumigatus Afu5g12680
Zymoseptoria tritici 37498
Candida albicans C1_06040W_A
Candida auris B9J08_001819
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Schizosaccharomyces pombe Cul4/Pcu4
Cryptococcus neoformans CNAG_03138
Kwoniella mangroviensis I203_07425
Heterobasidion annosum 454352
Ustilago bromivora 3791
Ustilago maydis UMAG_05563
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Puccinia graminis 7490
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Mucor racemosus 9362
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Thamnidium elegans 452755
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Hesseltinella vesiculosa 1384298
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Circinella umbellata 529779
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Phascolomyces articulosus 442590
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Lichtheimia corymbifera 11735
Lichtheimia ramosa 4240
Lichtheimia ramosa 3852
Lichtheimia ramosa 1300
Dichotomocladium elegans 1962753
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Dichotomocladium elegans 1064341
Syncephalastrum racemosum 522096
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Endogone sp. 91460
Lobosporangium transversale 356143
Mortierella multidivaricata 401883
Mortierella elongata 127772
Mortierella humilis 434159
Gigaspora margarita 26957
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Conidiobolus coronatus 18635
Kickxella alabastrina 175499
Syncephalis fuscata 456174
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Olpidium bornovanus 6533
Hyaloraphidium curvatum 759840
Piromyces finnis 299512
Chytriomyces hyalinus 658105
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Spizellomyces punctatus SPPG_01185
Allomyces macrogynus 17587
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Paramicrosporidium saccamoebae 2495
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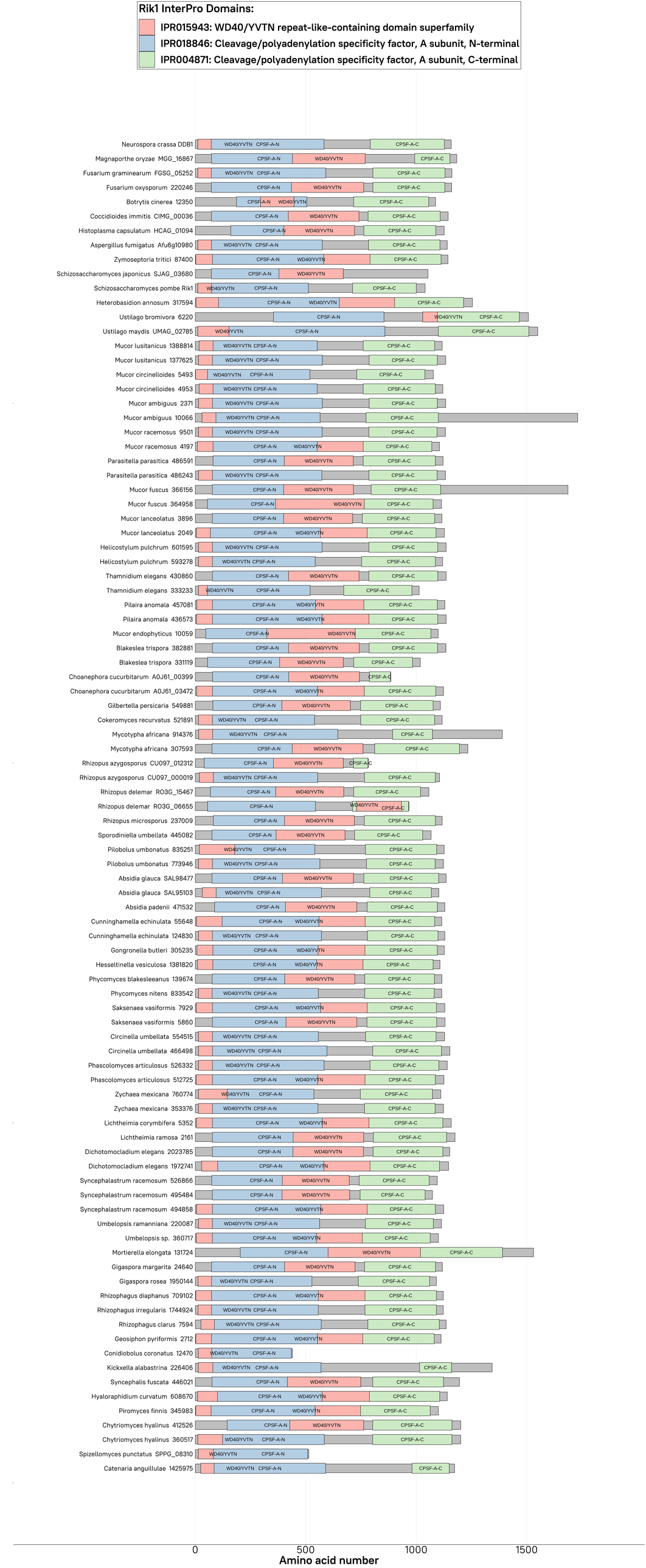
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IPR004871: Cleavage/polyadenylation specificity factor, A subunit, C-terminal
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Magnaporthe oryzae MGG_16867
Fusarium graminearum FGSG_05252
Fusarium oxysporum 220246
Botrytis cinerea 12350
Coccidioides immitis CIMG_00036
Histoplasma capsulatum HCAG_01094
Aspergillus fumigatus Afu6g10980
Zymoseptoria tritici 87400
Schizosaccharomyces japonicus SJAG_03680
Schizosaccharomyces pombe Rik1
Heterobasidion annosum 317594
Ustilago bromivora 6220
Ustilago maydis UMAG_02785
Mucor lusitanicus 1388814
Mucor lusitanicus 1377625
Mucor circinelloides 5493
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Mucor ambiguus 2371
Mucor ambiguus 10066
Mucor racemosus 9501
Mucor racemosus 4197
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Helicostylum pulchrum 593278
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Thamnidium elegans 333233
Pilaira anomala 457081
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Mucor endophyticus 10059
Blakeslea trispora 382881
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Rhizopus delemar RO3G_06655
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Lichtheimia ramosa 2161
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Hyaloraphidium curvatum 608670
Piromyces finnis 345983
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Spizellomyces punctatus SPPG_08310
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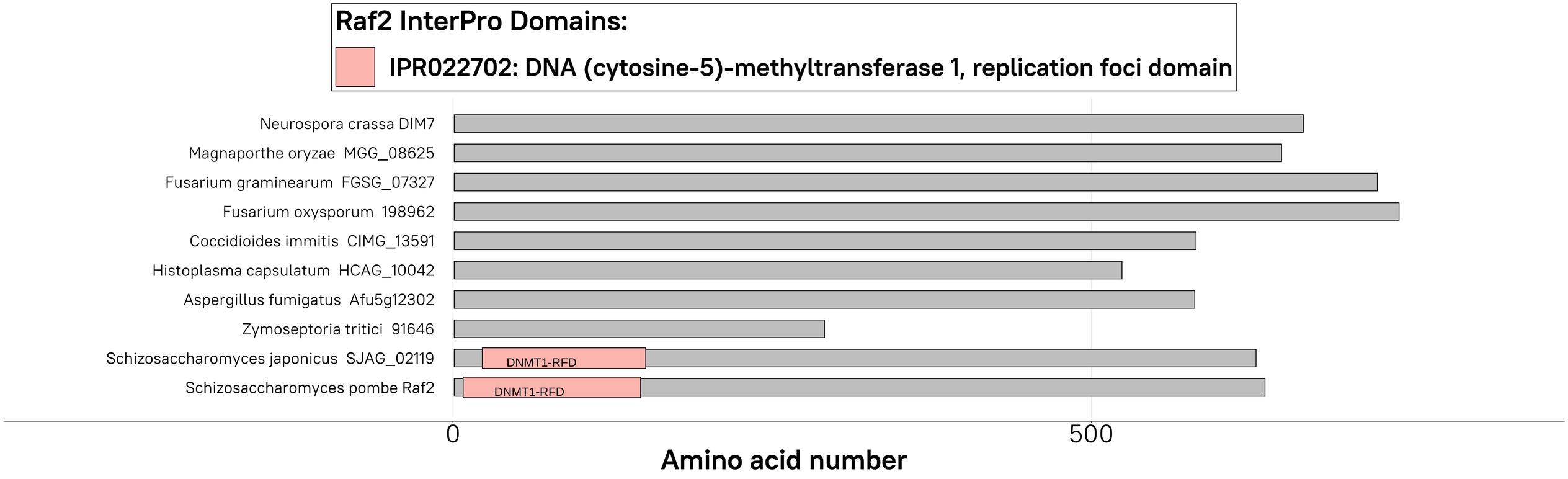
Amino acid number

Raf1 InterPro Domains:

- IPR009057: Homeobox-like domain superfamily
- IPR001005: SANT/Myb domain
- IPR037783: Transcription initiation factor TFIID subunit 5
- IPR001680: WD40 repeat
- IPR020472: G-protein beta WD-40 repeat
- IPR037588: Target of rapamycin complex subunit LST8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IPR022702: DNA (cytosine-5)-methyltransferase 1, replication foci domain
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Fusarium graminearum FGSG_07327
Fusarium oxysporum 198962
Coccidioides immitis CIMG_13591
Histoplasma capsulatum HCAG_10042
Aspergillus fumigatus Afu5g12302
Zymoseptoria tritici 91646
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Schizosaccharomyces pombe Raf2
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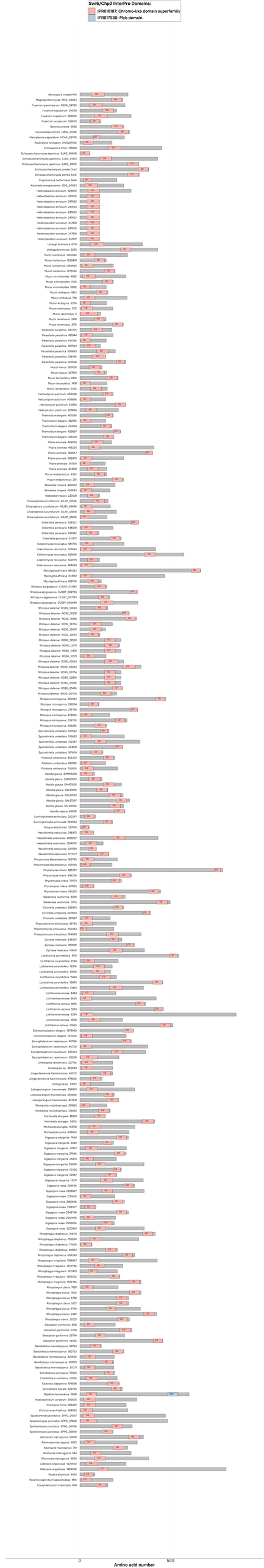
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Fusarium oxysporum 29018B
Fusarium oxysporum 29035
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Fusarium oxysporum 138820
Botrytis cinerea 9038
Cocciodides immitis CIMG_01286
Histoplasma capsulatum HCAG_05700
Aspergillus fumigatus AfuA@7100
Zymoseptoria tritici 108991
Schizosaccharomyces japonicus SJAG_06608
Schizosaccharomyces japonicus SJAG_01801
Schizosaccharomyces japonicus SJAG_01979
Schizosaccharomyces pombe Chp2
Schizosaccharomyces pombe Swi6
Cryptococcus neoformans Swi6
Kwoniella mangroviensis GD5_00062
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Heterobasidion annosum 247618
Heterobasidion annosum 247617
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Ustilago bromivora 2226
Mucor luxitanicus 1905045
Mucor luxitanicus 1390891
Mucor luxitanicus 1366640
Mucor luxitanicus 1276535
Mucor circinelloides 4632
Mucor circinelloides 4130
Mucor circinelloides 10152
Mucor ambiguus 9812
Mucor ambiguus 728
Mucor ambiguus 3290
Mucor racemosus 7172
Mucor racemosus 5
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Parasitella parasitica 318446
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Mucor lanceolatus 8451
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Gongronella butleri 317109
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Phycomyces blakesleeanus 116793
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Sabaeaea vasiformis 8320
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Circinella umbellata 526993
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Circinella umbellata 281337
Phaeosclerumyces articulosus 42793
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Zychaea mexicana 838497
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Dichotomocladium elegans 1974120
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Prismaria finnis 585475
Chytriomyces hyalinus 589532
Spizellomyces punctatus SPPG_01137
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Allomyces macrogynus 10009
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Catenaria anguillulae 1429590
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Paramicrosporidium saccamoebae 1518
Encephalitozoon intestinalis 654
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KMT6 InterPro Domains:

- IPR001005: SANT/Myb domain
- IPR026489: CXC domain
- IPR046341: SET domain superfamily
- IPR033467: Tesmin/TSO1-like CXC domain
- IPR041355: Pre-SET CXC domain
- IPR040595: EZH2, N-terminal domain
- IPR040968: MCSS domain
- IPR006560: AWS domain
- IPR045318: Histone-lysine N-methyltransferase EZH1/2-like

Neurospora crassa SET7 — EZH2-N, MCSS, CXC, SET
Magnaporthe oryzae MoKMT6 — EZH2-N, MCSS, CXC, SET
Fusarium graminearum FGSG_00899 — MCSS, SET
Fusarium oxysporum 173144 — EZH2-N, MCSS, CXC, Pre-SET, SET
Botrytis cinerea 13898 — CXC, SET
Zymoseptoria tritici 25126 — CXC, Pre-SET, SET
Cryptococcus neoformans Ezh2 — CXC, SET
Kwoniella mangroviensis I203_04617 — CXC, Pre-SET, SET
Heterobasidion annosum 422355 — CXC, SET
Puccinia graminis 11140 — CXC, AWS, SET
Jimgerdemannia flammicorona 482518 — SET
Gigaspora margarita 18428 — SANT/Myb, CXC, Tesmin, SET
Gigaspora rosea 171189 — SANT/Myb, CXC, Tesmin, Pre-SET, SET
Rhizophagus diaphanus 713725 — SANT/Myb, CXC, SET
Rhizophagus irregularis 1627790 — SANT/Myb, CXC, Pre-SET, SET
Rhizophagus clarus 19533 — SANT/Myb, CXC, SET
Geosiphon pyriformis 14134 — EZH1/2, CXC, SET
Spizellomyces punctatus SPPG_03589 — CXC, Pre-SET, SET
Allomyces macrogynus 12895 — CXC, SET
Catenaria anguillulae 129315 — CXC, SET
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Encephalitozoon intestinalis 1806 — CXC, AWS, SET

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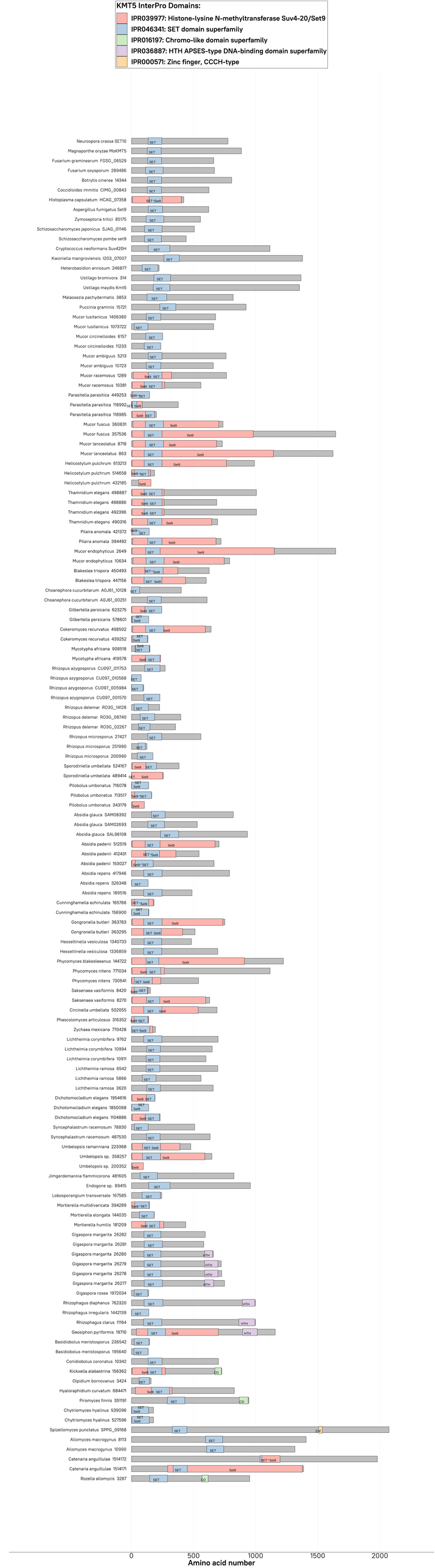
Amino acid number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IPR016197: Chromo-like domain superfamily
IPR036887: HTH APSES-type DNA-binding domain superfamily
IPR000571: Zinc finger, CCCH-type
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Coccidioides immitis CIMG_00843
Histoplasma capsulatum HCAG_07358
Aspergillus fumigatus Set9
Zymoseptoria tritici 85175
Schizosaccharomyces japonicus SJAG_01146
Schizosaccharomyces pombe set9
Cryptococcus neoformans Suv420H
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Heterobasidion annosum 246877
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Malassezia pachydermatis 3853
Puccinia graminis 15721
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Absidia glauca SAM08392
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Absidia glauca SAL96108
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Absidia repens 417946
Absidia repens 326348
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Cunninghamella echinulata 165766
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Gongronella butleri 363783
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Phycomyces blakesleeanus 144722
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Saksenaea vasiformis 8420
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Circinella umbellata 502055
Phascolomyces articulosus 316352
Zychaea mexicana 770428
Lichtheimia corymbifera 9762
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Umbelopsis sp. 358257
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Endogone sp. 89415
Lobosporangium transversale 167585
Mortierella multidivaricata 394289
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Gigaspora margarita 26278
Gigaspora margarita 26277
Gigaspora rosea 1972034
Rhizophagus diaphanus 762320
Rhizophagus irregularis 1442139
Rhizophagus clarus 11164
Geosiphon pyriformis 19710
Basidiobolus meristosporus 236542
Basidiobolus meristosporus 195640
Conidiobolus coronatus 10342
Kickxella alabastrina 156362
Olpidium bornovanus 3424
Hyaloraphidium curvatum 684471
Piromyces finnis 351191
Chytriomyces hyalinus 539096
Chytriomyces hyalinus 527596
Spizellomyces punctatus SPPG_09168
Aliomyces macrogynus 8113
Allomyces macrogynus 10990
Catenaria anguillulae 1514172
Catenaria anguillulae 1514171
Rozella allomycis 3287
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Set9
SET-Set9
HTH
CD
ZnF
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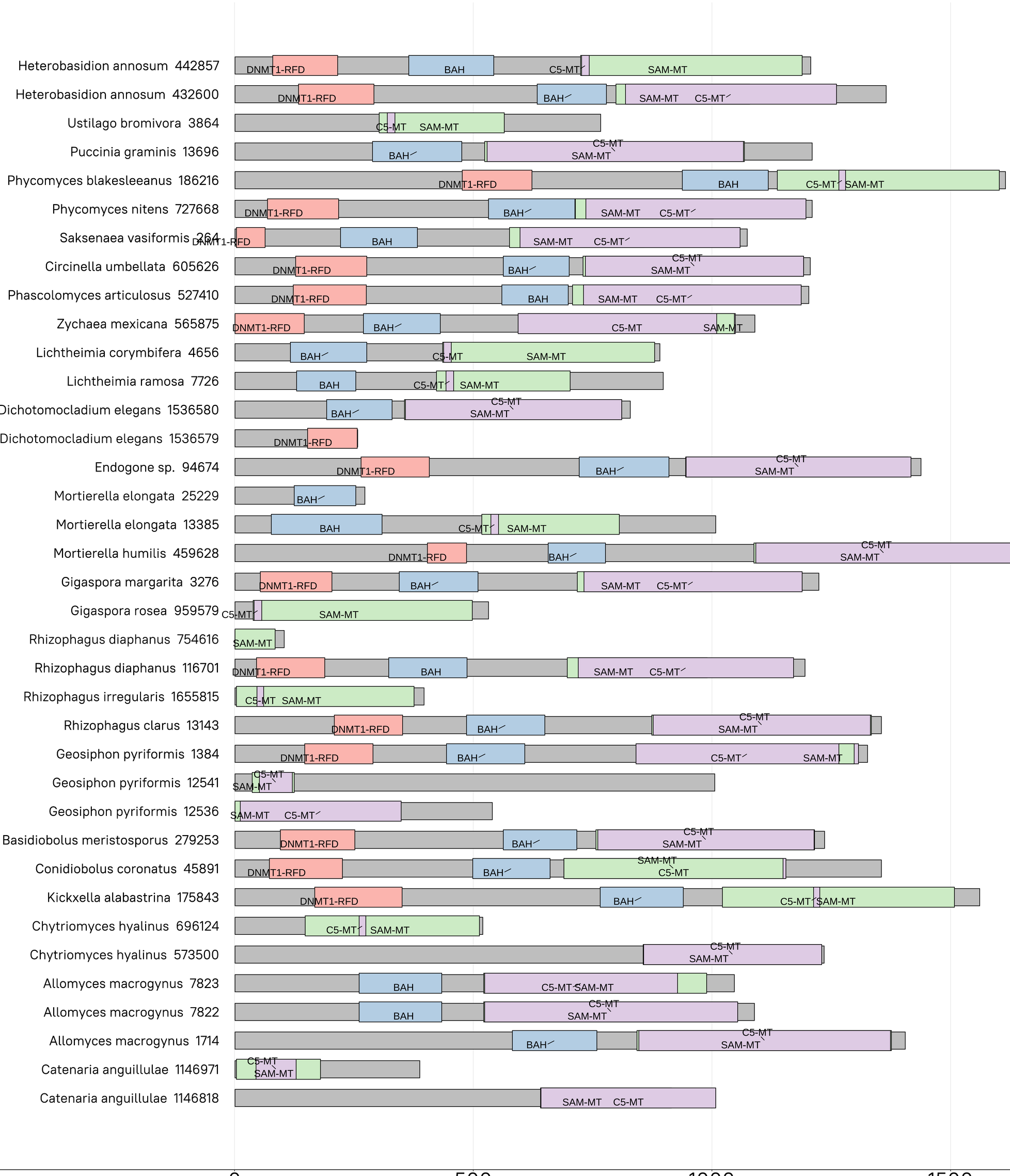
500
1000
1500
2000
Amino acid number

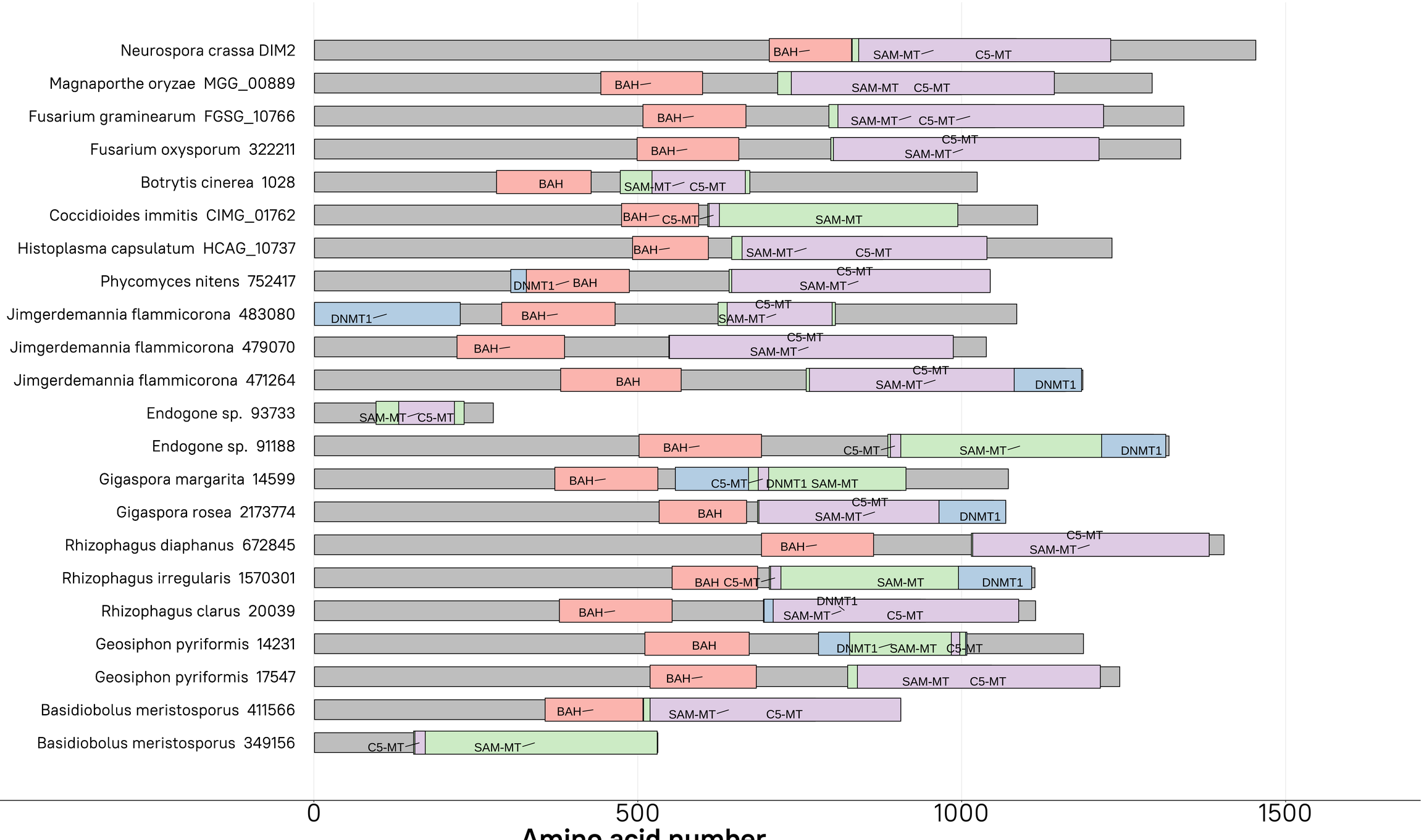
DNMT1 InterPro Domains:

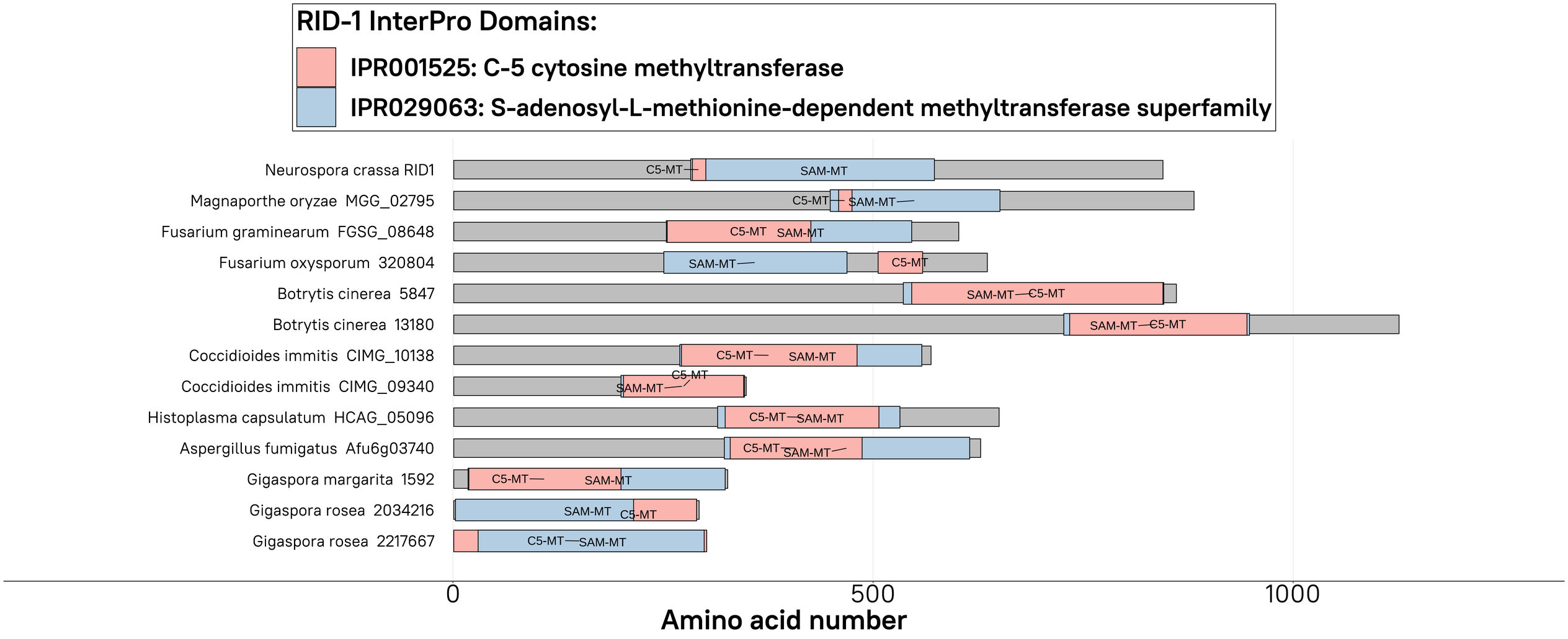
- IPR022702: DNA (cytosine-5)-methyltransferase 1, replication foci domain
- IPR043151: Bromo adjacent homology (BAH) domain superfamily
- IPR029063: S-adenosyl-L-methionine-dependent methyltransferase superfamily
- IPR001525: C-5 cytosine methyltransferase



DIM-2 InterPro Domains:

- IPR043151: Bromo adjacent homology (BAH) domain superfamily
- IPR017198: DNA (cytosine-5)-methyltransferase 1-like
- IPR029063: S-adenosyl-L-methionine-dependent methyltransferase superfamily
- IPR001525: C-5 cytosine methyltransferase




RID-1 InterPro Domains:
IPR001525: C-5 cytosine methyltransferase
IPR029063: S-adenosyl-L-methionine-dependent methyltransferase superfamily
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Magnaporthe oryzae MGG_02795
Fusarium graminearum FGSG_08648
Fusarium oxysporum 320804
Botrytis cinerea 5847
Botrytis cinerea 13180
Coccidioides immitis CIMG_10138
Coccidioides immitis CIMG_09340
Histoplasma capsulatum HCAG_05096
Aspergillus fumigatus Afu6g03740
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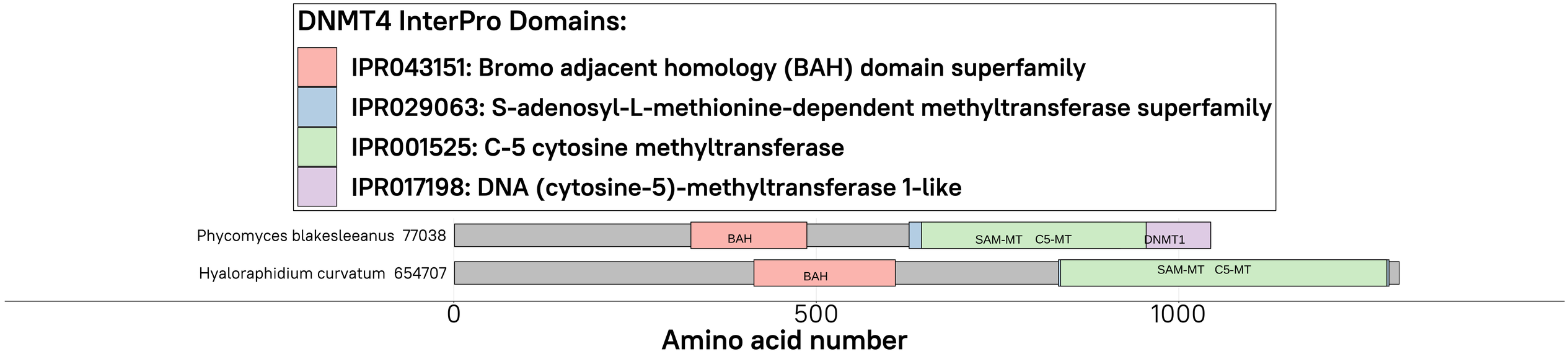
Amino acid number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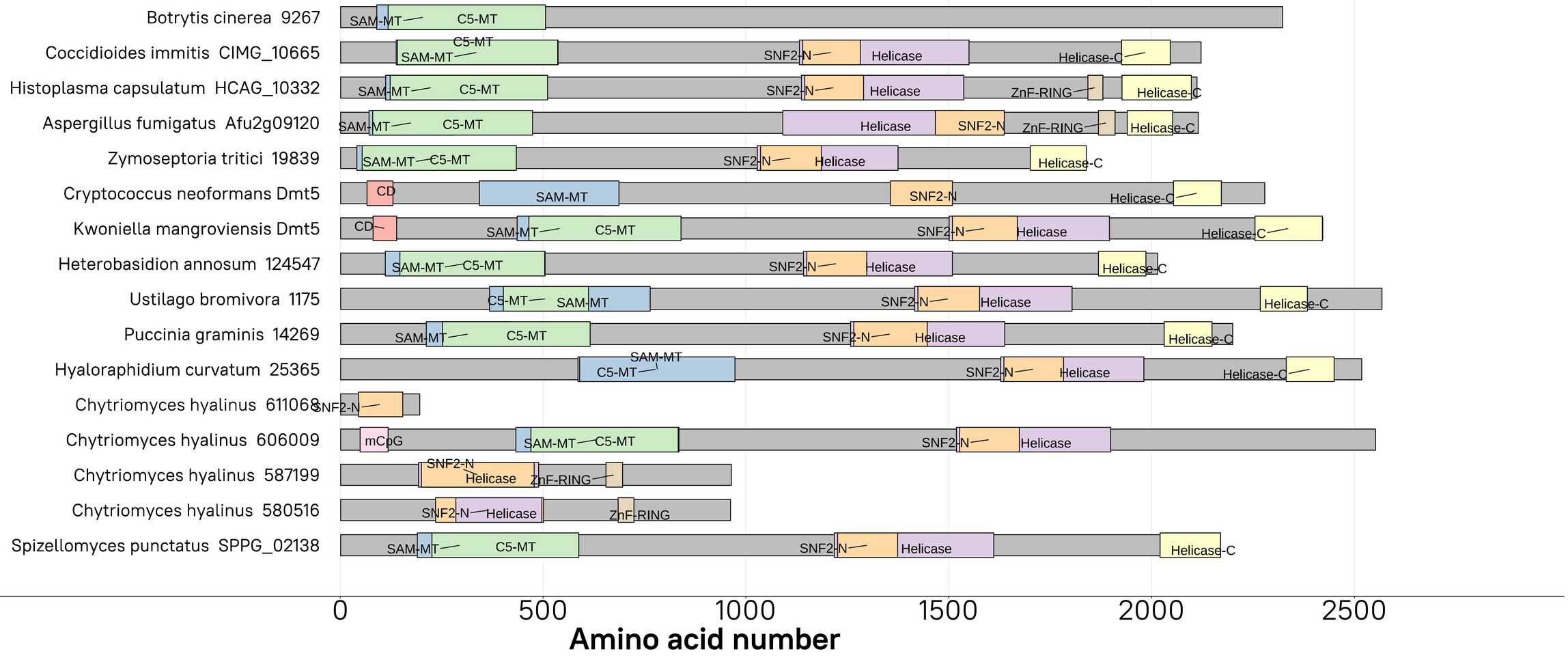
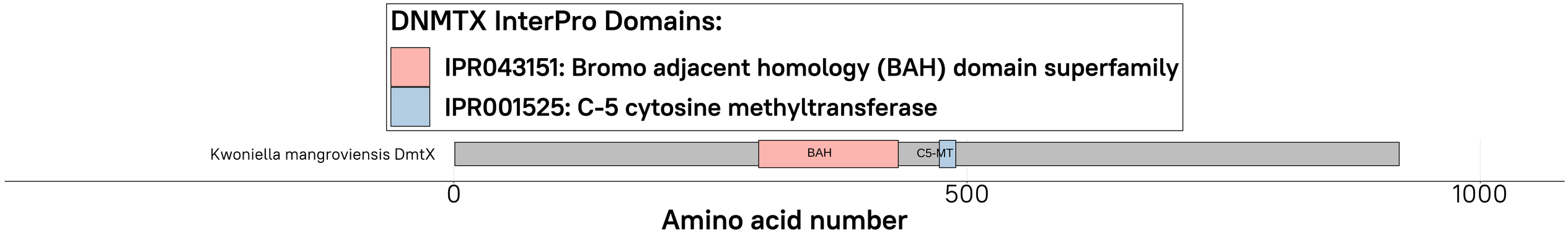
IPR043151: Bromo adjacent homology (BAH) domain superfamily
IPR029063: S-adenosyl-L-methionine-dependent methyltransferase superfamily
IPR001525: C-5 cytosine methyltransferase
IPR017198: DNA (cytosine-5)-methyltransferase 1-like
Phycomyces blakesleeanus 77038
BAH
SAM-MT
C5-MT
DNMT1
Hyaloraphidium curvatum 654707
BAH
SAM-MT
C5-MT
0
500
1000
Amino acid number

DNMT5 InterPro Domains:

- IPR000953: Chromo/chromo shadow domain
- IPR029063: S-adenosyl-L-methionine-dependent methyltransferase superfamily
- IPR001525: C-5 cytosine methyltransferase
- IPR014001: Helicase superfamily 1/2, ATP-binding domain
- IPR000330: SNF2, N-terminal
- IPR001650: Helicase, C-terminal
- IPR001841: Zinc finger, RING-type
- IPR001739: Methyl-CpG DNA binding

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IPR001525: C-5 cytosine methyltransferase
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BAH
C5-MT
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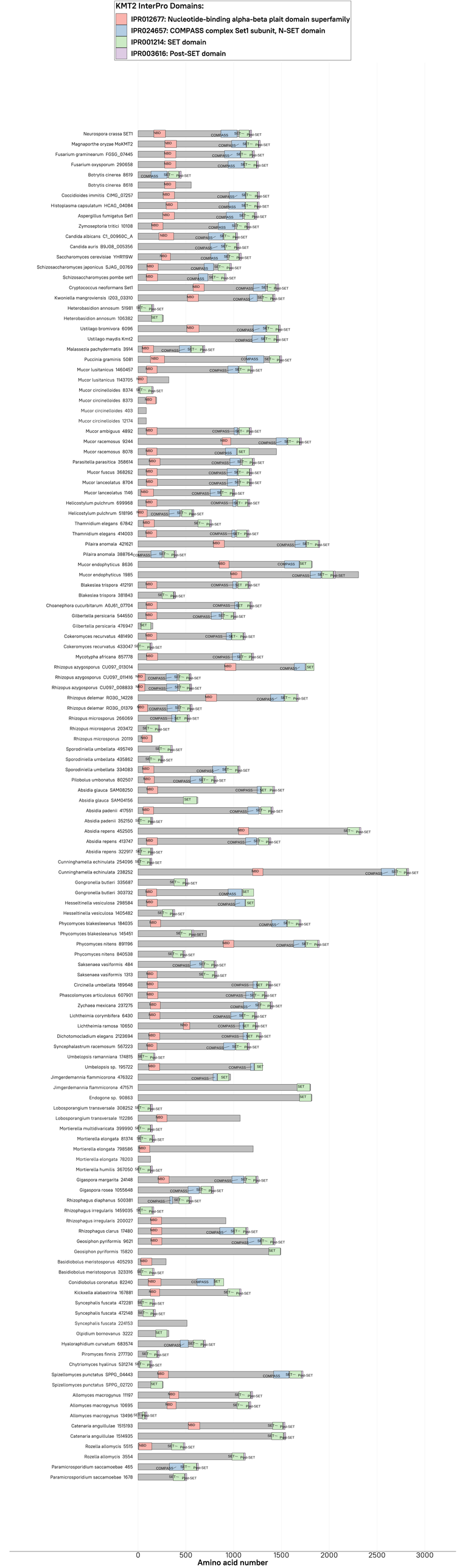
500
1000
Amino acid number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IPR012677: Nucleotide-binding alpha-beta plait domain superfamily
IPR024657: COMPASS complex Set1 subunit, N-SET domain
IPR001214: SET domain
IPR003616: Post-SET domain
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Magnaporthe oryzae MoKMT2
Fusarium graminearum FGSG_07445
Fusarium oxysporum 290658
Botrytis cinerea 8619
Botrytis cinerea 8618
Coccidioides immitis CIMG_07257
Histoplasma capsulatum HCAG_04084
Aspergillus fumigatus Set1
Zymoseptoria tritici 10108
Candida albicans C1_00960C_A
Candida auris B9J08_005356
Saccharomyces cerevisiae YHR119W
Schizosaccharomyces japonicus SJAG_00769
Schizosaccharomyces pombe set1
Cryptococcus neoformans Set1
Kwoniella mangroviensis 1203_03310
Heterobasidion annosum 51981
Heterobasidion annosum 106382
Ustilago bromivora 6096
Ustilago maydis Kmt2
Malassezia pachydermatis 3914
Puccinia graminis 5081
Mucor lusitanicus 1460457
Mucor lusitanicus 1143705
Mucor circinelloides 8374
Mucor circinelloides 8373
Mucor circinelloides 403
Mucor circinelloides 12174
Mucor ambiguus 4892
Mucor racemosus 9244
Mucor racemosus 8078
Parasitella parasitica 358614
Mucor fuscus 368262
Mucor lanceolatus 8704
Mucor lanceolatus 1146
Helicostylum pulchrum 699968
Helicostylum pulchrum 518196
Thamnidium elegans 67842
Thamnidium elegans 414003
Pilaira anomala 421621
Pilaira anomala 388764
Mucor endophyticus 8636
Mucor endophyticus 1985
Blakeslea trispora 412191
Blakeslea trispora 381843
Choanephora cucurbitarum A0J61_07704
Gilbertella persicaria 544550
Gilbertella persicaria 476947
Cokeromyces recurvatus 481490
Cokeromyces recurvatus 433047
Mycotypha africana 857778
Rhizopus azygosporus CU097_013014
Rhizopus azygosporus CU097_011416
Rhizopus azygosporus CU097_008833
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Rhizopus delemar RO3G_01379
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Rhizopus microsporus 203472
Rhizopus microsporus 20119
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Absidia glauca SAM08250
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Absidia padenii 417551
Absidia padenii 352150
Absidia repens 452505
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Cunninghamella echinulata 254096
Cunninghamella echinulata 238252
Gongronella butleri 335687
Gongronella butleri 303732
Hesseltinella vesiculosa 298584
Hesseltinella vesiculosa 1405482
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Phycomyces blakesleeanus 145451
Phycomyces nitens 891196
Phycomyces nitens 840538
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Saksenaea vasiformis 1313
Circinella umbellata 189648
Phascolomyces articulosus 607901
Zychaea mexicana 237275
Lichtheimia corymbifera 6430
Lichtheimia ramosa 10650
Dichotomocladium elegans 2123694
Syncephalastrum racemosum 567223
Umbelopsis ramanniana 174815
Umbelopsis sp. 195722
Jimgerdemannia flammicorona 476322
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Endogone sp. 90863
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Lobosporangium transversale 112286
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Mortierella elongata 798586
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Mortierella humilis 367050
Gigaspora margarita 24148
Gigaspora rosea 1055648
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Rhizophagus irregularis 1459035
Rhizophagus irregularis 200027
Rhizophagus clarus 17480
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Conidiobolus coronatus 82240
Kickxella alabastrina 167881
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Syncephalis fuscata 472148
Syncephalis fuscata 224153
Olpidium bornovanus 3222
Hyaloraphidium curvatum 683574
Piromyces finnis 277730
Chytriomyces hyalinus 531274
Spizellomyces punctatus SPPG_04443
Spizellomyces punctatus SPPG_02720
Allomyces macrogynus 11197
Allomyces macrogynus 10695
Allomyces macrogynus 13496
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Catenaria anguillulae 1514935
Rozella allomycis 5515
Rozella allomycis 3554
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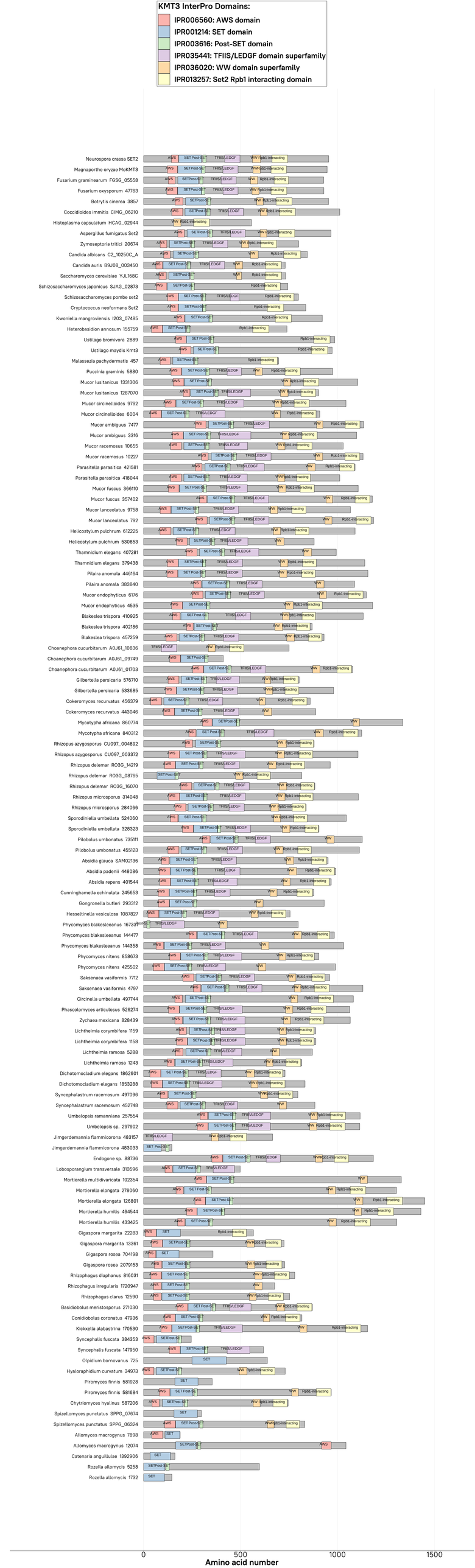
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IPR001214: SET domain
IPR003616: Post-SET domain
IPR035441: TFIIS/LEDGF domain superfamily
IPR036020: WW domain superfamily
IPR013257: Set2 Rpb1 interacting domain
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Fusarium graminearum FGSG_05558
Fusarium oxysporum 47763
Botrytis cinerea 3857
Coccidioides immitis CIMG_06210
Histoplasma capsulatum HCAG_02944
Aspergillus fumigatus Set2
Zymoseptoria tritici 20674
Candida albicans C2_10250C_A
Candida auris B9J08_003450
Saccharomyces cerevisiae YJL168C
Schizosaccharomyces japonicus SJAG_02873
Schizosaccharomyces pombe set2
Cryptococcus neoformans Set2
Kwoniella mangroviensis I203_07485
Heterobasidion annosum 155759
Ustilago bromivora 2889
Ustilago maydis Kmt3
Malassezia pachydermatis 457
Puccinia graminis 5880
Mucor lusitanicus 1331306
Mucor lusitanicus 1287070
Mucor circinelloides 9792
Mucor circinelloides 6004
Mucor ambiguus 7477
Mucor ambiguus 3316
Mucor racemosus 10655
Mucor racemosus 10227
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Mucor fuscus 366110
Mucor fuscus 357402
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Thamnidium elegans 379438
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Gilbertella persicaria 533685
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Cokeromyces recurvatus 443046
Mycotypha africana 860774
Mycotypha africana 840312
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Rhizopus azygosporus CU097_003372
Rhizopus delemar RO3G_14219
Rhizopus delemar RO3G_08765
Rhizopus delemar RO3G_16070
Rhizopus microsporus 314048
Rhizopus microsporus 284066
Sporodiniella umbellata 524060
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Pilobolus umbonatus 455123
Absidia glauca SAM02136
Absidia padenii 448086
Absidia repens 401544
Cunninghamella echinulata 245653
Gongronella butleri 293312
Hesseltinella vesiculosa 1087827
Phycomyces blakesleeanus 16735
Phycomyces blakesleeanus 144477
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Phycomyces nitens 858673
Phycomyces nitens 425502
Saksenaea vasiformis 7712
Saksenaea vasiformis 4797
Circinella umbellata 497744
Phascolomyces articulosus 526274
Zychaea mexicana 828439
Lichtheimia corymbifera 1159
Lichtheimia corymbifera 1158
Lichtheimia ramosa 5288
Lichtheimia ramosa 1243
Dichotomocladium elegans 1862601
Dichotomocladium elegans 1853288
Syncephalastrum racemosum 497096
Syncephalastrum racemosum 452748
Umbelopsis ramanniana 257554
Umbelopsis sp. 297902
Jimgerdemannia flammicorona 483157
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Endogone sp. 88736
Lobosporangium transversale 313596
Mortierella multidivaricata 102354
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Mortierella elongata 126801
Mortierella humilis 464544
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Gigaspora rosea 704198
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Rhizophagus diaphanus 816031
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Rhizophagus clarus 12590
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Conidiobolus coronatus 47936
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Syncephalis fuscata 147950
Olpidium bornovanus 725
Hyaloraphidium curvatum 34973
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Piromyces finnis 581684
Chytriomyces hyalinus 587206
Spizellomyces punctatus SPPG_07674
Spizellomyces punctatus SPPG_06324
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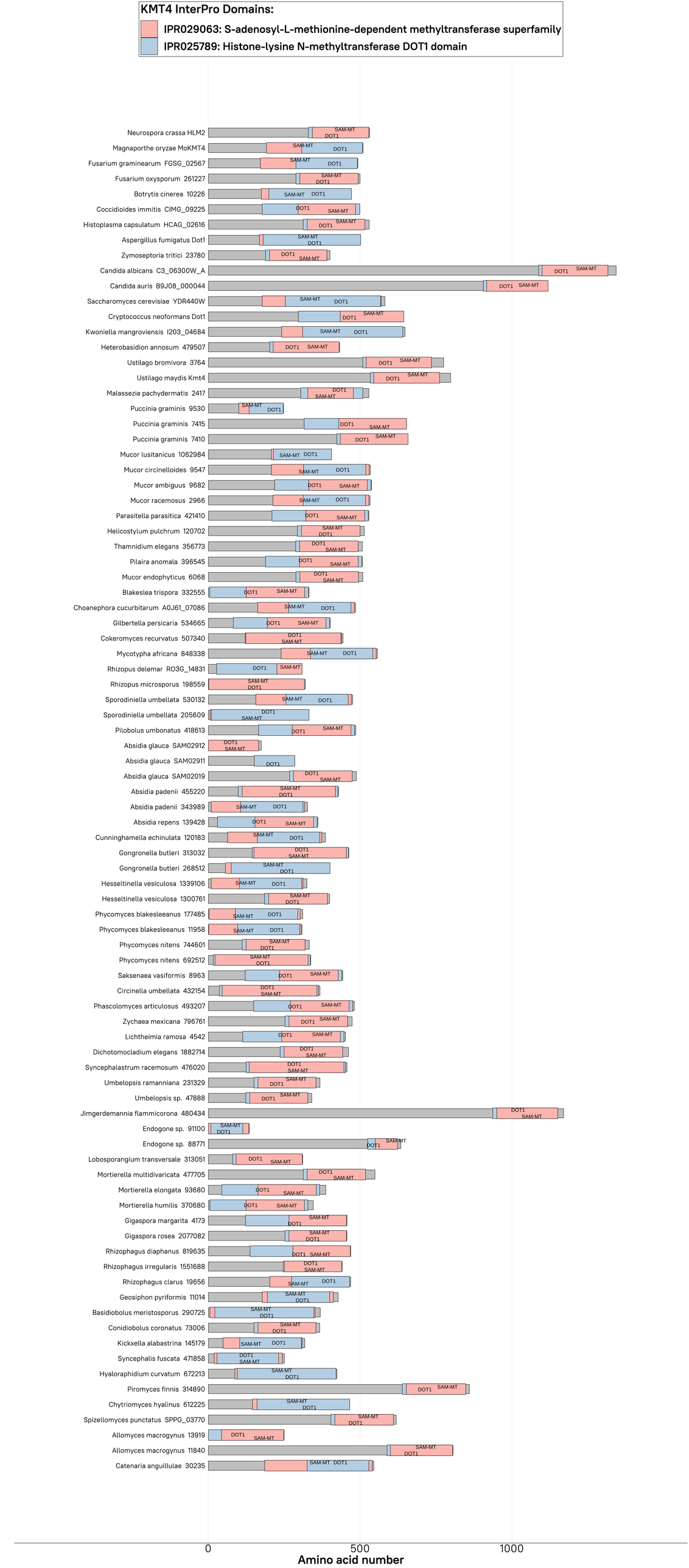
KMT4 InterPro Domains:
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IPR025789: Histone-lysine N-methyltransferase DOT1 domain
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Magnaporthe oryzae MoKMT4
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Coccidioides immitis CIMG_09225
Histoplasma capsulatum HCAG_02616
Aspergillus fumigatus Dot1
Zymoseptoria tritici 23780
Candida albicans C3_06300W_A
Candida auris B9J08_000044
Saccharomyces cerevisiae YDR440W
Cryptococcus neoformans Dot1
Kwoniella mangroviensis I203_04684
Heterobasidion annosum 479507
Ustilago bromivora 3764
Ustilago maydis Kmt4
Malassezia pachydermatis 2417
Puccinia graminis 9530
Puccinia graminis 7415
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Mucor lusitanicus 1062984
Mucor circinelloides 9547
Mucor ambiguus 9682
Mucor racemosus 2966
Parasitella parasitica 421410
Helicostylum pulchrum 120702
Thamnidium elegans 356773
Pilaira anomala 396545
Mucor endophyticus 6068
Blakeslea trispora 332555
Choanephora cucurbitarum A0J61_07086
Gilbertella persicaria 534665
Cokeromyces recurvatus 507340
Mycotypha africana 848338
Rhizopus delemar RO3G_14831
Rhizopus microsporus 198559
Sporodiniella umbellata 530132
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Pilobolus umbonatus 418613
Absidia glauca SAM02912
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Absidia glauca SAM02019
Absidia padenii 455220
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Absidia repens 139428
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Zychaea mexicana 796761
Lichtheimia ramosa 4542
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Syncephalastrum racemosum 476020
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Endogone sp. 88771
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Mortierella elongata 93680
Mortierella humilis 370680
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Gigaspora rosea 2077082
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Rhizophagus irregularis 1551688
Rhizophagus clarus 19656
Geosiphon pyriformis 11014
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Conidiobolus coronatus 73006
Kickxella alabastrina 145179
Syncephalis fuscata 471858
Hyaloraphidium curvatum 672213
Piromyces finnis 314890
Chytriomyces hyalinus 612225
Spizellomyces punctatus SPPG_03770
Allomyces macrogynus 13919
Allomyces macrogynus 11840
Catenaria anguillulae 30235
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DOT1
0
500
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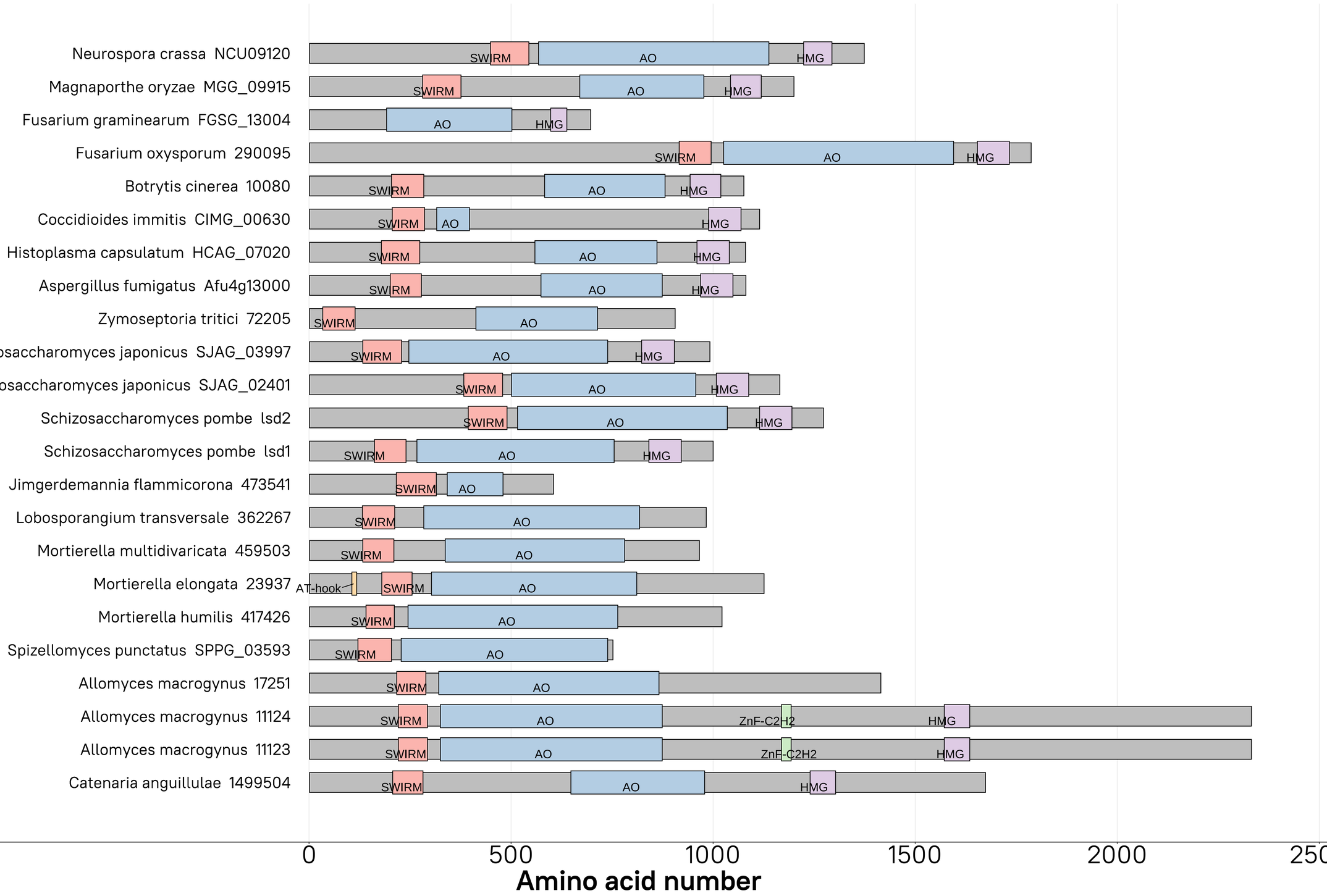
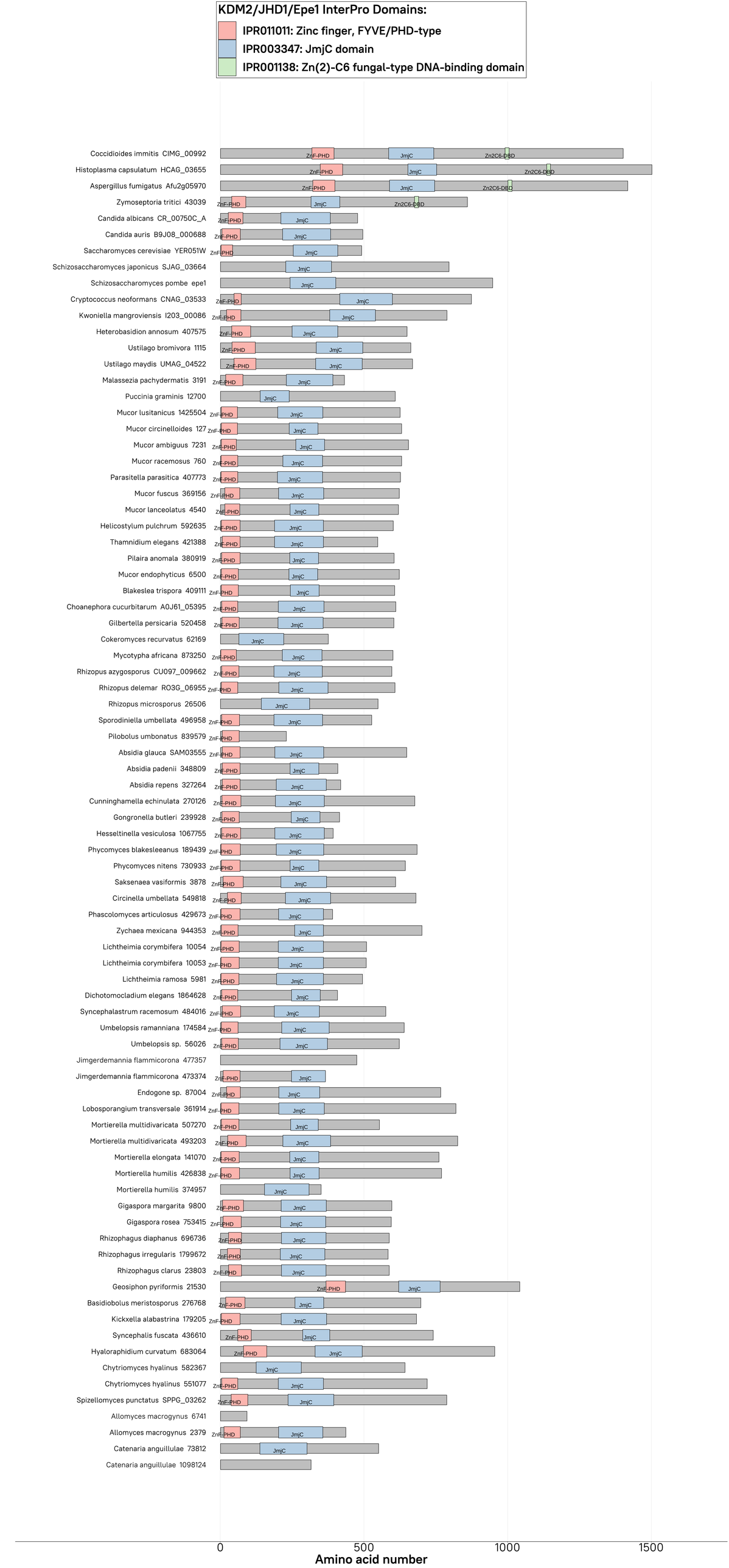
Amino acid number

KDM1/Lsd1/AOF-2 InterPro Domains:

- IPR007526: SWIRM domain
- IPR002937: Amine oxidase
- IPR013087: Zinc finger C2H2-type
- IPR009071: High mobility group box domain
- IPR017956: AT hook, DNA-binding motif




KDM2/JHD1/Epe1 InterPro Domains:
IPR011011: Zinc finger, FYVE/PHD-type
IPR003347: JmjC domain
IPR001138: Zn(2)-C6 fungal-type DNA-binding domain
Coccidioides immitis CIMG_00992
Histoplasma capsulatum HCAG_03655
Aspergillus fumigatus Afu2g05970
Zymoseptoria tritici 43039
Candida albicans CR_00750C_A
Candida auris B9J08_000688
Saccharomyces cerevisiae YER051W
Schizosaccharomyces japonicus SJAG_03664
Schizosaccharomyces pombe epe1
Cryptococcus neoformans CNAG_03533
Kwoniella mangroviensis I203_00086
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Ustilago maydis UMAG_04522
Malassezia pachydermatis 3191
Puccinia graminis 12700
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Absidia glauca SAM03555
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Zychaea mexicana 944353
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Syncephalastrum racemosum 484016
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Umbelopsis sp. 56026
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Kickxella alabastrina 179205
Syncephalis fuscata 436610
Hyaloraphidium curvatum 683064
Chytriomyces hyalinus 582367
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Spizellomyces punctatus SPPG_03262
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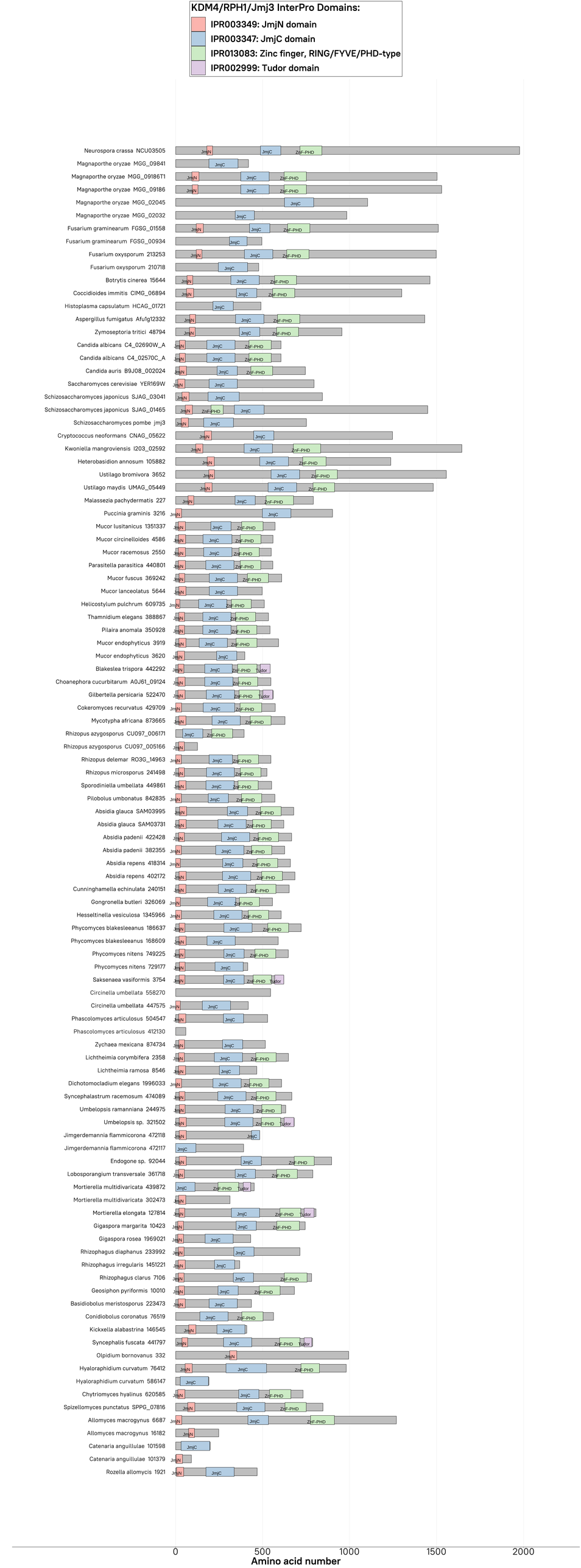
Amino acid number


KDM4/RPH1/Jmj3 InterPro Domains:
IPR003349: JmjN domain
IPR003347: JmjC domain
IPR013083: Zinc finger, RING/FYVE/PHD-type
IPR002999: Tudor domain
Neurospora crassa NCU03505
Magnaporthe oryzae MGG_09841
Magnaporthe oryzae MGG_09186T1
Magnaporthe oryzae MGG_09186
Magnaporthe oryzae MGG_02045
Magnaporthe oryzae MGG_02032
Fusarium graminearum FGSG_01558
Fusarium graminearum FGSG_00934
Fusarium oxysporum 213253
Fusarium oxysporum 210718
Botrytis cinerea 15644
Coccidioides immitis CIMG_06894
Histoplasma capsulatum HCAG_01721
Aspergillus fumigatus Afu1g12332
Zymoseptoria tritici 48794
Candida albicans C4_02690W_A
Candida albicans C4_02570C_A
Candida auris B9J08_002024
Saccharomyces cerevisiae YER169W
Schizosaccharomyces japonicus SJAG_03041
Schizosaccharomyces japonicus SJAG_01465
Schizosaccharomyces pombe jmj3
Cryptococcus neoformans CNAG_05622
Kwoniella mangroviensis I203_02592
Heterobasidion annosum 105882
Ustilago bromivora 3652
Ustilago maydis UMAG_05449
Malassezia pachydermatis 227
Puccinia graminis 3216
Mucor lusitanicus 1351337
Mucor circinelloides 4586
Mucor racemosus 2550
Parasitella parasitica 440801
Mucor fuscus 369242
Mucor lanceolatus 5644
Helicostylum pulchrum 609735
Thamnidium elegans 388867
Pilaira anomala 350928
Mucor endophyticus 3919
Mucor endophyticus 3620
Blakeslea trispora 442292
Choanephora cucurbitarum A0J61_09124
Gilbertella persicaria 522470
Cokeromyces recurvatus 429709
Mycotypha africana 873665
Rhizopus azygosporus CU097_006171
Rhizopus azygosporus CU097_005166
Rhizopus delemar RO3G_14963
Rhizopus microsporus 241498
Sporodiniella umbellata 449861
Pilobolus umbonatus 842835
Absidia glauca SAM03995
Absidia glauca SAM03731
Absidia padenii 422428
Absidia padenii 382355
Absidia repens 418314
Absidia repens 402172
Cunninghamella echinulata 240151
Gongronella butleri 326069
Hesseltinella vesiculosa 1345966
Phycomyces blakesleeanus 186637
Phycomyces blakesleeanus 168609
Phycomyces nitens 749225
Phycomyces nitens 729177
Saksenaea vasiformis 3754
Circinella umbellata 558270
Circinella umbellata 447575
Phascolomyces articulosus 504547
Phascolomyces articulosus 412130
Zychaea mexicana 874734
Lichtheimia corymbifera 2358
Lichtheimia ramosa 8546
Dichotomocladium elegans 1996033
Syncephalastrum racemosum 474089
Umbelopsis ramanniana 244975
Umbelopsis sp. 321502
Jimgerdemannia flammicorona 472118
Jimgerdemannia flammicorona 472117
Endogone sp. 92044
Lobosporangium transversale 361718
Mortierella multidivaricata 439872
Mortierella multidivaricata 302473
Mortierella elongata 127814
Gigaspora margarita 10423
Gigaspora rosea 1969021
Rhizophagus diaphanus 233992
Rhizophagus irregularis 1451221
Rhizophagus clarus 7106
Geosiphon pyriformis 10010
Basidiobolus meristosporus 223473
Conidiobolus coronatus 76519
Kickxella alabastrina 146545
Syncephalis fuscata 441797
Olpidium bornovanus 332
Hyaloraphidium curvatum 76412
Hyaloraphidium curvatum 586147
Chytriomyces hyalinus 620585
Spizellomyces punctatus SPPG_07816
Allomyces macrogynus 6687
Allomyces macrogynus 16182
Catenaria anguillulae 101598
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JmjC
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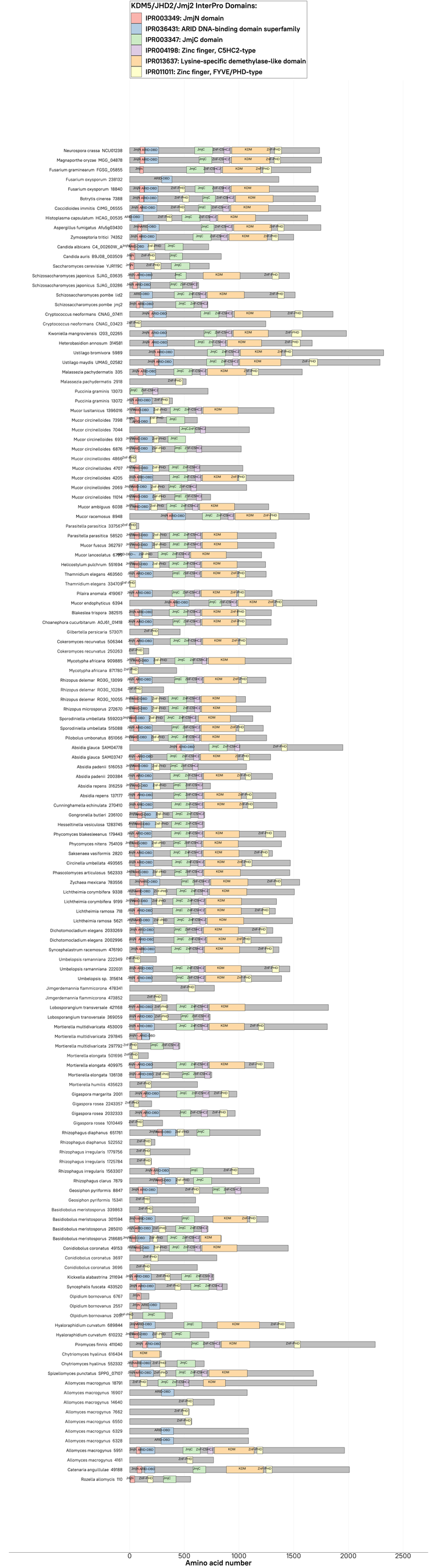
Amino acid number


KDM5/JHD2/Jmj2 InterPro Domains:
IPR003349: JmjN domain
IPR036431: ARID DNA-binding domain superfamily
IPR003347: JmjC domain
IPR004198: Zinc finger, C5HC2-type
IPR013637: Lysine-specific demethylase-like domain
IPR011011: Zinc finger, FYVE/PHD-type
Neurospora crassa NCU01238
Magnaporthe oryzae MGG_04878
Fusarium graminearum FGSG_05855
Fusarium oxysporum 238132
Fusarium oxysporum 18840
Botrytis cinerea 7388
Coccidioides immitis CIMG_06555
Histoplasma capsulatum HCAG_00535
Aspergillus fumigatus Afu5g03430
Zymoseptoria tritici 74352
Candida albicans C4_00260W_A
Candida auris B9J08_003509
Saccharomyces cerevisiae YJR119C
Schizosaccharomyces japonicus SJAG_03635
Schizosaccharomyces japonicus SJAG_03286
Schizosaccharomyces pombe lid2
Schizosaccharomyces pombe jmj2
Cryptococcus neoformans CNAG_07411
Cryptococcus neoformans CNAG_03423
Kwoniella mangroviensis I203_02265
Heterobasidion annosum 314581
Ustilago bromivora 5989
Ustilago maydis UMAG_02582
Malassezia pachydermatis 335
Malassezia pachydermatis 2918
Puccinia graminis 13073
Puccinia graminis 13072
Mucor lusitanicus 1396016
Mucor circinelloides 7398
Mucor circinelloides 7044
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Mucor circinelloides 4707
Mucor circinelloides 4205
Mucor circinelloides 2069
Mucor circinelloides 11014
Mucor ambiguus 6038
Mucor racemosus 8948
Parasitella parasitica 337562
Parasitella parasitica 58520
Mucor fuscus 362797
Mucor lanceolatus 6798
Helicostylum pulchrum 551694
Thamnidium elegans 463560
Thamnidium elegans 334709
Pilaira anomala 419067
Mucor endophyticus 6394
Blakeslea trispora 382515
Choanephora cucurbitarum A0J61_01418
Gilbertella persicaria 573071
Cokeromyces recurvatus 506344
Cokeromyces recurvatus 250263
Mycotypha africana 909885
Mycotypha africana 871780
Rhizopus delemar RO3G_13099
Rhizopus delemar RO3G_10284
Rhizopus delemar RO3G_10055
Rhizopus microsporus 272670
Sporodiniella umbellata 559203
Sporodiniella umbellata 515088
Pilobolus umbonatus 851066
Absidia glauca SAM04778
Absidia glauca SAM03747
Absidia padenii 516053
Absidia padenii 200384
Absidia repens 316259
Absidia repens 137177
Cunninghamella echinulata 270410
Gongronella butleri 236100
Hesseltinella vesiculosa 1283745
Phycomyces blakesleeanus 179443
Phycomyces nitens 754109
Saksenaea vasiformis 2820
Circinella umbellata 493565
Phascolomyces articulosus 562333
Zychaea mexicana 783556
Lichtheimia corymbifera 9338
Lichtheimia corymbifera 9199
Lichtheimia ramosa 718
Lichtheimia ramosa 5621
Dichotomocladium elegans 2033269
Dichotomocladium elegans 2002996
Syncephalastrum racemosum 476190
Umbelopsis ramanniana 222349
Umbelopsis ramanniana 222031
Umbelopsis sp. 315614
Jimgerdemannia flammicorona 478341
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Lobosporangium transversale 421168
Lobosporangium transversale 369059
Mortierella multidivaricata 453009
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Mortierella elongata 409975
Mortierella elongata 136138
Mortierella humilis 435623
Gigaspora margarita 2001
Gigaspora rosea 2243357
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Rhizophagus diaphanus 651761
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Rhizophagus irregularis 1779756
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Rhizophagus irregularis 1563307
Rhizophagus clarus 7879
Geosiphon pyriformis 8847
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Basidiobolus meristosporus 339863
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Conidiobolus coronatus 49153
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Kickxella alabastrina 211694
Syncephalis fuscata 433520
Olpidium bornovanus 6767
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Hyaloraphidium curvatum 689844
Hyaloraphidium curvatum 610232
Piromyces finnis 411040
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Spizellomyces punctatus SPPG_07107
Allomyces macrogynus 18791
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Allomyces macrogynus 14640
Allomyces macrogynus 7662
Allomyces macrogynus 6550
Allomyces macrogynus 6329
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Allomyces macrogynus 4161
Catenaria anguillulae 49188
Rozella allomycis 110
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2000
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Amino acid number