LEGEND FOR SUPPLEMENTARY FIGURES

Figure S1: Colony morphology at 1x magnification: A. *Cystobacter fuscus* DSM 2262^T, **B.** *Hyalangium minutum* DSM 14724^T and **C.** *Chondromyces apiculatus* DSM 436

Figure S2: Distribution of TCS proteins and CSS within myxobacteria as a function of genome size. The purple and black line depict the trendlines for total TCS and total CSS respectively. P-value was calculated using one-way Anova test in regression analysis.

Figure S3: Alignment of myxobacterial CheA proteins. All CheA proteins were aligned with concatenated domain sequence of Hpt, P2, H-kinase-dim, HATPase, CheW and Response_reg.

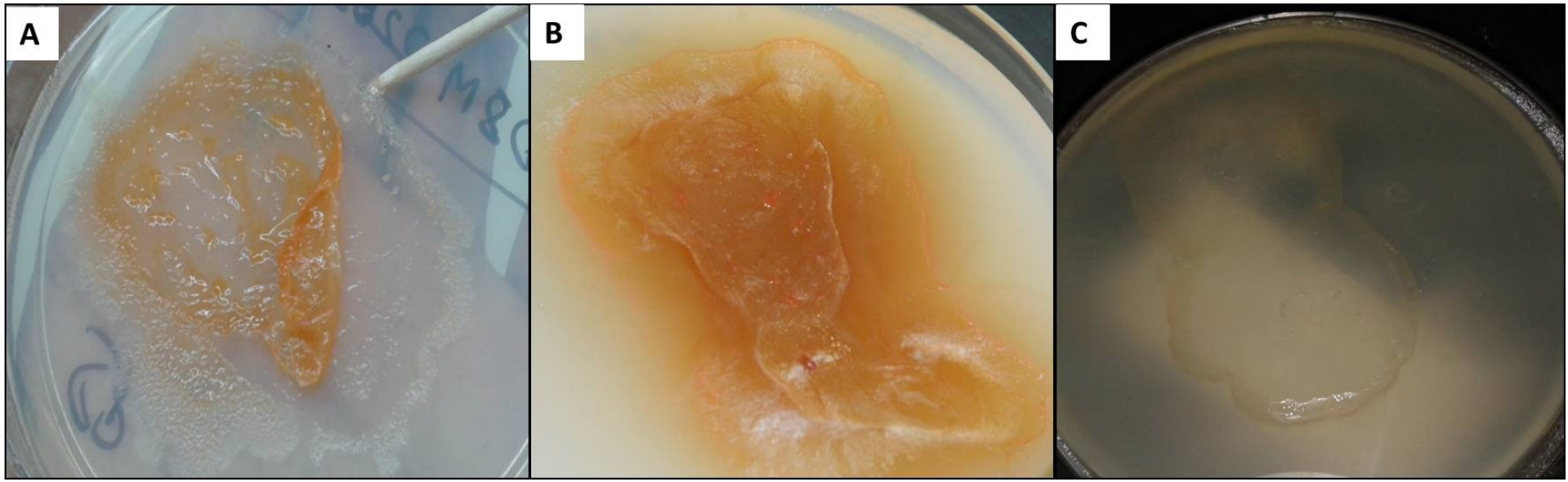
Figure S4: CheA protein based phylogeny for all Myxobacterial CheA homologs. The CheA protein-based phylogenetic tree is represented here along with respective CSS architecture (all CheA modules are portrayed here having equal lengths with color codes as shown in left bottom corner) and name next to each terminal branch in each clade. The non-Myxococcales δ-proteobacteria members are depicted here in blue fonts and other bacterial homologs are shown in green. Terminal clades having representations from same class or phylum are depicted as collapsed clades in bold fonts. The previously reported *M. xanthus* DK1622 CheA homologs are represented in dark pink font.

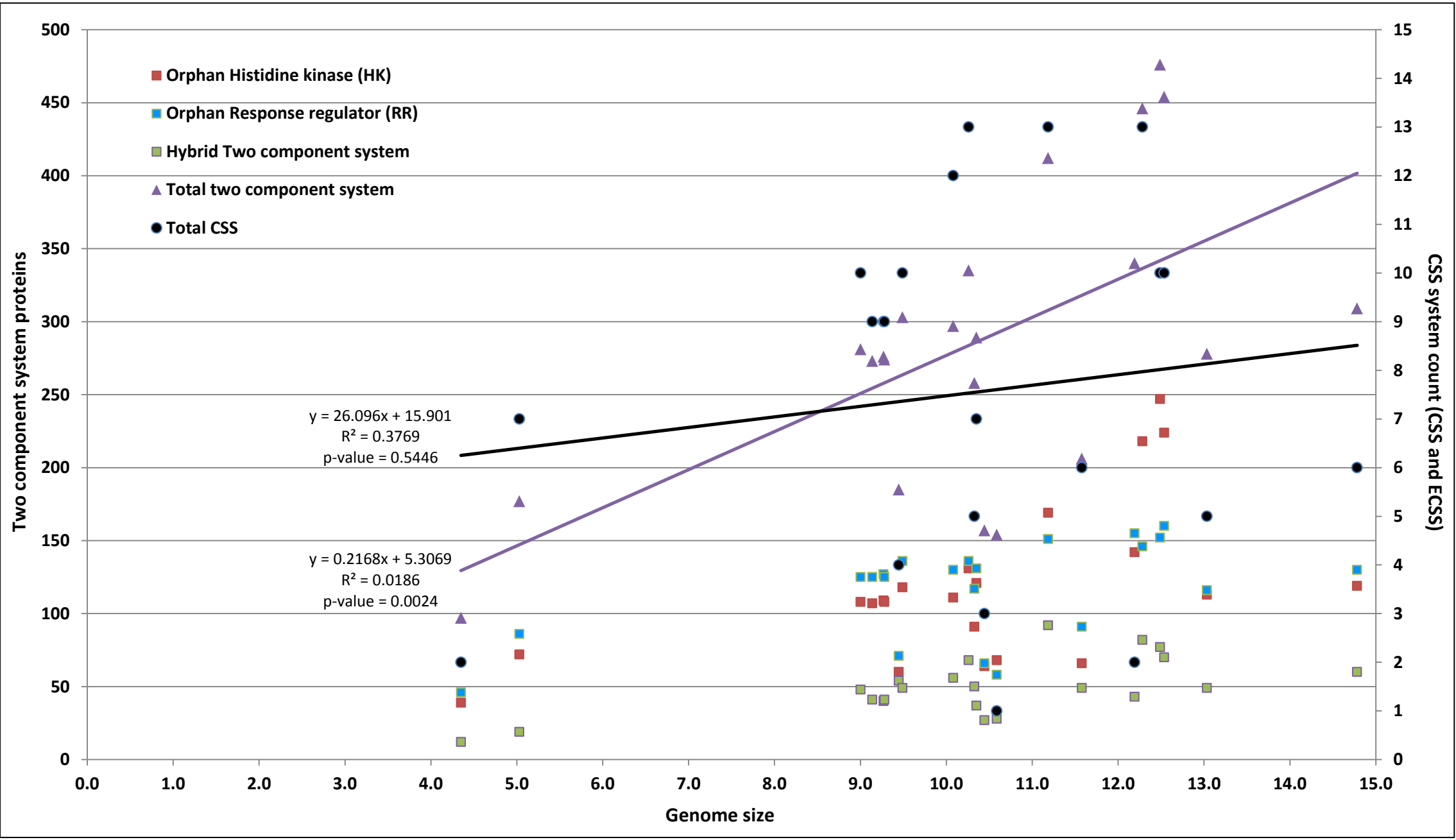
Figure S5: The modular architecture of Che1-Che8, ECSS1-ECSS6, ACSS1-ACSS4 and orphan CSS as identified in myxobacterial genomes.

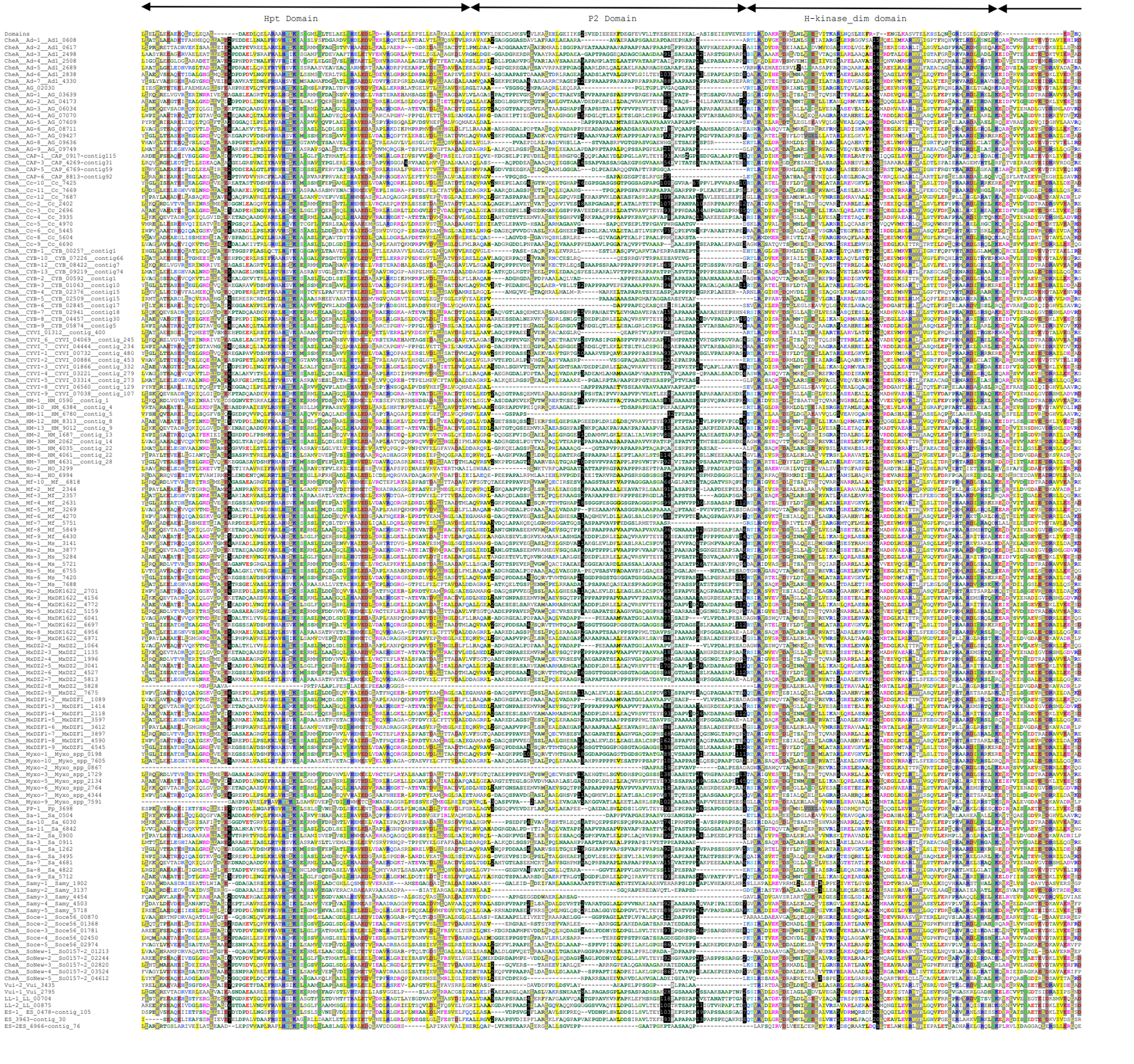
Figure S6: Synteny studies of chemosensory systems: A) Conserved proteins in vicinity of Che6 and Che7 systems within *Mx*, *Ms*, and *Ag*, B) conserved proteins in vicinity of Che8 system and C) conserved proteins in vicinity of the Che5 system

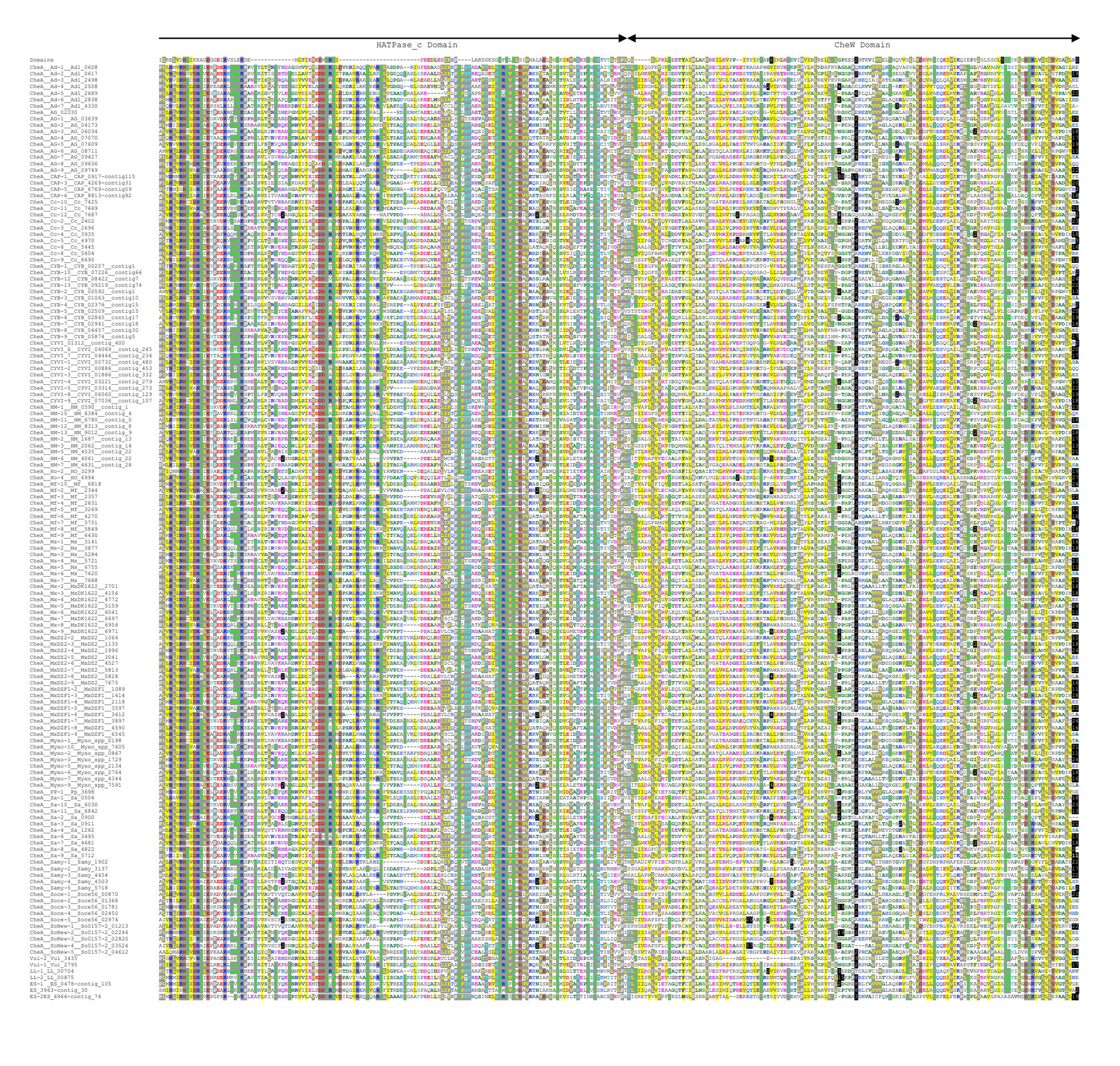
Figure S7: CheB protein based phylogeny for all CheB homologs in order Myxococcales genomes. The black dot represents the previously known CheB homolog in *M. xanthus* DK1622 CSS and name next to each terminal branch in each clade.

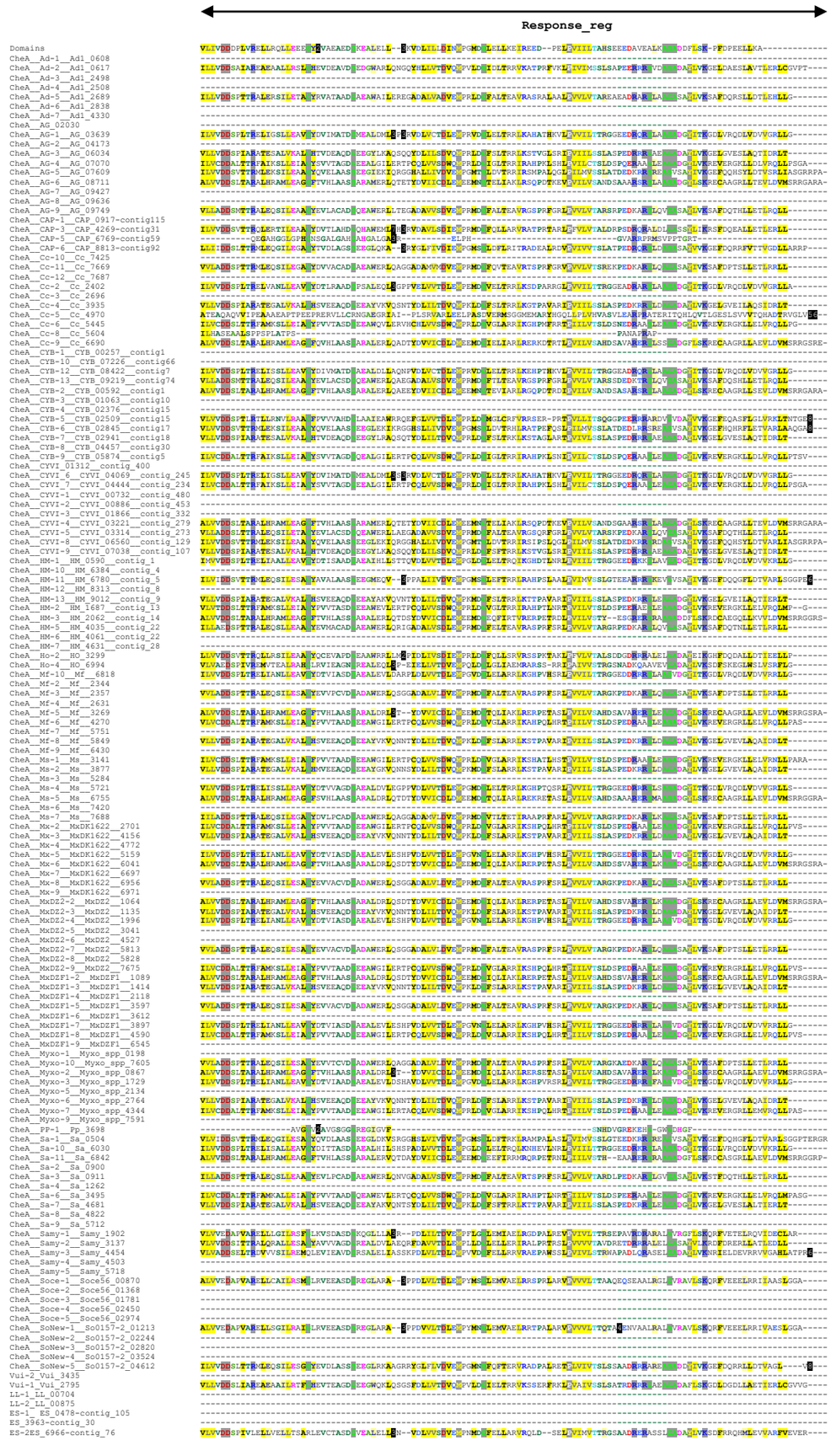
Supplementary data: Protein sequences of all identified CSS modules within myxobacterial genomes based on RAST annotations

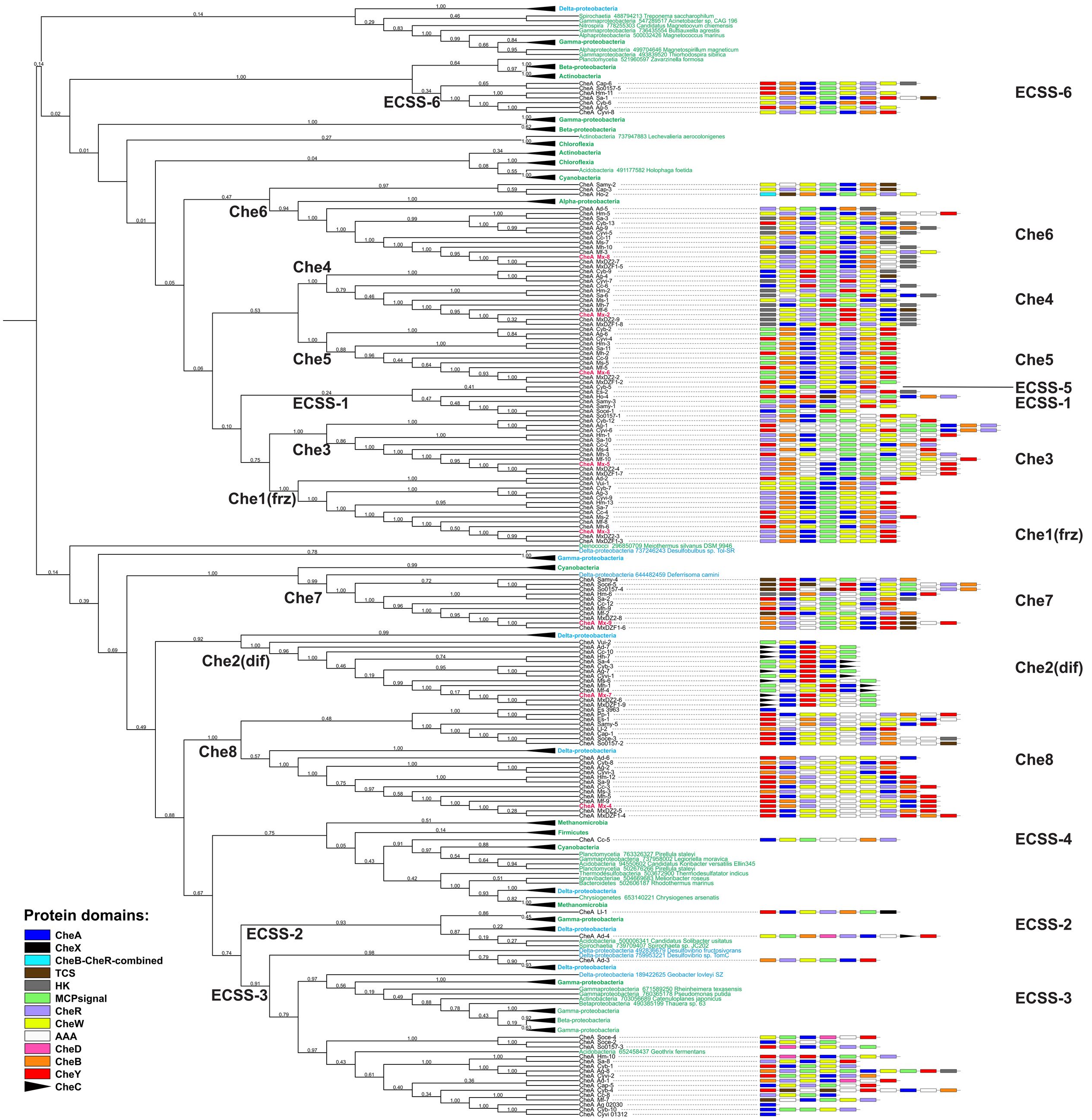

A
B
C

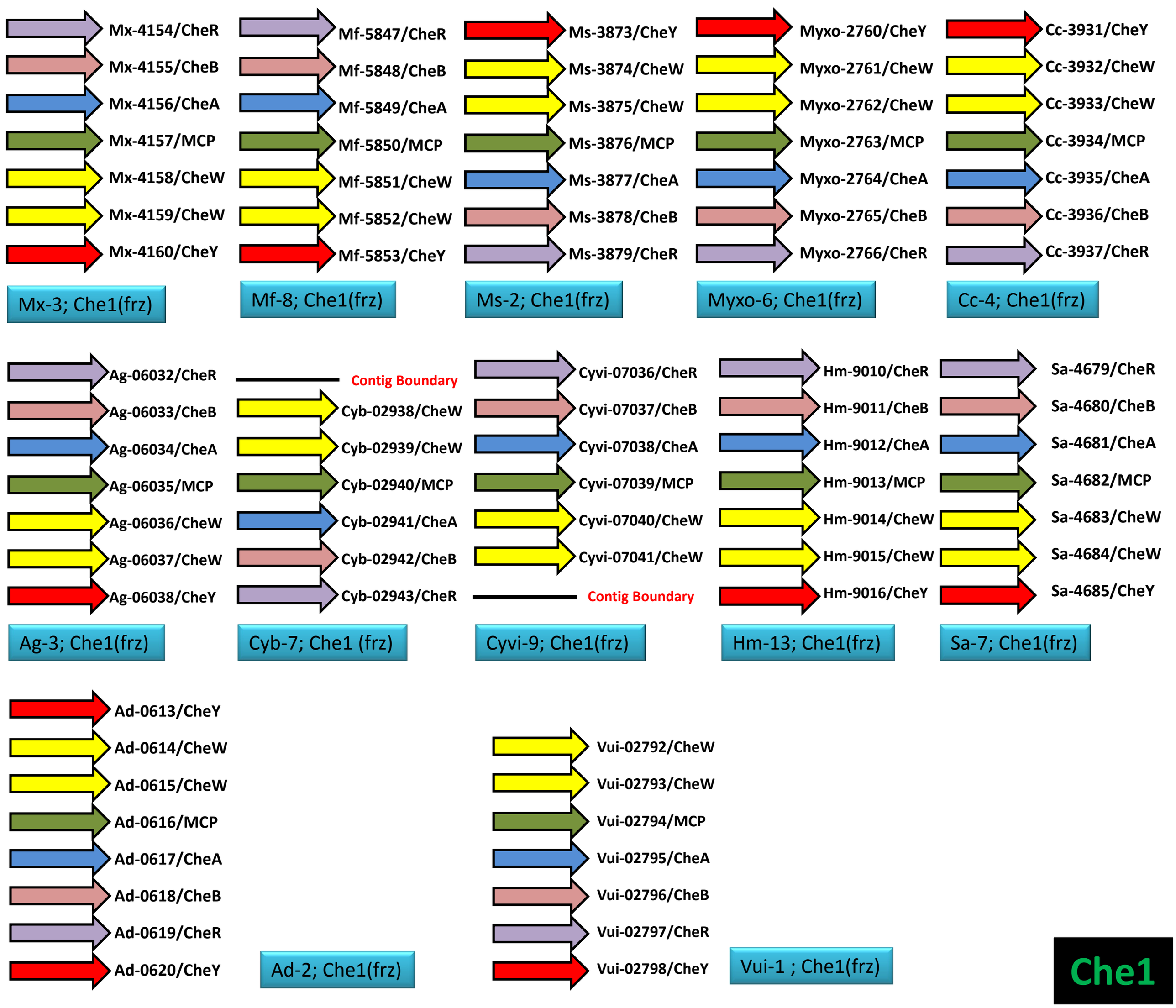

Orphan Histidine kinase (HK)
Orphan Response regulator (RR)
Hybrid Two component system
Total two component system
Total CSS
y = 26.096x + 15.901
R² = 0.3769
p-value = 0.5446
y = 0.2168x + 5.3069
R² = 0.0186
p-value = 0.0024
Two component system proteins
CSS system count (CSS and ECSS)
Genome size
0
50
100
150
200
250
300
350
400
450
500
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
13.0
14.0
15.0

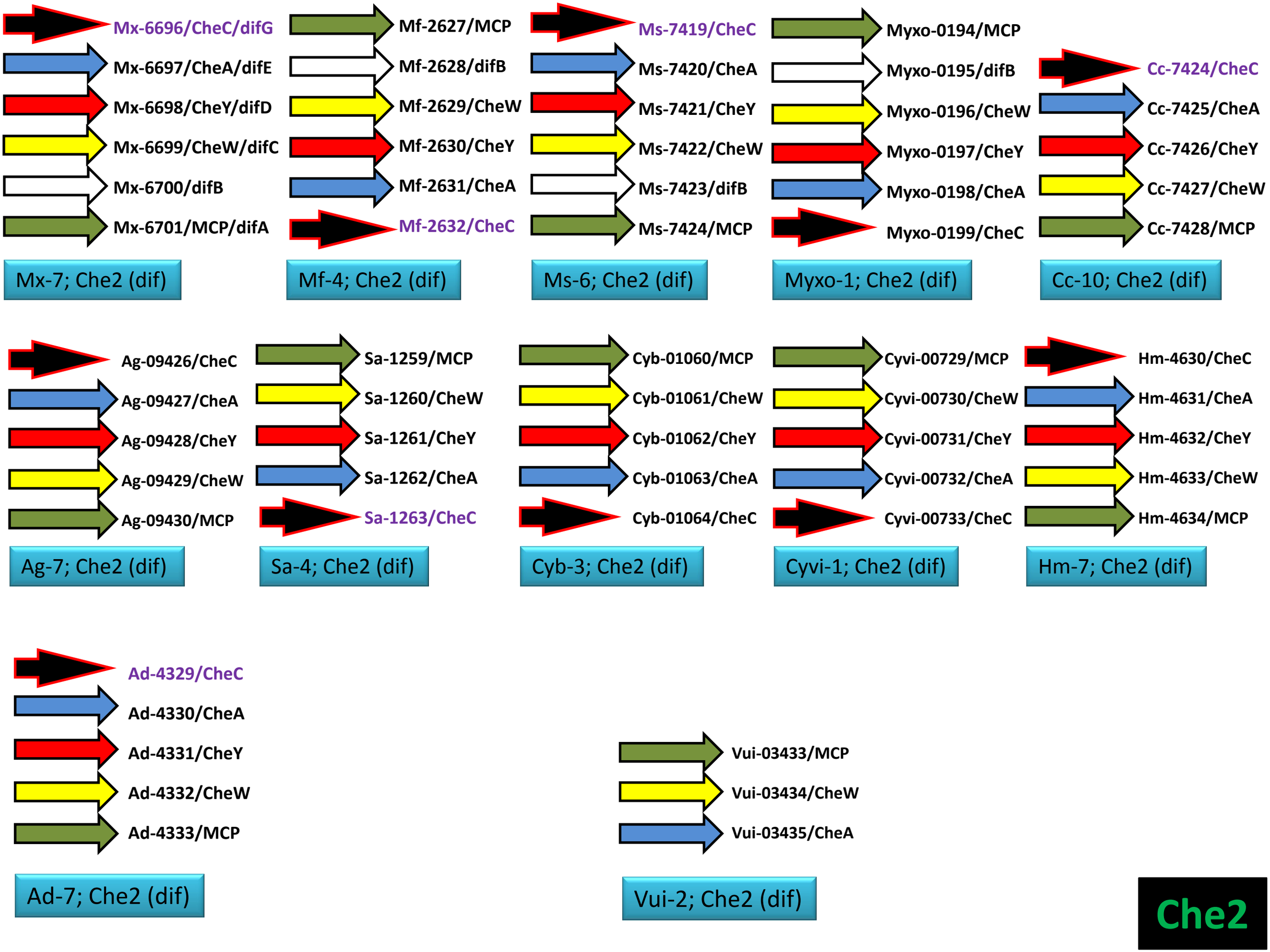

Hpt Domain
P2 Domain
H-kinase_dim domain
Domains
CheA_Ad-1_Ad1_0608
CheA_Ad-2_Ad1_0617
CheA_Ad-3_Ad1_2498
CheA_Ad-4_Ad1_2508
CheA_Ad-5_Ad1_2689
CheA_Ad-6_Ad1_2838
CheA_Ad-7_Ad1_4330
CheA_AG_02030
CheA_AG-1_AG_03639
CheA_AG-2_AG_04173
CheA_AG-3_AG_06034
CheA_AG-4_AG_07070
CheA_AG-5_AG_07609
CheA_AG-6_AG_08711
CheA_AG-7_AG_09427
CheA_AG-8_AG_09636
CheA_AG-9_AG_09749
CheA_CAP-1_CAP_0917-contig115
CheA_CAP-3_CAP_4269-contig31
CheA_CAP-5_CAP_6769-contig59
CheA_CAP-6_CAP_8813-contig92
CheA_Cc-10_Cc_7425
CheA_Cc-11_Cc_7669
CheA_Cc-12_Cc_7687
CheA_Cc-2_Cc_2402
CheA_Cc-3_Cc_2696
CheA_Cc-4_Cc_3935
CheA_Cc-5_Cc_4970
CheA_Cc-6_Cc_5445
CheA_Cc-8_Cc_5604
CheA_Cc-9_Cc_6690
CheA_CYB-1_CYB_00257_contig1
CheA_CYB-10_CYB_09226_contig66
CheA_CYB-12_CYB_08422_contig7
CheA_CYB-13_CYB_09219_contig74
CheA_CYB-2_CYB_00592_contig1
CheA_CYB-3_CYB_01063_contig10
CheA_CYB-4_CYB_02376_contig15
CheA_CYB-5_CYB_02509_contig15
CheA_CYB-6_CYB_02845_contig17
CheA_CYB-7_CYB_02941_contig18
CheA_CYB-8_CYB_04457_contig30
CheA_CYB-9_CYB_05874_contig5
CheA_CYVI_01312_contig_400
CheA_CYVI_6_CYVI_04069_contig_245
CheA_CYVI_7_CYVI_04444_contig_234
CheA_CYVI-1_CYVI_00732_contig_480
CheA_CYVI-2_CYVI_00886_contig_453
CheA_CYVI-3_CYVI_01866_contig_332
CheA_CYVI-4_CYVI_03221_contig_279
CheA_CYVI-5_CYVI_03314_contig_273
CheA_CYVI-8_CYVI_06560_contig_129
CheA_CYVI-9_CYVI_07038_contig_107
CheA_HM-1_HM_0590_contig_1
CheA_HM-10_HM_6384_contig_4
CheA_HM-11_HM_6780_contig_5
CheA_HM-12_HM_8313_contig_8
CheA_HM-13_HM_9012_contig_9
CheA_HM-2_HM_1667_contig_13
CheA_HM-3_HM_2062_contig_14
CheA_HM-5_HM_4035_contig_22
CheA_HM-6_HM_4061_contig_22
CheA_HM-7_HM_4631_contig_28
CheA_Ho-2_HO_3299
CheA_Ho-4_HO_6994
CheA_Mf-10_Mf_6818
CheA_Mf-2_Mf_2344
CheA_Mf-3_Mf_2357
CheA_Mf-4_Mf_2631
CheA_Mf-5_Mf_3269
CheA_Mf-6_Mf_4270
CheA_Mf-7_Mf_5751
CheA_Mf-8_Mf_5849
CheA_Mf-9_Mf_6687
CheA_Ms-1_Ms_3141
CheA_Ms-2_Ms_3877
CheA_Ms-3_Ms_5284
CheA_Ms-4_Ms_5721
CheA_Ms-5_Ms_6751
CheA_Ms-6_Ms_7420
CheA_Ms-7_Ms_7688
CheA_Mx-2_MxDK1622_2701
CheA_Mx-3_MxDK1622_4156
CheA_Mx-4_MxDK1622_4772
CheA_Mx-5_MxDK1622_5159
CheA_Mx-6_MxDK1622_6041
CheA_Mx-7_MxDK1622_6697
CheA_Mx-8_MxDK1622_6956
CheA_Mx-9_MxDK1622_7671
CheA_MxDZ2-2_MxDZ2_1064
CheA_MxDZ2-3_MxDZ2_1135
CheA_MxDZ2-4_MxDZ2_1996
CheA_MxDZ2-5_MxDZ2_3041
CheA_MxDZ2-6_MxDZ2_4527
CheA_MxDZ2-7_MxDZ2_5813
CheA_MxDZ2-8_MxDZ2_5828
CheA_MxDZ2-9_MxDZ2_7675
CheA_MxDZF1-2_MxDZF1_1089
CheA_MxDZF1-3_MxDZF1_1414
CheA_MxDZF1-4_MxDZF1_2118
CheA_MxDZF1-5_MxDZF1_3597
CheA_MxDZF1-6_MxDZF1_3612
CheA_MxDZF1-7_MxDZF1_3897
CheA_MxDZF1-8_MxDZF1_4590
CheA_MxDZF1-9_MxDZF1_6545
CheA_Myxo-1_Myxo_spp_0198
CheA_Myxo-10_Myxo_spp_7605
CheA_Myxo-2_Myxo_spp_0867
CheA_Myxo-3_Myxo_spp_1729
CheA_Myxo-5_Myxo_spp_2134
CheA_Myxo-6_Myxo_spp_2764
CheA_Myxo-7_Myxo_spp_4344
CheA_Myxo-9_Myxo_spp_7591
CheA_PP-1_Pp_3698
CheA_Sa-1_Sa_0504
CheA_Sa-10_Sa_6030
CheA_Sa-11_Sa_6842
CheA_Sa-2_Sa_0900
CheA_Sa-3_Sa_0911
CheA_Sa-4_Sa_1262
CheA_Sa-6_Sa_3495
CheA_Sa-7_Sa_4681
CheA_Sa-8_Sa_4822
CheA_Sa-9_Sa_5712
CheA_Sam-1_Samy_1902
CheA_Samy-2_Samy_3137
CheA_Samy-3_Samy_4454
CheA_Samy-4_Samy_4503
CheA_Samy-5_Samy_5718
CheA_Soce-1_Soce56_00870
CheA_Soce-2_Soce56_01368
CheA_Soce-3_Soce56_01781
CheA_Soce-4_Soce56_02450
CheA_Soce-5_Soce56_02974
CheA_SoNew-1_So0157-2_01213
CheA_SoNew-2_So0157-2_02244
CheA_SoNew-3_So0157-2_02820
CheA_SoNew-4_So0157-2_03524
CheA_SoNew-5_So0157-2_04612
Vui-2_Vui_3435
Vui-1_Vui_2795
LL-1_LL_00704
LL-2_LL_00875
ES-1_ES_0478-contig_105
ES_3963-contig_30
ES-2ES_6966-contig_76

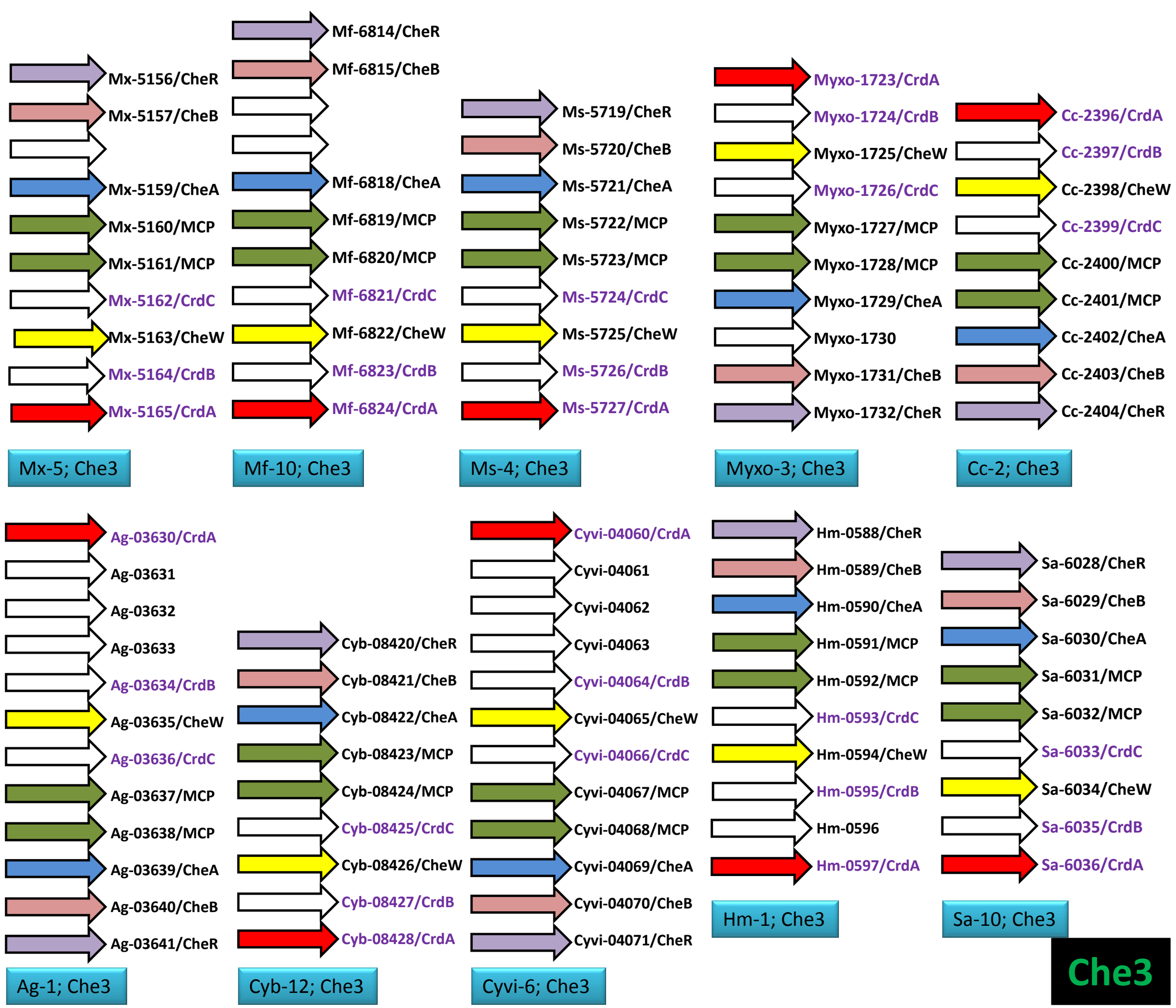

HATPase_c Domain
CheW Domain
Domains
ChеA_Ad-1__Ad1_0608
ChеA_Ad-2__Ad1_0617
ChеA_Ad-3__Ad1_2498
ChеA_Ad-4__Ad1_2508
ChеA_Ad-5__Ad1_2689
ChеA_Ad-6__Ad1_2838
ChеA_Ad-7__Ad1_4330
ChеA_AG_02030
ChеA_AG-1__AG_03639
ChеA_AG-2__AG_04173
ChеA_AG-3__AG_06034
ChеA_AG-4__AG_07070
ChеA_AG-5__AG_07609
ChеA_AG-6__AG_08011
ChеA_AG-7__AG_09427
ChеA_AG-8__AG_09636
ChеA_AG-9__AG_09749
ChеA_CAP-1__CAP_0917-contig115
ChеA_CAP-3__CAP_0269-contig31
ChеA_CAP-5__CAP_6769-contig59
ChеA_CAP-6__CAP_8813-contig92
ChеA_Cc-10__Cc_7425
ChеA_Cc-11__Cc_7669
ChеA_Cc-12__Cc_7687
ChеA_Cc-2__Cc_2402
ChеA_Cc-3__Cc_2696
ChеA_Cc-4__Cc_3935
ChеA_Cc-5__Cc_4970
ChеA_Cc-6__Cc_5445
ChеA_Cc-8__Cc_5604
ChеA_Cc-9__Cc_6690
ChеA_CYB-1__CYB_00257__contig1
ChеA_CYB-10__CYB_07226__contig66
ChеA_CYB-12__CYB_08422__contig7
ChеA_CYB-13__CYB_09219__contig74
ChеA_CYB-2__CYB_00592__contig1
ChеA_CYB-3__CYB_01063__contig10
ChеA_CYB-4__CYB_02376__contig15
ChеA_CYB-5__CYB_02509__contig15
ChеA_CYB-6__CYB_02845__contig17
ChеA_CYB-7__CYB_02941__contig18
ChеA_CYB-8__CYB_04457__contig30
ChеA_CYB-9__CYB_05874__contig5
ChеA_CYVI_01312__contig_400
ChеA_CYVI-6__CYVI_04069__contig_245
ChеA_CYVI_7__CYVI_04444__contig_234
ChеA_CYVI-1__CYVI_00732__contig_480
ChеA_CYVI-2__CYVI_00886__contig_453
ChеA_CYVI-3__CYVI_01866__contig_332
ChеA_CYVI-4__CYVI_03221__contig_279
ChеA_CYVI-5__CYVI_03314__contig_273
ChеA_CYVI-8__CYVI_06560__contig_129
ChеA_CYVI-9__CYVI_07038__contig_107
ChеA_HM-1__HM_0590__contig_1
ChеA_HM-10__HM_6384__contig_4
ChеA_HM-11__HM_6780__contig_5
ChеA_HM-12__HM_8313__contig_8
ChеA_HM-13__HM_9012__contig_9
ChеA_HM-2__HM_1687__contig_13
ChеA_HM-3__HM_2062__contig_16
ChеA_HM-5__HM_4035__contig_22
ChеA_HM-6__HM_4061__contig_22
ChеA_HM-7__HM_4631__contig_28
ChеA_Ho-2__HO_3299
ChеA_Ho-4__HO_6994
ChеA_Mf-10__Mf_6818
ChеA_Mf-2__Mf_2344
ChеA_Mf-3__Mf_2357
ChеA_Mf-4__Mf_2631
ChеA_Mf-5__Mf_3269
ChеA_Mf-6__Mf_4270
ChеA_Mf-7__Mf_5751
ChеA_Mf-8__Mf_5849
ChеA_Mf-9__Mf_6430
ChеA_Ms-1__Ms_3141
ChеA_Ms-2__Ms_3877
ChеA_Ms-3__Ms_5284
ChеA_Ms-4__Ms_5721
ChеA_Ms-5__Ms_6755
ChеA_Ms-7__Ms_7104
ChеA_Ms-8__Ms_7688
ChеA_Mx-2__MxDK1622__2701
ChеA_Mx-3__MxDK1622__4156
ChеA_Mx-4__MxDK1622__4772
ChеA_Mx-5__MxDK1622__5159
ChеA_Mx-6__MxDK1622__6041
ChеA_Mx-7__MxDK1622__6697
ChеA_Mx-8__MxDK1622__6956
ChеA_Mx-9__MxDK1622__6971
ChеA_MxDZ2-2__MxDZ2__1064
ChеA_MxDZ2-3__MxDZ2__1135
ChеA_MxDZ2-4__MxDZ2__1996
ChеA_MxDZ2-5__MxDZ2__3041
ChеA_MxDZ2-6__MxDZ2__4527
ChеA_MxDZ2-7__MxDZ2__5813
ChеA_MxDZ2-8__MxDZ2__5828
ChеA_MxDZ2-9__MxDZ2__7675
ChеA_MxDZF1-2__MxDZF1__1089
ChеA_MxDZF1-3__MxDZF1__1414
ChеA_MxDZF1-4__MxDZF1__2118
ChеA_MxDZF1-5__MxDZF1__3597
ChеA_MxDZF1-6__MxDZF1__3612
ChеA_MxDZF1-7__MxDZF1__3897
ChеA_MxDZF1-8__MxDZF1__4590
ChеA_MxDZF1-9__MxDZF1__6545
ChеA_Myxo-1__Myxo_spp_0198
ChеA_Myxo-10__Myxo_spp_7605
ChеA_Myxo-2__Myxo_spp_0867
ChеA_Myxo-3__Myxo_spp_1729
ChеA_Myxo-5__Myxo_spp_2134
ChеA_Myxo-6__Myxo_spp_2764
ChеA_Myxo-7__Myxo_spp_4344
ChеA_Myxo-9__Myxo_spp_7591
ChеA_PP-1__Pp_3698
ChеA_Sa-1__Sa_0504
ChеA_Sa-10__Sa_6030
ChеA_Sa-11__Sa_6842
ChеA_Sa-2__Sa_0900
ChеA_Sa-3__Sa_0911
ChеA_Sa-4__Sa_1262
ChеA_Sa-6__Sa_3495
ChеA_Sa-7__Sa_4681
ChеA_Sa-8__Sa_4822
ChеA_Sa-9__Sa_5712
ChеA_Samy-1__Samy_1902
ChеA_Samy-2__Samy_3137
ChеA_Samy-3__Samy_4454
ChеA_Samy-4__Samy_4503
ChеA_Samy-5__Samy_5718
ChеA_Soce-1__Soce56_00870
ChеA_Soce-2__Soce56_01368
ChеA_Soce-3__Soce56_01781
ChеA_Soce-4__Soce56_02450
ChеA_Soce-5__Soce56_02974
ChеA_SoNew-1__So0157-2_01213
ChеA_SoNew-2__So0157-2_02244
ChеA_SoNew-3__So0157-2_02820
ChеA_SoNew-4__So0157-2_03524
ChеA_SoNew-5__So0157-2_04612
Vui-2_Vui_3435
Vui-1_Vui_2795
LL-1_LL_00704
LL-2_LL_00875
ES-1__ES_0478-contig_105
ES_3963-contig_30
ES-2ES_6966-contig_76

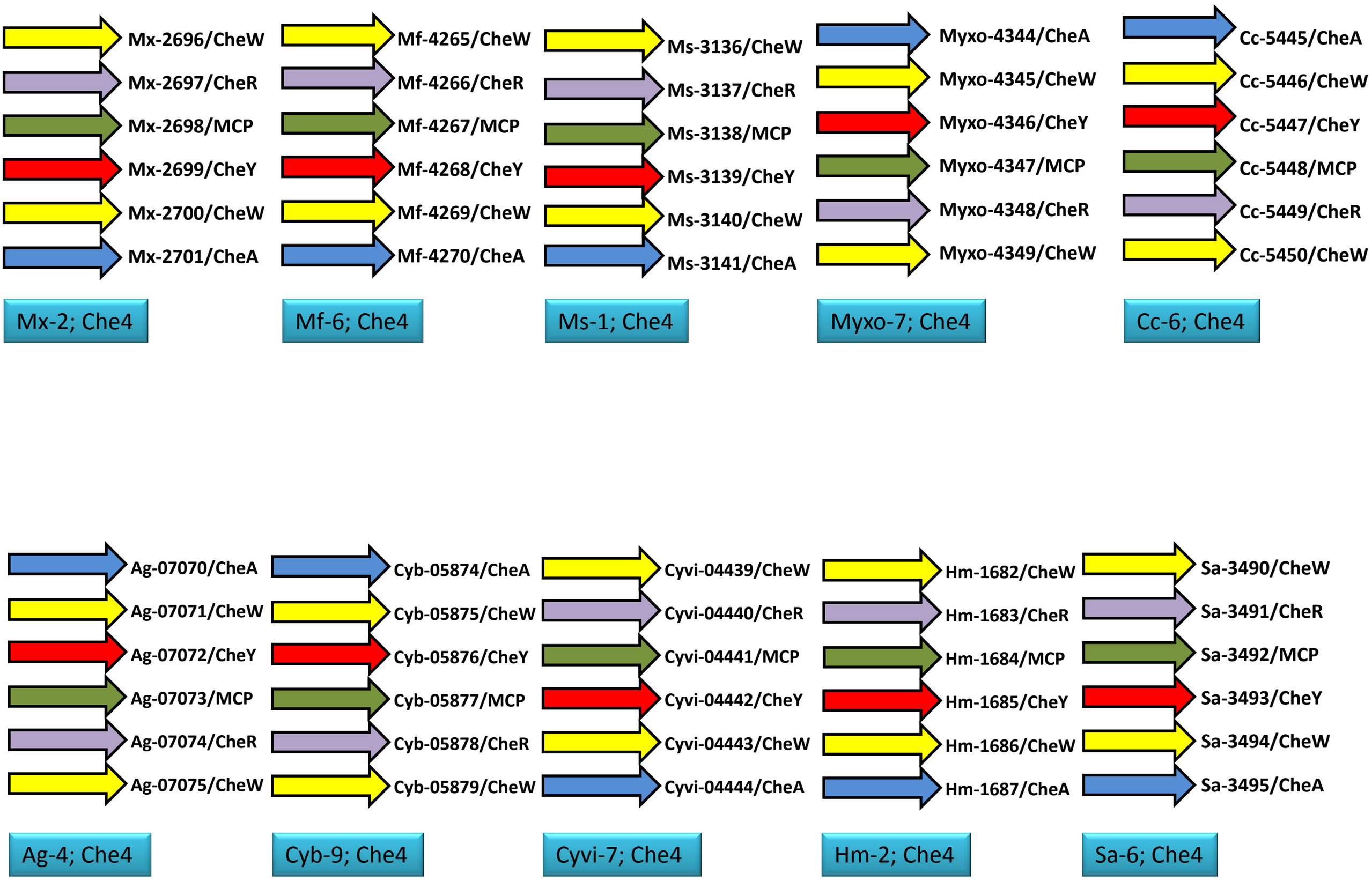

Response_reg
Domains
CheA__Ad-1__Ad1_0608
CheA__Ad-2__Ad1_0617
CheA__Ad-3__Ad1_2498
CheA__Ad-4__Ad1_2508
CheA__Ad-5__Ad1_2689
CheA__Ad-6__Ad1_2838
CheA__Ad-7__Ad1_4330
CheA__AG_02030
CheA__AG-1__AG_03639
CheA__AG-2__AG_04173
CheA__AG-3__AG_06034
CheA__AG-4__AG_07070
CheA__AG-5__AG_07609
CheA__AG-6__AG_08711
CheA__AG-7__AG_09427
CheA__AG-8__AG_09636
CheA__AG-9__AG_09749
CheA__CAP-1__CAP_0917-contig115
CheA__CAP-3__CAP_4269-contig31
CheA__CAP-5__CAP_6769-contig59
CheA__CAP-6__CAP_8813-contig92
CheA__Cc-10__Cc_7425
CheA__Cc-11__Cc_7669
CheA__Cc-12__Cc_7687
CheA__Cc-2__Cc_2402
CheA__Cc-3__Cc_2696
CheA__Cc-4__Cc_3935
CheA__Cc-5__Cc_4970
CheA__Cc-6__Cc_5445
CheA__Cc-8__Cc_5604
CheA__Cc-9__Cc_6690
CheA__CYB-1__CYB_00257__contig1
CheA__CYB-10__CYB_07226__contig66
CheA__CYB-12__CYB_08422__contig7
CheA__CYB-13__CYB_09219__contig74
CheA__CYB-2__CYB_00592__contig1
CheA__CYB-3__CYB_01063__contig10
CheA__CYB-4__CYB_02376__contig15
CheA__CYB-5__CYB_02509__contig15
CheA__CYB-6__CYB_02845__contig17
CheA__CYB-7__CYB_02941__contig18
CheA__CYB-8__CYB_04457__contig30
CheA__CYB-9__CYB_05874__contig5
CheA__CYVI_01312__contig_400
CheA__CYVI_6__CYVI_04069__contig_245
CheA__CYVI_7__CYVI_04444__contig_234
CheA__CYVI-1__CYVI_00732__contig_480
CheA__CYVI-2__CYVI_00886__contig_453
CheA__CYVI-3__CYVI_01866__contig_332
CheA__CYVI-4__CYVI_03221__contig_279
CheA__CYVI-5__CYVI_03314__contig_273
CheA__CYVI-8__CYVI_06560__contig_129
CheA__CYVI-9__CYVI_07038__contig_107
CheA__HM-1__HM_0590__contig_1
CheA__HM-10__HM_6384__contig_4
CheA__HM-11__HM_6780__contig_5
CheA__HM-12__HM_8313__contig_8
CheA__HM-13__HM_9012__contig_9
CheA__HM-2__HM_1687__contig_13
CheA__HM-3__HM_2062__contig_14
CheA__HM-5__HM_4035__contig_22
CheA__HM-6__HM_4061__contig_22
CheA__HM-7__HM_4631__contig_28
CheA__Ho-2__HO_3299
CheA__Ho-4__HO_6994
CheA__Mf-10__Mf__6818
CheA__Mf-2__Mf__2344
CheA__Mf-3__Mf__2357
CheA__Mf-4__Mf__2631
CheA__Mf-5__Mf__3269
CheA__Mf-6__Mf__4270
CheA__Mf-7__Mf__5751
CheA__Mf-8__Mf__5849
CheA__Mf-9__Mf__6430
CheA__Ms-1__Ms__3141
CheA__Ms-2__Ms__3877
CheA__Ms-3__Ms__5284
CheA__Ms-4__Ms__5721
CheA__Ms-5__Ms__6755
CheA__Ms-6__Ms__7420
CheA__Ms-7__Ms__7688
CheA__Mx-2__MxDK1622__2701
CheA__Mx-3__MxDK1622__4156
CheA__Mx-4__MxDK1622__4772
CheA__Mx-5__MxDK1622__5159
CheA__Mx-6__MxDK1622__6041
CheA__Mx-7__MxDK1622__6697
CheA__Mx-8__MxDK1622__6956
CheA__Mx-9__MxDK1622__6971
CheA__MxDZ2-2__MxDZ2__1064
CheA__MxDZ2-3__MxDZ2__1135
CheA__MxDZ2-4__MxDZ2__1996
CheA__MxDZ2-5__MxDZ2__3041
CheA__MxDZ2-6__MxDZ2__4527
CheA__MxDZ2-7__MxDZ2__5813
CheA__MxDZ2-8__MxDZ2__5828
CheA__MxDZ2-9__MxDZ2__7675
CheA__MxDZF1-2__MxDZF1__1089
CheA__MxDZF1-3__MxDZF1__1414
CheA__MxDZF1-4__MxDZF1__2118
CheA__MxDZF1-5__MxDZF1__3597
CheA__MxDZF1-6__MxDZF1__3612
CheA__MxDZF1-7__MxDZF1__3897
CheA__MxDZF1-8__MxDZF1__4590
CheA__MxDZF1-9__MxDZF1__6545
CheA__Myxo-1__Myxo_spp_0198
CheA__Myxo-10__Myxo_spp_7605
CheA__Myxo-2__Myxo_spp_0867
CheA__Myxo-3__Myxo_spp_1729
CheA__Myxo-5__Myxo_spp_2134
CheA__Myxo-6__Myxo_spp_2764
CheA__Myxo-7__Myxo_spp_4344
CheA__Myxo-9__Myxo_spp_7591
CheA__PP-1__Pp_3698
CheA__Sa-1__Sa_0504
CheA__Sa-10__Sa_6030
CheA__Sa-11__Sa_6842
CheA__Sa-2__Sa_0900
CheA__Sa-3__Sa_0911
CheA__Sa-4__Sa_1262
CheA__Sa-6__Sa_3495
CheA__Sa-7__Sa_4681
CheA__Sa-8__Sa_4822
CheA__Sa-9__Sa_5712
CheA__Samy-1__Samy_1902
CheA__Samy-2__Samy_3137
CheA__Samy-3__Samy_4454
CheA__Samy-4__Samy_4503
CheA__Samy-5__Samy_5718
CheA__Soce-1__Soce56_00870
CheA__Soce-2__Soce56_01368
CheA__Soce-3__Soce56_01781
CheA__Soce-4__Soce56_02450
CheA__Soce-5__Soce56_02974
CheA__SoNew-1__So0157-2_01213
CheA__SoNew-2__So0157-2_02244
CheA__SoNew-3__So0157-2_02820
CheA__SoNew-4__So0157-2_03524
CheA__SoNew-5__So0157-2_04612
Vui-2_Vui_3435
Vui-1_Vui_2795
LL-1_LL_00704
LL-2_LL_00875
ES-1__ES_0478-contig_105
ES_3963-contig_30
ES-2ES_6966-contig_76


Delta-proteobacteria
Spirochaetia 488794213 Treponema saccharophilum
Gammaproteobacteria 547289517 Acinetobacter sp. CAG 196
Nitrospira 778255303 Candidatus Magnetoovum chiemensis
Gammaproteobacteria 736435554 Buttiauxella agrestis
Alphaproteobacteria 500032426 Magnetococcus marinus
Gamma-proteobacteria
Alphaproteobacteria 499704646 Magnetospirillum magneticum
Gammaproteobacteria 493839520 Thiorhodospira sibirica
Planctomycetia 521960597 Zavarzinella formosa
Beta-proteobacteria
Actinobacteria
ECSS-6
CheA Cap-6
CheA So0157-5
CheA Hm-11
CheA Sa-1
CheA Cyb-6
CheA Ag-5
CheA Cyvi-8
Gamma-proteobacteria
Beta-proteobacteria
Actinobacteria 737947883 Lechevalieria aerocolonigenes
Chloroflexia
Actinobacteria
Chloroflexia
Acidobacteria 491177582 Holophaga foetida
Cyanobacteria
CheA Samy-2
CheA Cap-3
CheA Ho-2
Alpha-proteobacteria
Che6
CheA Ad-5
CheA Hm-5
CheA Sa-3
CheA Cyb-13
CheA Ag-9
CheA Cyvi-5
CheA Cc-11
CheA Ms-7
CheA Mh-10
CheA Mf-3
CheA Mx-8
CheA MxDZ2-7
CheA MxDZF1-5
Che4
CheA Cyb-9
CheA Ag-4
CheA Cyvi-7
CheA Cc-6
CheA Hm-2
CheA Sa-6
CheA Ms-1
CheA Mh-7
CheA Mf-6
CheA Mx-2
CheA MxDZ2-9
CheA MxDZF1-8
Che5
CheA Cyb-2
CheA Ag-6
CheA Cyvi-4
CheA Hm-3
CheA Sa-11
CheA Mh-2
CheA Cc-9
CheA Ms-5
CheA Mf-5
CheA Mx-6
CheA MxDZ2-2
CheA MxDZF1-2
ECSS-1
CheA Cyb-5
CheA Es-2
CheA Ho-4
CheA Samy-3
CheA Samy-1
CheA Soce-1
CheA So0157-1
CheA Cyb-12
CheA Ag-1
CheA Cyvi-6
CheA Hm-1
CheA Sa-10
Che3
CheA Cc-2
CheA Ms-4
CheA Mh-3
CheA Mf-10
CheA Mx-5
CheA MxDZ2-4
CheA MxDZF1-7
CheA Ad-2
CheA Vui-1
CheA Cyb-7
CheA Ag-3
CheA Cyvi-9
Che1(frz)
CheA Hm-13
CheA Sa-7
CheA Cc-4
CheA Ms-2
CheA Mf-8
CheA Mh-6
CheA Mx-3
CheA MxDZ2-3
CheA MxDZF1-3
Deinococci 296850709 Meiothermus silvanus DSM 9946
Delta-proteobacteria 737246243 Desulfobulbus sp. Tol-SR
Gamma-proteobacteria
Cyanobacteria
Delta-proteobacteria 644482459 Deferrisoma camini
CheA Samy-4
CheA Soce-5
CheA So0157-4
CheA Hm-6
CheA Sa-2
CheA Cc-12
CheA Mh-9
CheA Mf-2
CheA MxDZ2-8
CheA Mx-9
CheA MxDZF1-6
Che7
Delta-proteobacteria
CheA Vui-2
CheA Ad-7
CheA Cc-10
CheA Hh-7
CheA Sa-4
CheA Cyb-3
CheA Ag-7
CheA Cyvi-1
CheA Ms-6
CheA Mh-1
CheA Mf-4
CheA Mx-7
CheA MxDZ2-6
CheA MxDZF1-9
Che2(dif)
CheA Es 3963
CheA Pp-1
CheA Es-1
CheA Samy-5
CheA Ll-2
CheA Cap-1
CheA Soce-3
CheA So0157-2
Delta-proteobacteria
CheA Ad-6
CheA Cyb-8
CheA Ag-2
CheA Cyvi-3
CheA Hm-12
CheA Sa-9
CheA Cc-3
CheA Ms-3
CheA Mh-5
CheA Mf-9
CheA Mx-4
CheA MxDZ2-5
CheA MxDZF1-4
Che8
Methanomicrobia
Firmicutes
CheA Cc-5
Cyanobacteria
Planctomycetia 763326327 Pirellula staleyi
Gammaproteobacteria 737958002 Legionella moravica
Acidobacteria 945500602 Candidatus Koribacter versatilis Ellin345
Planctomycetia 502676266 Pirellula staleyi
Thermodesulfobacteria 503672900 Thermodesulfatator indicus
Ignavibacteriae 504669683 Melioribacter roseus
Bacteroidetes 502606187 Rhodothermus marinus
Delta-proteobacteria
Chrysiogenetes 653140221 Chrysiogenes arsenatis
Methanomicrobia
CheA Ll-1
Gamma-proteobacteria
Delta-proteobacteria
ECSS-2
CheA Ad-4
Acidobacteria 500006341 Candidatus Solibacter usitatus
Spirochaetia 739709407 Spirochaeta sp. JC202
Delta-proteobacteria 492836679 Desulfovibrio fructosivorans
Delta-proteobacteria 759953221 Desulfovibrio sp. TomC
CheA Ad-3
Delta-proteobacteria
Delta-proteobacteria 189422625 Geobacter lovleyi SZ
Gamma-proteobacteria
Gammaproteobacteria 671589250 Rheinheimera texasensis
Gammaproteobacteria 760365178 Pseudomonas putida
Actinobacteria 703056689 Catenuloplanes japonicus
Betaproteobacteria 490385199 Thauera sp. 63
ECSS-3
Gamma-proteobacteria
Beta-proteobacteria
Gamma-proteobacteria
CheA Soce-4
CheA Soce-2
CheA So0157-3
Acidobacteria 652458437 Geothrix fermentans
CheA Hm-10
CheA Sa-8
CheA Cyb-1
CheA Ag-8
CheA Cyvi-2
CheA Ad-1
CheA Cap-5
CheA Cyb-4
CheA Cc-8
CheA Mf-7
CheA Ag 02030
CheA Cyb-10
CheA Cyvi 01312
Protein domains:
CheA
CheX
CheB-CheR-combined
TCS
HK
MCPsignal
CheR
CheW
AAA
CheD
CheB
CheY
CheC

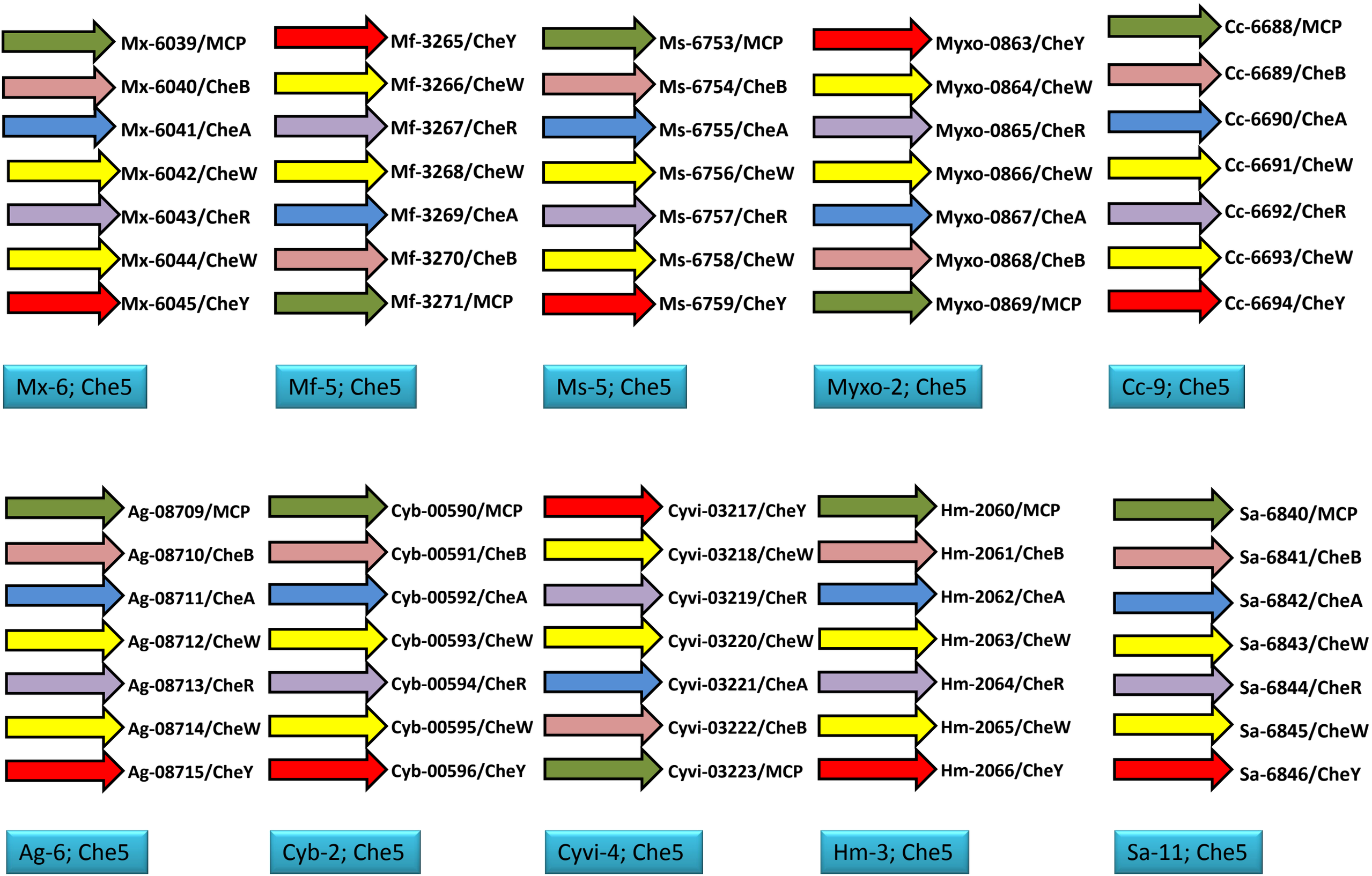

Mx-4154/CheR
Mx-4155/CheB
Mx-4156/CheA
Mx-4157/MCP
Mx-4158/CheW
Mx-4159/CheW
Mx-4160/CheY
Mx-3; Che1(frz)
Mf-5847/CheR
Mf-5848/CheB
Mf-5849/CheA
Mf-5850/MCP
Mf-5851/CheW
Mf-5852/CheW
Mf-5853/CheY
Mf-8; Che1(frz)
Ms-3873/CheY
Ms-3874/CheW
Ms-3875/CheW
Ms-3876/MCP
Ms-3877/CheA
Ms-3878/CheB
Ms-3879/CheR
Ms-2; Che1(frz)
Myxo-2760/CheY
Myxo-2761/CheW
Myxo-2762/CheW
Myxo-2763/MCP
Myxo-2764/CheA
Myxo-2765/CheB
Myxo-2766/CheR
Myxo-6; Che1(frz)
Cc-3931/CheY
Cc-3932/CheW
Cc-3933/CheW
Cc-3934/MCP
Cc-3935/CheA
Cc-3936/CheB
Cc-3937/CheR
Cc-4; Che1(frz)
Ag-06032/CheR
Ag-06033/CheB
Ag-06034/CheA
Ag-06035/MCP
Ag-06036/CheW
Ag-06037/CheW
Ag-06038/CheY
Ag-3; Che1(frz)
Contig Boundary
Cyb-02938/CheW
Cyb-02939/CheW
Cyb-02940/MCP
Cyb-02941/CheA
Cyb-02942/CheB
Cyb-02943/CheR
Cyb-7; Che1 (frz)
Cyvi-07036/CheR
Cyvi-07037/CheB
Cyvi-07038/CheA
Cyvi-07039/MCP
Cyvi-07040/CheW
Cyvi-07041/CheW
Contig Boundary
Cyvi-9; Che1(frz)
Hm-9010/CheR
Hm-9011/CheB
Hm-9012/CheA
Hm-9013/MCP
Hm-9014/CheW
Hm-9015/CheW
Hm-9016/CheY
Hm-13; Che1(frz)
Sa-4679/CheR
Sa-4680/CheB
Sa-4681/CheA
Sa-4682/MCP
Sa-4683/CheW
Sa-4684/CheW
Sa-4685/CheY
Sa-7; Che1(frz)
Ad-0613/CheY
Ad-0614/CheW
Ad-0615/CheW
Ad-0616/MCP
Ad-0617/CheA
Ad-0618/CheB
Ad-0619/CheR
Ad-0620/CheY
Ad-2; Che1(frz)
Vui-02792/CheW
Vui-02793/CheW
Vui-02794/MCP
Vui-02795/CheA
Vui-02796/CheB
Vui-02797/CheR
Vui-02798/CheY
Vui-1 ; Che1(frz)
Che1


Mx-6696/CheC/difG
Mx-6697/CheA/difE
Mx-6698/CheY/difD
Mx-6699/CheW/difC
Mx-6700/difB
Mx-6701/MCP/difA
Mx-7; Che2 (dif)
Mf-2627/MCP
Mf-2628/difB
Mf-2629/CheW
Mf-2630/CheY
Mf-2631/CheA
Mf-2632/CheC
Mf-4; Che2 (dif)
Ms-7419/CheC
Ms-7420/CheA
Ms-7421/CheY
Ms-7422/CheW
Ms-7423/difB
Ms-7424/MCP
Ms-6; Che2 (dif)
Myxo-0194/MCP
Myxo-0195/difB
Myxo-0196/CheW
Myxo-0197/CheY
Myxo-0198/CheA
Myxo-0199/CheC
Myxo-1; Che2 (dif)
Cc-7424/CheC
Cc-7425/CheA
Cc-7426/CheY
Cc-7427/CheW
Cc-7428/MCP
Cc-10; Che2 (dif)
Ag-09426/CheC
Ag-09427/CheA
Ag-09428/CheY
Ag-09429/CheW
Ag-09430/MCP
Ag-7; Che2 (dif)
Sa-1259/MCP
Sa-1260/CheW
Sa-1261/CheY
Sa-1262/CheA
Sa-1263/CheC
Sa-4; Che2 (dif)
Cyb-01060/MCP
Cyb-01061/CheW
Cyb-01062/CheY
Cyb-01063/CheA
Cyb-01064/CheC
Cyb-3; Che2 (dif)
Cyvi-00729/MCP
Cyvi-00730/CheW
Cyvi-00731/CheY
Cyvi-00732/CheA
Cyvi-00733/CheC
Cyvi-1; Che2 (dif)
Hm-4630/CheC
Hm-4631/CheA
Hm-4632/CheY
Hm-4633/CheW
Hm-4634/MCP
Hm-7; Che2 (dif)
Ad-4329/CheC
Ad-4330/CheA
Ad-4331/CheY
Ad-4332/CheW
Ad-4333/MCP
Ad-7; Che2 (dif)
Vui-03433/MCP
Vui-03434/CheW
Vui-03435/CheA
Vui-2; Che2 (dif)
Che2

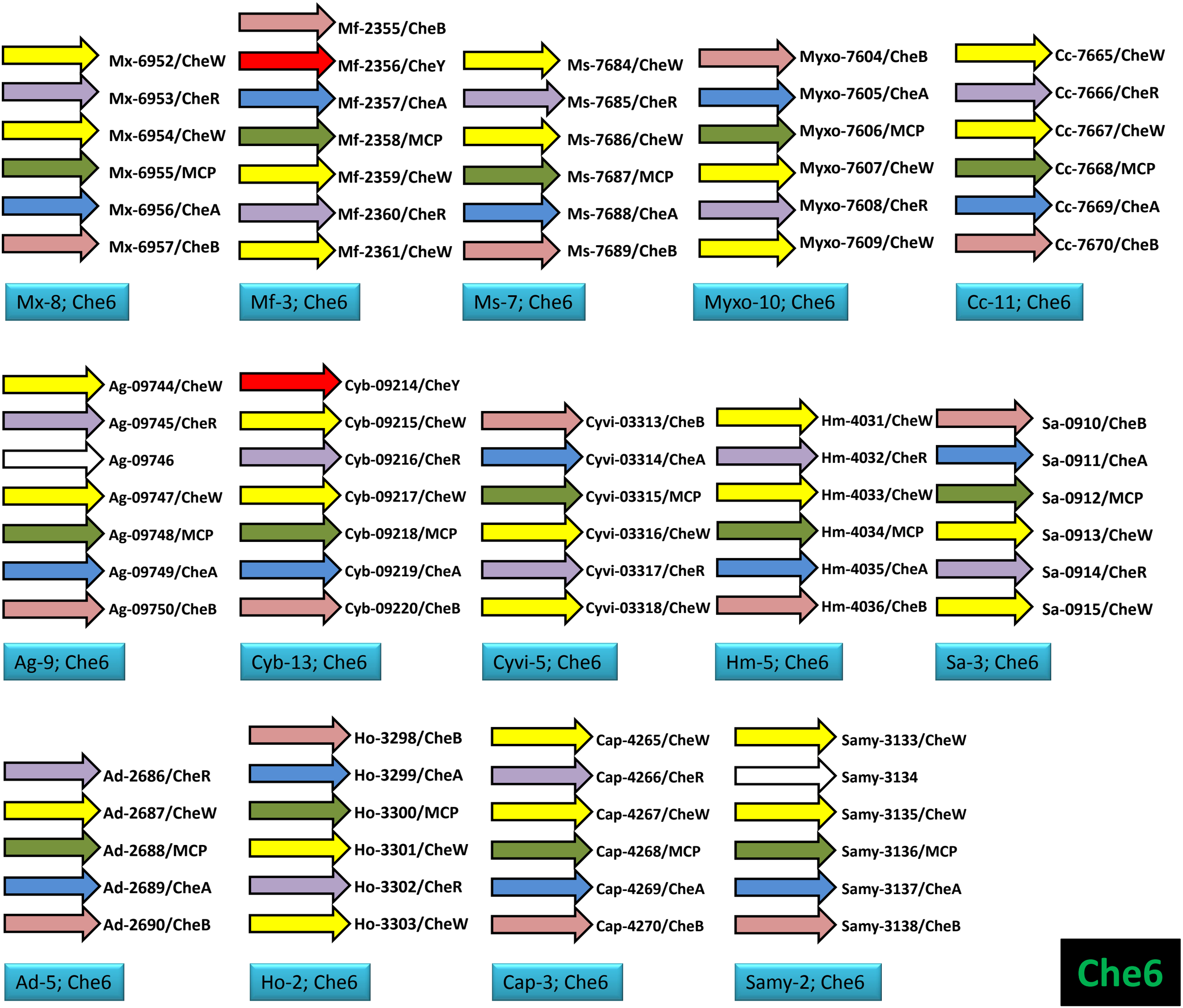

Mx-5156/CheR
Mx-5157/CheB
Mx-5159/CheA
Mx-5160/MCP
Mx-5161/MCP
Mx-5162/CrdC
Mx-5163/CheW
Mx-5164/CrdB
Mx-5165/CrdA
Mx-5; Che3
Mf-6814/CheR
Mf-6815/CheB
Mf-6818/CheA
Mf-6819/MCP
Mf-6820/MCP
Mf-6821/CrdC
Mf-6822/CheW
Mf-6823/CrdB
Mf-6824/CrdA
Mf-10; Che3
Ms-5719/CheR
Ms-5720/CheB
Ms-5721/CheA
Ms-5722/MCP
Ms-5723/MCP
Ms-5724/CrdC
Ms-5725/CheW
Ms-5726/CrdB
Ms-5727/CrdA
Ms-4; Che3
Myxo-1723/CrdA
Myxo-1724/CrdB
Myxo-1725/CheW
Myxo-1726/CrdC
Myxo-1727/MCP
Myxo-1728/MCP
Myxo-1729/CheA
Myxo-1730
Myxo-1731/CheB
Myxo-1732/CheR
Myxo-3; Che3
Cc-2396/CrdA
Cc-2397/CrdB
Cc-2398/CheW
Cc-2399/CrdC
Cc-2400/MCP
Cc-2401/MCP
Cc-2402/CheA
Cc-2403/CheB
Cc-2404/CheR
Cc-2; Che3
Ag-03630/CrdA
Ag-03631
Ag-03632
Ag-03633
Ag-03634/CrdB
Ag-03635/CheW
Ag-03636/CrdC
Ag-03637/MCP
Ag-03638/MCP
Ag-03639/CheA
Ag-03640/CheB
Ag-03641/CheR
Ag-1; Che3
Cyb-08420/CheR
Cyb-08421/CheB
Cyb-08422/CheA
Cyb-08423/MCP
Cyb-08424/MCP
Cyb-08425/CrdC
Cyb-08426/CheW
Cyb-08427/CrdB
Cyb-08428/CrdA
Cyb-12; Che3
Cyvi-04060/CrdA
Cyvi-04061
Cyvi-04062
Cyvi-04063
Cyvi-04064/CrdB
Cyvi-04065/CheW
Cyvi-04066/CrdC
Cyvi-04067/MCP
Cyvi-04068/MCP
Cyvi-04069/CheA
Cyvi-04070/CheB
Cyvi-04071/CheR
Cyvi-6; Che3
Hm-0588/CheR
Hm-0589/CheB
Hm-0590/CheA
Hm-0591/MCP
Hm-0592/MCP
Hm-0593/CrdC
Hm-0594/CheW
Hm-0595/CrdB
Hm-0596
Hm-0597/CrdA
Hm-1; Che3
Sa-6028/CheR
Sa-6029/CheB
Sa-6030/CheA
Sa-6031/MCP
Sa-6032/MCP
Sa-6033/CrdC
Sa-6034/CheW
Sa-6035/CrdB
Sa-6036/CrdA
Sa-10; Che3
Che3

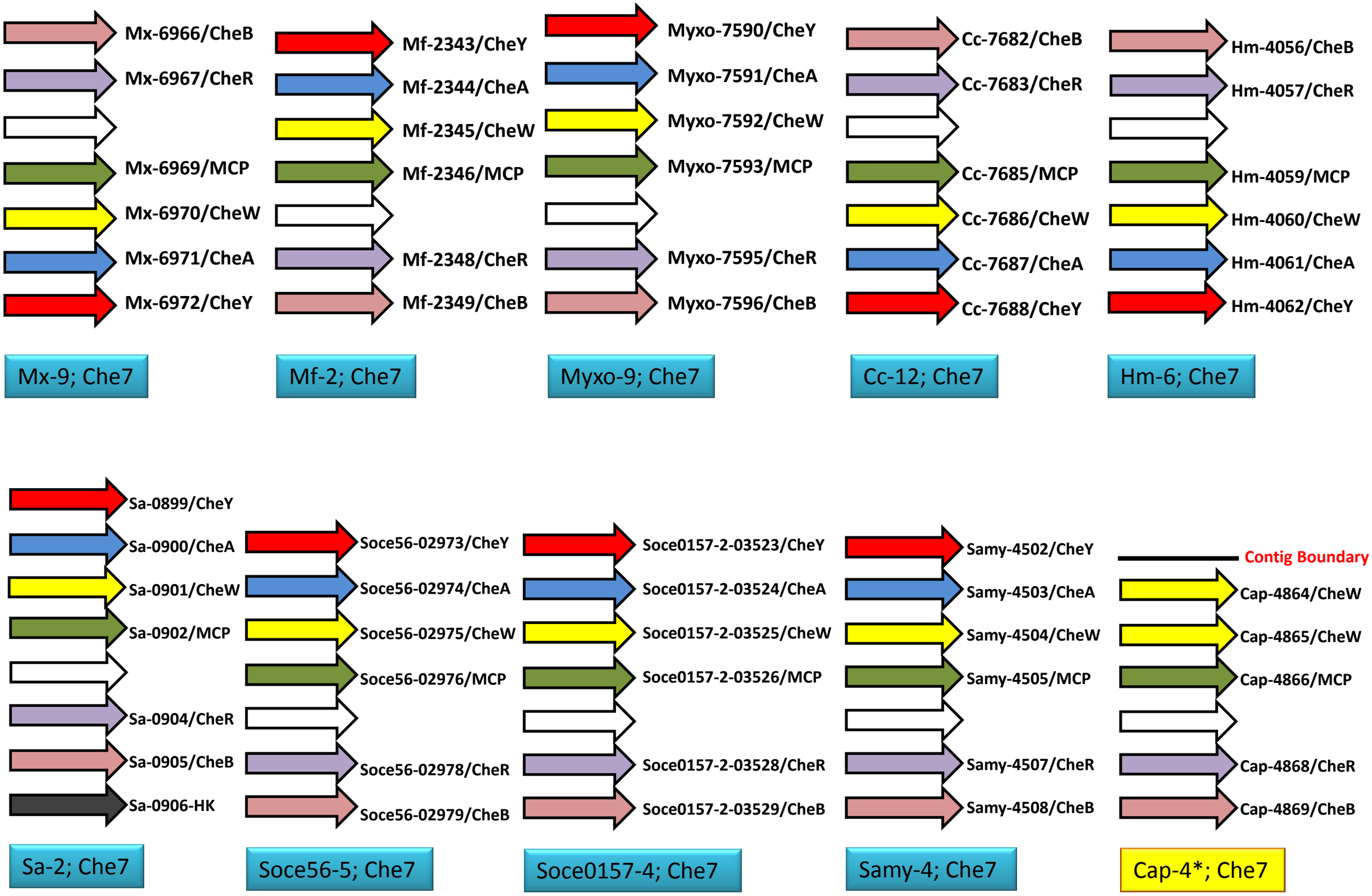

Mx-2696/CheW
Mx-2697/CheR
Mx-2698/MCP
Mx-2699/CheY
Mx-2700/CheW
Mx-2701/CheA
Mx-2; Che4
Mf-4265/CheW
Mf-4266/CheR
Mf-4267/MCP
Mf-4268/CheY
Mf-4269/CheW
Mf-4270/CheA
Mf-6; Che4
Ms-3136/CheW
Ms-3137/CheR
Ms-3138/MCP
Ms-3139/CheY
Ms-3140/CheW
Ms-3141/CheA
Ms-1; Che4
Myxo-4344/CheA
Myxo-4345/CheW
Myxo-4346/CheY
Myxo-4347/MCP
Myxo-4348/CheR
Myxo-4349/CheW
Myxo-7; Che4
Cc-5445/CheA
Cc-5446/CheW
Cc-5447/CheY
Cc-5448/MCP
Cc-5449/CheR
Cc-5450/CheW
Cc-6; Che4
Ag-07070/CheA
Ag-07071/CheW
Ag-07072/CheY
Ag-07073/MCP
Ag-07074/CheR
Ag-07075/CheW
Ag-4; Che4
Cyb-05874/CheA
Cyb-05875/CheW
Cyb-05876/CheY
Cyb-05877/MCP
Cyb-05878/CheR
Cyb-05879/CheW
Cyb-9; Che4
Cyvi-04439/CheW
Cyvi-04440/CheR
Cyvi-04441/MCP
Cyvi-04442/CheY
Cyvi-04443/CheW
Cyvi-04444/CheA
Cyvi-7; Che4
Hm-1682/CheW
Hm-1683/CheR
Hm-1684/MCP
Hm-1685/CheY
Hm-1686/CheW
Hm-1687/CheA
Hm-2; Che4
Sa-3490/CheW
Sa-3491/CheR
Sa-3492/MCP
Sa-3493/CheY
Sa-3494/CheW
Sa-3495/CheA
Sa-6; Che4

Che4


Mx-6039/MCP
Mx-6040/CheB
Mx-6041/CheA
Mx-6042/CheW
Mx-6043/CheR
Mx-6044/CheW
Mx-6045/CheY
Mx-6; Che5
Mf-3265/CheY
Mf-3266/CheW
Mf-3267/CheR
Mf-3268/CheW
Mf-3269/CheA
Mf-3270/CheB
Mf-3271/MCP
Mf-5; Che5
Ms-6753/MCP
Ms-6754/CheB
Ms-6755/CheA
Ms-6756/CheW
Ms-6757/CheR
Ms-6758/CheW
Ms-6759/CheY
Ms-5; Che5
Myxo-0863/CheY
Myxo-0864/CheW
Myxo-0865/CheR
Myxo-0866/CheW
Myxo-0867/CheA
Myxo-0868/CheB
Myxo-0869/MCP
Myxo-2; Che5
Cc-6688/MCP
Cc-6689/CheB
Cc-6690/CheA
Cc-6691/CheW
Cc-6692/CheR
Cc-6693/CheW
Cc-6694/CheY
Cc-9; Che5
Ag-08709/MCP
Ag-08710/CheB
Ag-08711/CheA
Ag-08712/CheW
Ag-08713/CheR
Ag-08714/CheW
Ag-08715/CheY
Ag-6; Che5
Cyb-00590/MCP
Cyb-00591/CheB
Cyb-00592/CheA
Cyb-00593/CheW
Cyb-00594/CheR
Cyb-00595/CheW
Cyb-00596/CheY
Cyb-2; Che5
Cyvi-03217/CheY
Cyvi-03218/CheW
Cyvi-03219/CheR
Cyvi-03220/CheW
Cyvi-03221/CheA
Cyvi-03222/CheB
Cyvi-03223/MCP
Cyvi-4; Che5
Hm-2060/MCP
Hm-2061/CheB
Hm-2062/CheA
Hm-2063/CheW
Hm-2064/CheR
Hm-2065/CheW
Hm-2066/CheY
Hm-3; Che5
Sa-6840/MCP
Sa-6841/CheB
Sa-6842/CheA
Sa-6843/CheW
Sa-6844/CheR
Sa-6845/CheW
Sa-6846/CheY
Sa-11; Che5

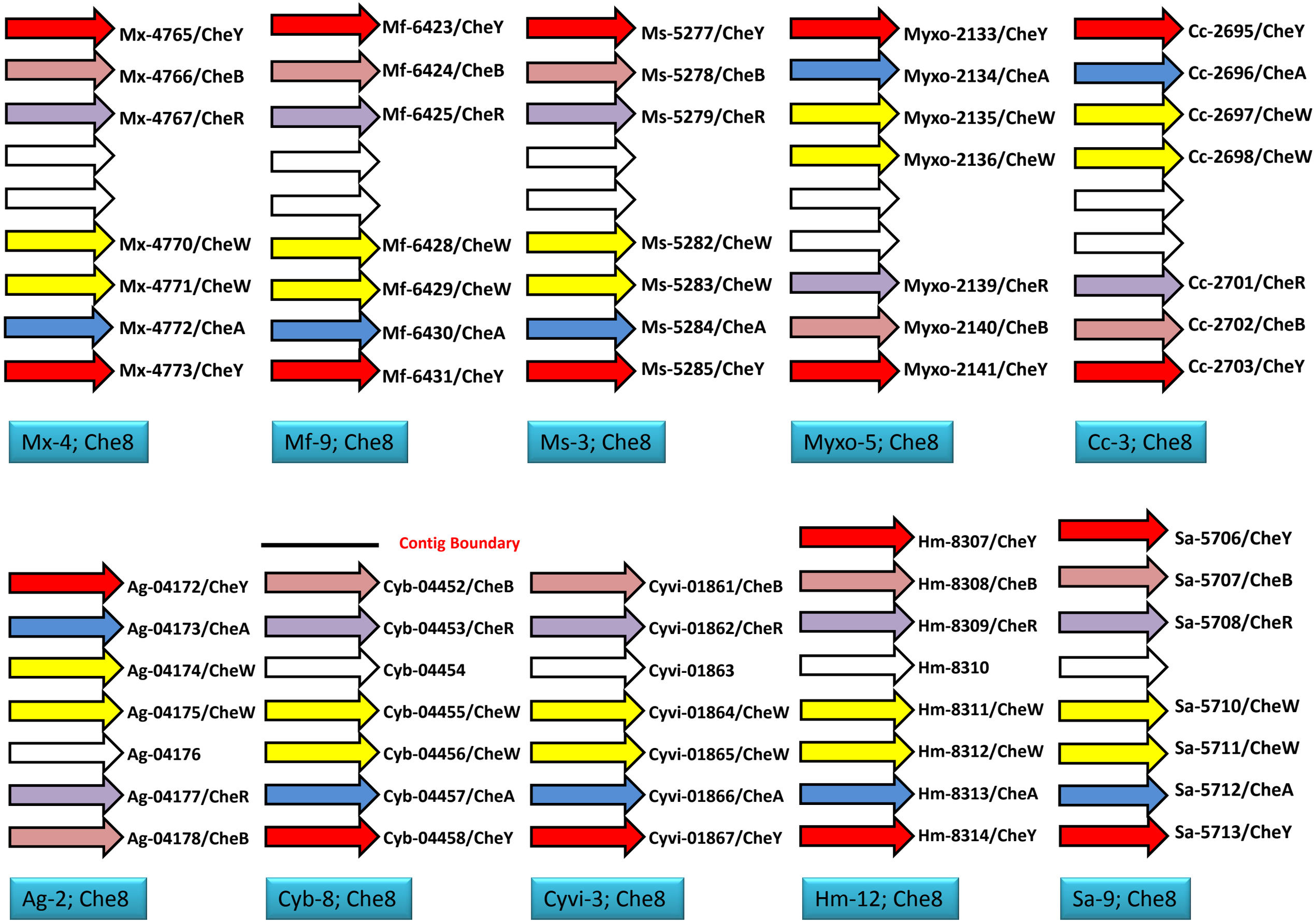
Che5


Mx-6952/CheW
Mx-6953/CheR
Mx-6954/CheW
Mx-6955/MCP
Mx-6956/CheA
Mx-6957/CheB
Mx-8; Che6
Mf-2355/CheB
Mf-2356/CheY
Mf-2357/CheA
Mf-2358/MCP
Mf-2359/CheW
Mf-2360/CheR
Mf-2361/CheW
Mf-3; Che6
Ms-7684/CheW
Ms-7685/CheR
Ms-7686/CheW
Ms-7687/MCP
Ms-7688/CheA
Ms-7689/CheB
Ms-7; Che6
Myxo-7604/CheB
Myxo-7605/CheA
Myxo-7606/MCP
Myxo-7607/CheW
Myxo-7608/CheR
Myxo-7609/CheW
Myxo-10; Che6
Cc-7665/CheW
Cc-7666/CheR
Cc-7667/CheW
Cc-7668/MCP
Cc-7669/CheA
Cc-7670/CheB
Cc-11; Che6
Ag-09744/CheW
Ag-09745/CheR
Ag-09746
Ag-09747/CheW
Ag-09748/MCP
Ag-09749/CheA
Ag-09750/CheB
Ag-9; Che6
Cyb-09214/CheY
Cyb-09215/CheW
Cyb-09216/CheR
Cyb-09217/CheW
Cyb-09218/MCP
Cyb-09219/CheA
Cyb-09220/CheB
Cyb-13; Che6
Cyvi-03313/CheB
Cyvi-03314/CheA
Cyvi-03315/MCP
Cyvi-03316/CheW
Cyvi-03317/CheR
Cyvi-03318/CheW
Cyvi-5; Che6
Hm-4031/CheW
Hm-4032/CheR
Hm-4033/CheW
Hm-4034/MCP
Hm-4035/CheA
Hm-4036/CheB
Hm-5; Che6
Sa-0910/CheB
Sa-0911/CheA
Sa-0912/MCP
Sa-0913/CheW
Sa-0914/CheR
Sa-0915/CheW
Sa-3; Che6
Ad-2686/CheR
Ad-2687/CheW
Ad-2688/MCP
Ad-2689/CheA
Ad-2690/CheB
Ad-5; Che6
Ho-3298/CheB
Ho-3299/CheA
Ho-3300/MCP
Ho-3301/CheW
Ho-3302/CheR
Ho-3303/CheW
Ho-2; Che6
Cap-4265/CheW
Cap-4266/CheR
Cap-4267/CheW
Cap-4268/MCP
Cap-4269/CheA
Cap-4270/CheB
Cap-3; Che6
Samy-3133/CheW
Samy-3134
Samy-3135/CheW
Samy-3136/MCP
Samy-3137/CheA
Samy-3138/CheB
Samy-2; Che6
Che6

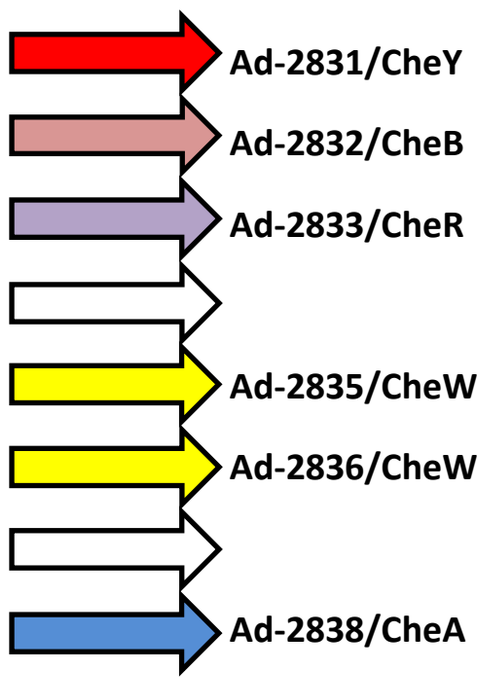


* Cap-4 placed here on the basis of CheB phylogeny

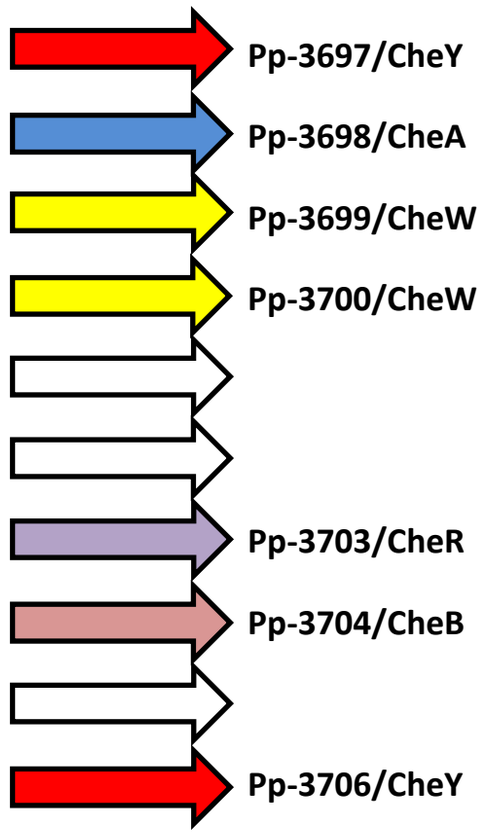
Che7


Mx-4765/CheY
Mx-4766/CheB
Mx-4767/CheR
Mx-4770/CheW
Mx-4771/CheW
Mx-4772/CheA
Mx-4773/CheY
Mx-4; Che8
Mf-6423/CheY
Mf-6424/CheB
Mf-6425/CheR
Mf-6428/CheW
Mf-6429/CheW
Mf-6430/CheA
Mf-6431/CheY
Mf-9; Che8
Ms-5277/CheY
Ms-5278/CheB
Ms-5279/CheR
Ms-5282/CheW
Ms-5283/CheW
Ms-5284/CheA
Ms-5285/CheY
Ms-3; Che8
Myxo-2133/CheY
Myxo-2134/CheA
Myxo-2135/CheW
Myxo-2136/CheW
Myxo-2139/CheR
Myxo-2140/CheB
Myxo-2141/CheY
Myxo-5; Che8
Cc-2695/CheY
Cc-2696/CheA
Cc-2697/CheW
Cc-2698/CheW
Cc-2701/CheR
Cc-2702/CheB
Cc-2703/CheY
Cc-3; Che8
Contig Boundary
Ag-04172/CheY
Ag-04173/CheA
Ag-04174/CheW
Ag-04175/CheW
Ag-04176
Ag-04177/CheR
Ag-04178/CheB
Ag-2; Che8
Cyb-04452/CheB
Cyb-04453/CheR
Cyb-04454
Cyb-04455/CheW
Cyb-04456/CheW
Cyb-04457/CheA
Cyb-04458/CheY
Cyb-8; Che8
Cyvi-01861/CheB
Cyvi-01862/CheR
Cyvi-01863
Cyvi-01864/CheW
Cyvi-01865/CheW
Cyvi-01866/CheA
Cyvi-01867/CheY
Cyvi-3; Che8
Hm-8307/CheY
Hm-8308/CheB
Hm-8309/CheR
Hm-8310
Hm-8311/CheW
Hm-8312/CheW
Hm-8313/CheA
Hm-8314/CheY
Hm-12; Che8
Sa-5706/CheY
Sa-5707/CheB
Sa-5708/CheR
Sa-5710/CheW
Sa-5711/CheW
Sa-5712/CheA
Sa-5713/CheY
Sa-9; Che8

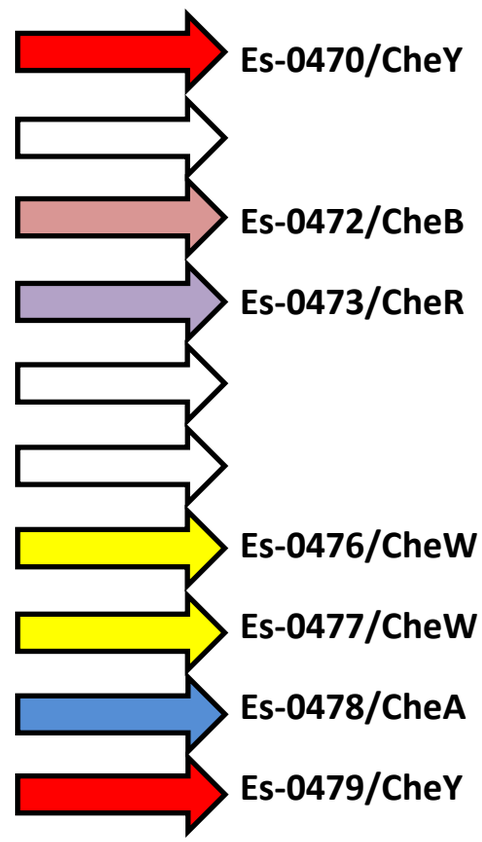
Che8



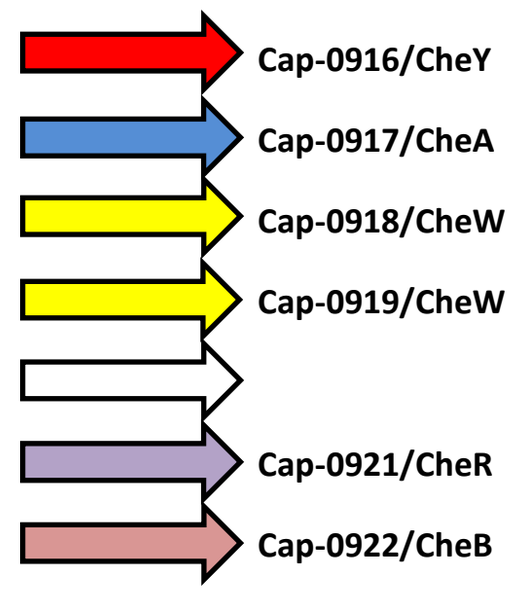
Ad-6; Che8



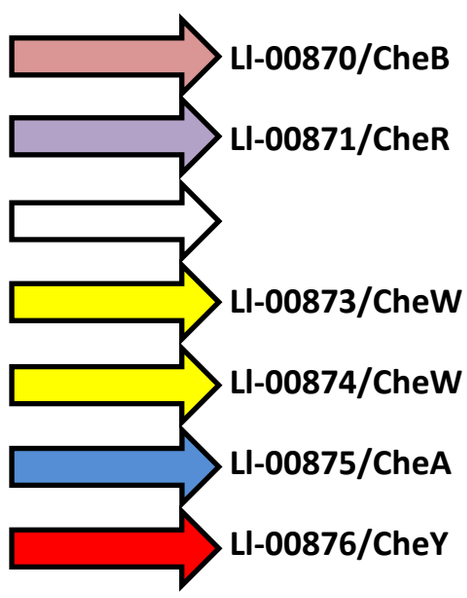
Pp-1; Che8



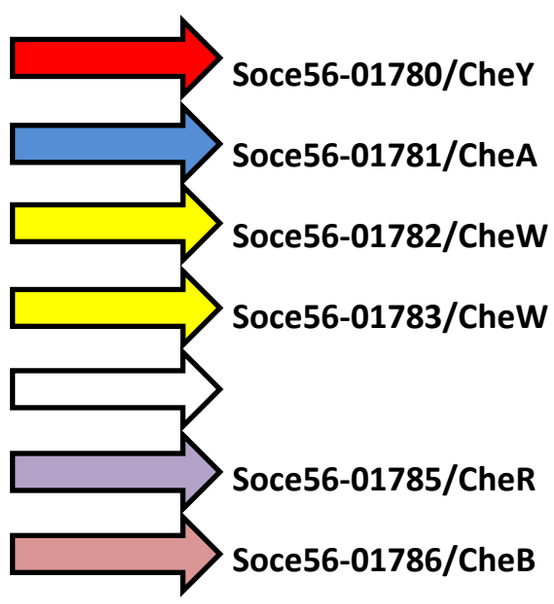
Es-1; Che8



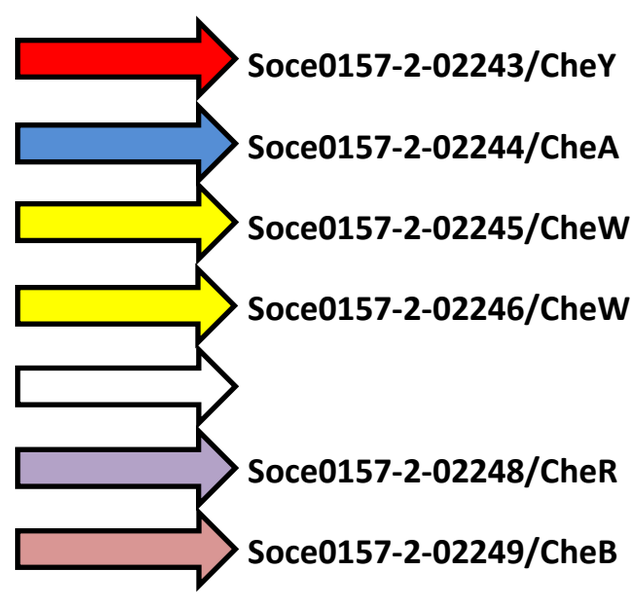
Cap-1; Che8



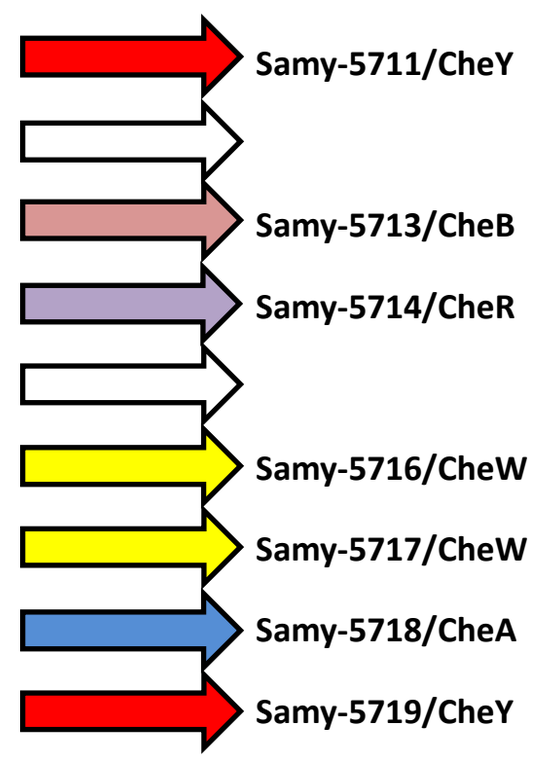
Ll-2; Che8



Soce56-3; Che8

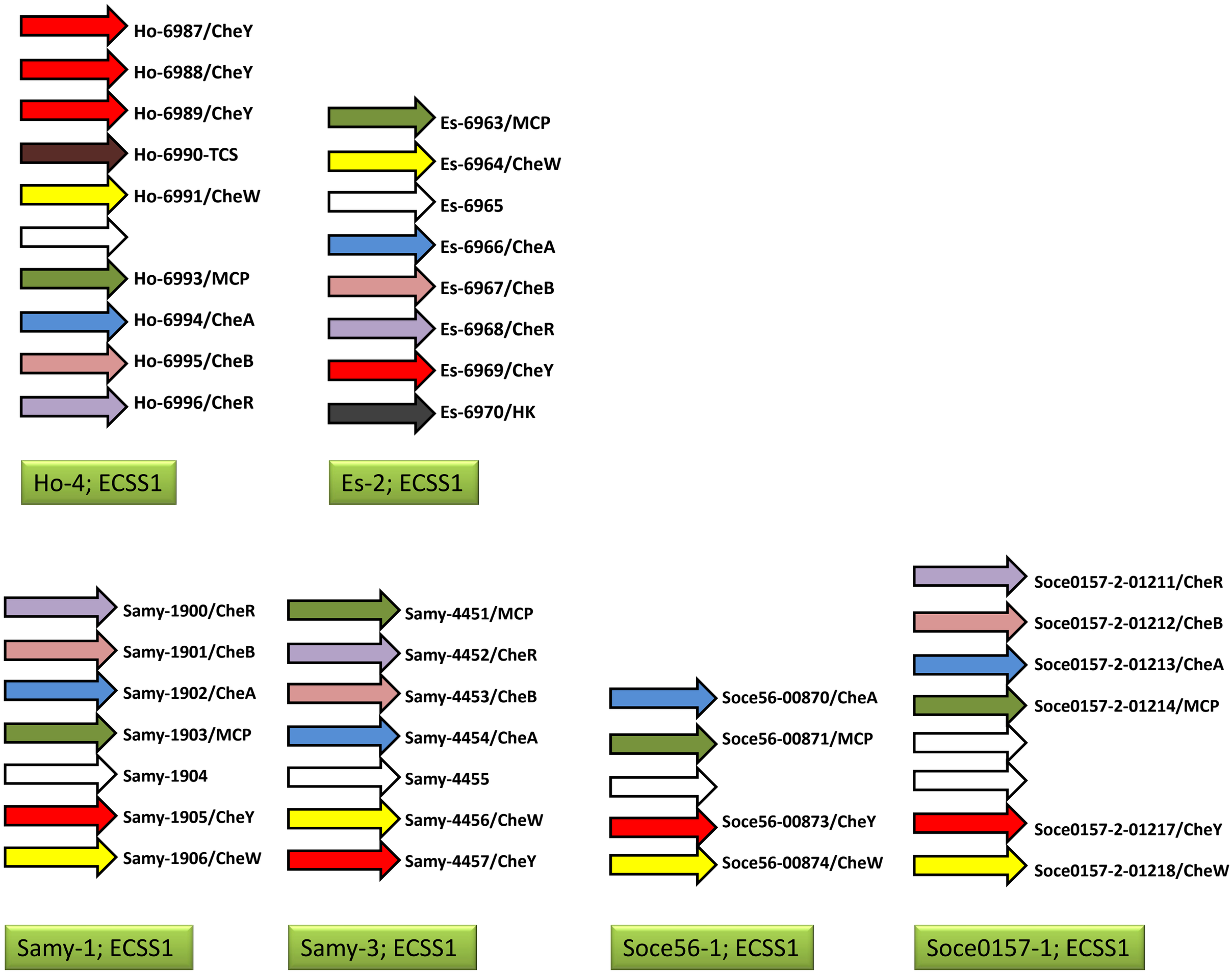


Soce0157-2; Che8

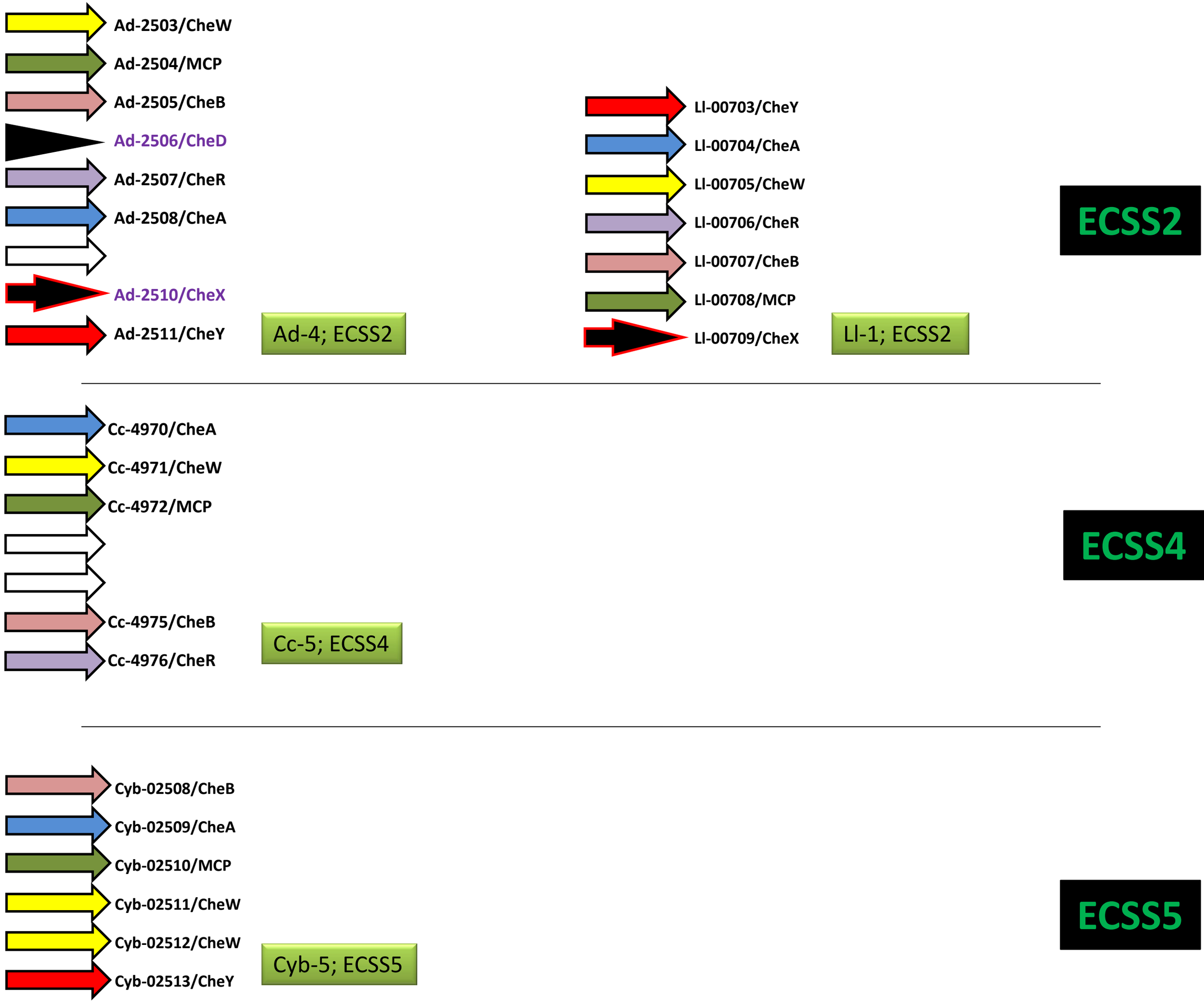


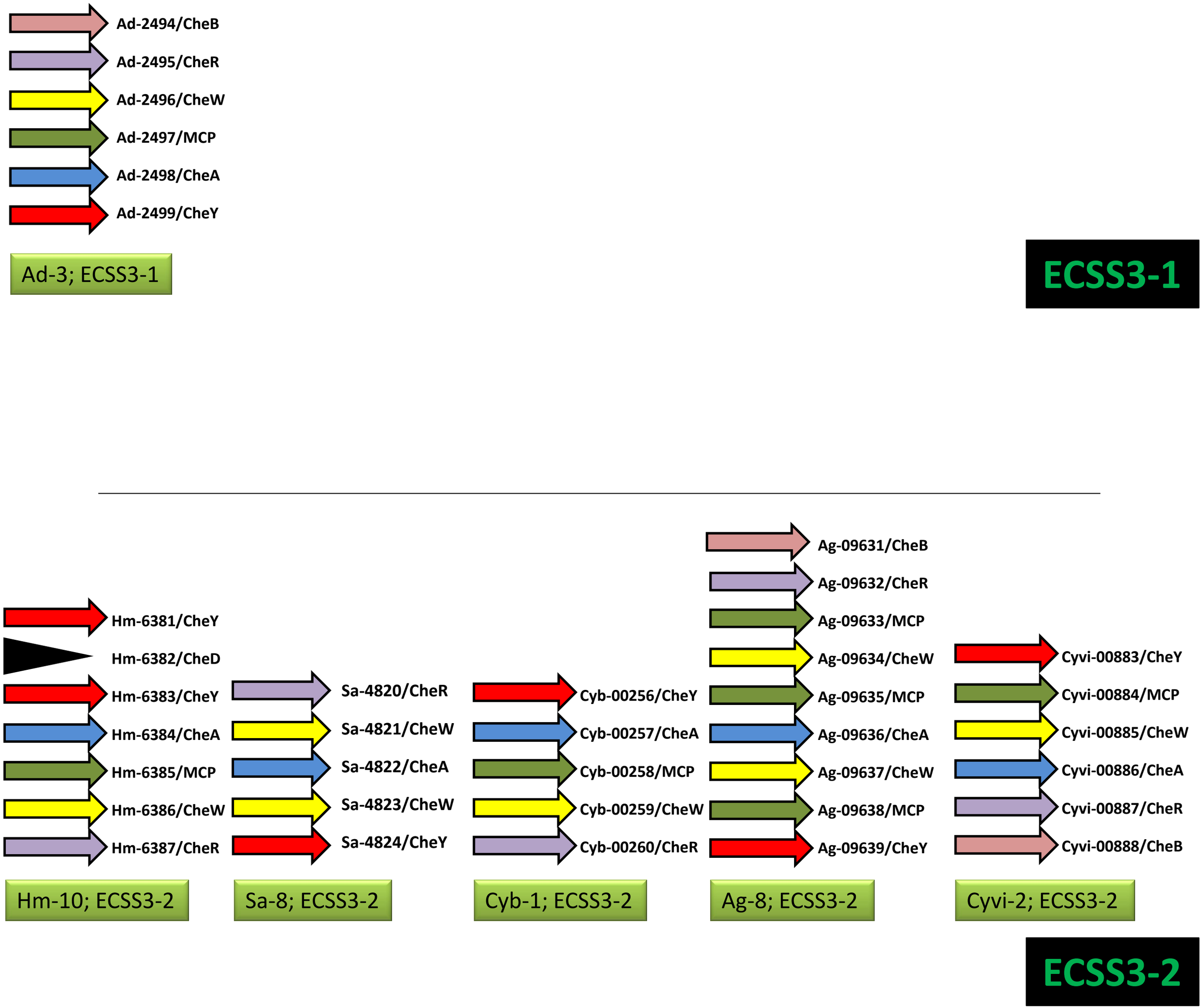
Samy-5; Che8

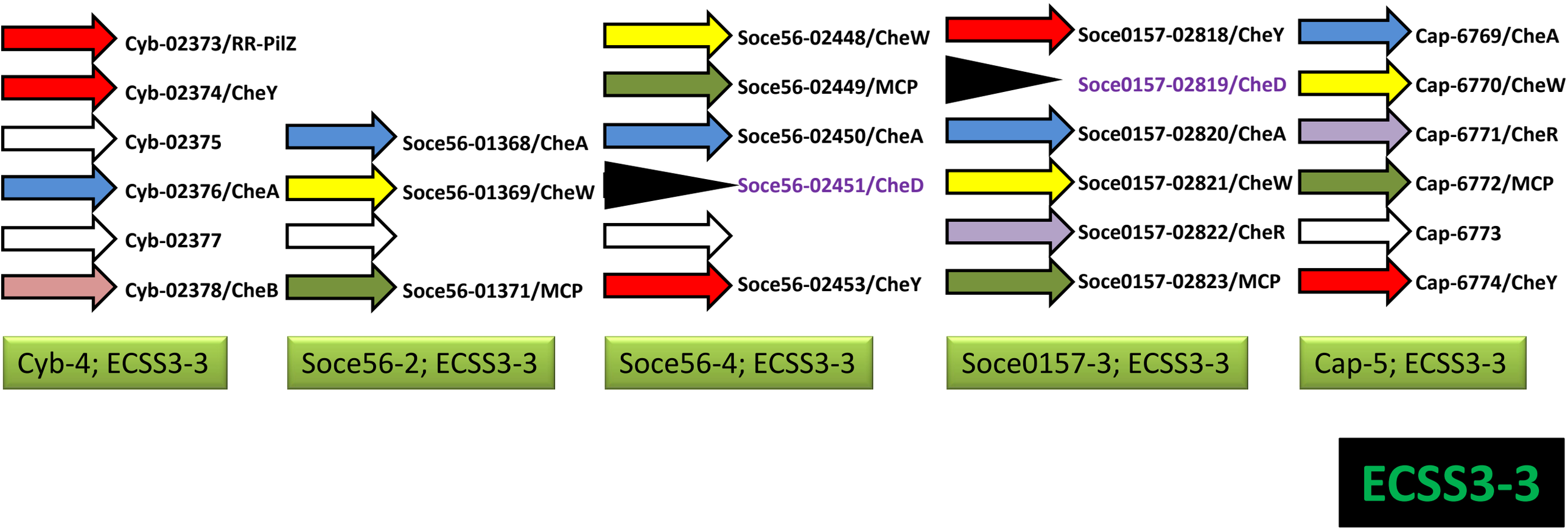
Che8


Ho-6987/CheY
Ho-6988/CheY
Ho-6989/CheY
Ho-6990-TCS
Ho-6991/CheW
Ho-6993/MCP
Ho-6994/CheA
Ho-6995/CheB
Ho-6996/CheR
Ho-4; ECSS1
Es-6963/MCP
Es-6964/CheW
Es-6965
Es-6966/CheA
Es-6967/CheB
Es-6968/CheR
Es-6969/CheY
Es-6970/HK
Es-2; ECSS1
Samy-1900/CheR
Samy-1901/CheB
Samy-1902/CheA
Samy-1903/MCP
Samy-1904
Samy-1905/CheY
Samy-1906/CheW
Samy-1; ECSS1
Samy-4451/MCP
Samy-4452/CheR
Samy-4453/CheB
Samy-4454/CheA
Samy-4455
Samy-4456/CheW
Samy-4457/CheY
Samy-3; ECSS1
Soce56-00870/CheA
Soce56-00871/MCP
Soce56-00873/CheY
Soce56-00874/CheW
Soce56-1; ECSS1
Soce0157-2-01211/CheR
Soce0157-2-01212/CheB
Soce0157-2-01213/CheA
Soce0157-2-01214/MCP
Soce0157-2-01217/CheY
Soce0157-2-01218/CheW
Soce0157-1; ECSS1

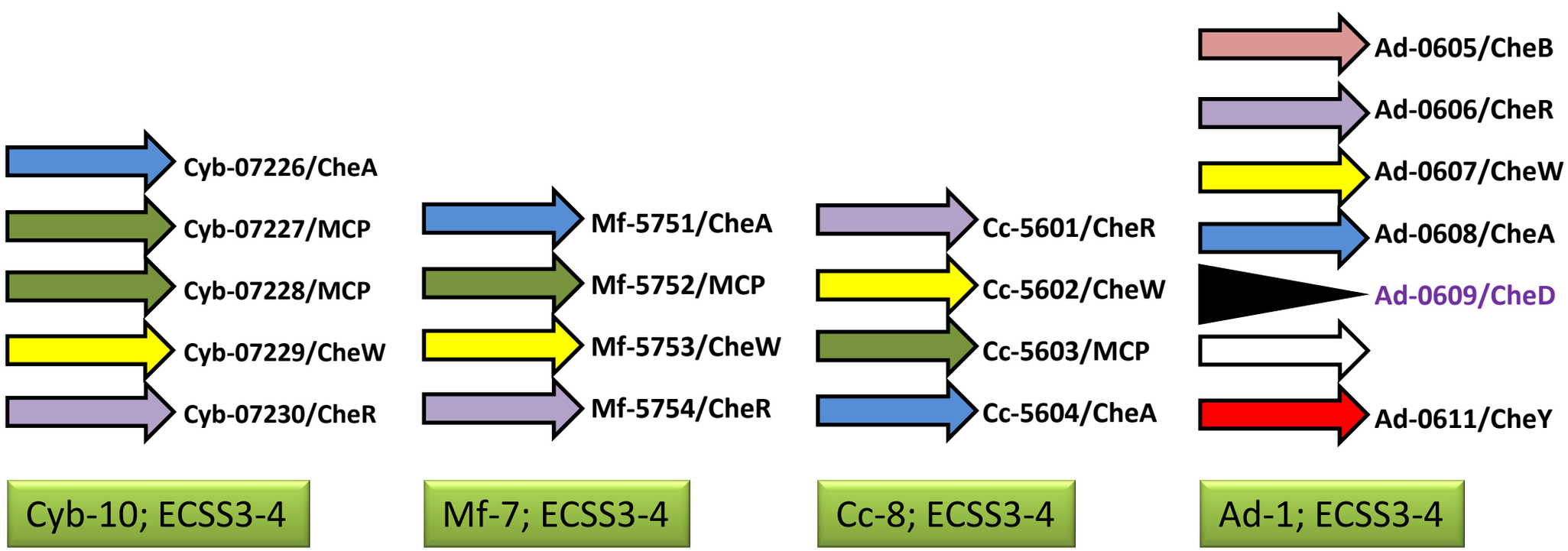
ECSS1


Ad-2503/CheW
Ad-2504/MCP
Ad-2505/CheB
Ad-2506/CheD
Ad-2507/CheR
Ad-2508/CheA
Ad-2510/CheX
Ad-2511/CheY
Ad-4; ECSS2
Ll-00703/CheY
Ll-00704/CheA
Ll-00705/CheW
Ll-00706/CheR
Ll-00707/CheB
Ll-00708/MCP
Ll-00709/CheX
Ll-1; ECSS2
ECSS2
Cc-4970/CheA
Cc-4971/CheW
Cc-4972/MCP
Cc-4975/CheB
Cc-4976/CheR
Cc-5; ECSS4
ECSS4
Cyb-02508/CheB
Cyb-02509/CheA
Cyb-02510/MCP
Cyb-02511/CheW
Cyb-02512/CheW
Cyb-02513/CheY
Cyb-5; ECSS5
ECSS5

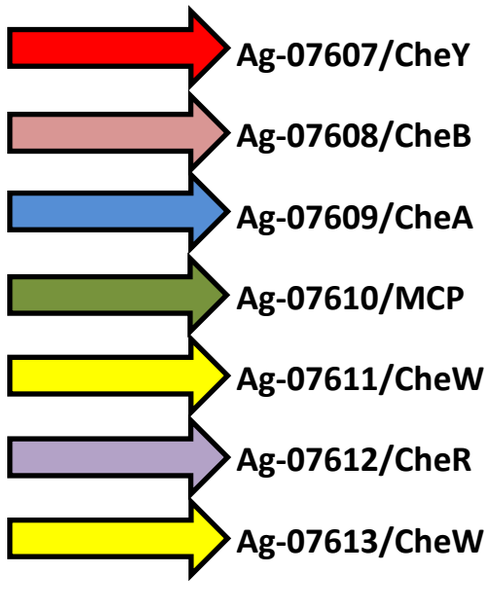

Ad-2494/CheB
Ad-2495/CheR
Ad-2496/CheW
Ad-2497/MCP
Ad-2498/CheA
Ad-2499/CheY
Ad-3; ECSS3-1
ECSS3-1
Hm-6381/CheY
Hm-6382/CheD
Hm-6383/CheY
Hm-6384/CheA
Hm-6385/MCP
Hm-6386/CheW
Hm-6387/CheR
Hm-10; ECSS3-2
Sa-4820/CheR
Sa-4821/CheW
Sa-4822/CheA
Sa-4823/CheW
Sa-4824/CheY
Sa-8; ECSS3-2
Cyb-00256/CheY
Cyb-00257/CheA
Cyb-00258/MCP
Cyb-00259/CheW
Cyb-00260/CheR
Cyb-1; ECSS3-2
Ag-09631/CheB
Ag-09632/CheR
Ag-09633/MCP
Ag-09634/CheW
Ag-09635/MCP
Ag-09636/CheA
Ag-09637/CheW
Ag-09638/MCP
Ag-09639/CheY
Ag-8; ECSS3-2
Cyvi-00883/CheY
Cyvi-00884/MCP
Cyvi-00885/CheW
Cyvi-00886/CheA
Cyvi-00887/CheR
Cyvi-00888/CheB
Cyvi-2; ECSS3-2
ECSS3-2



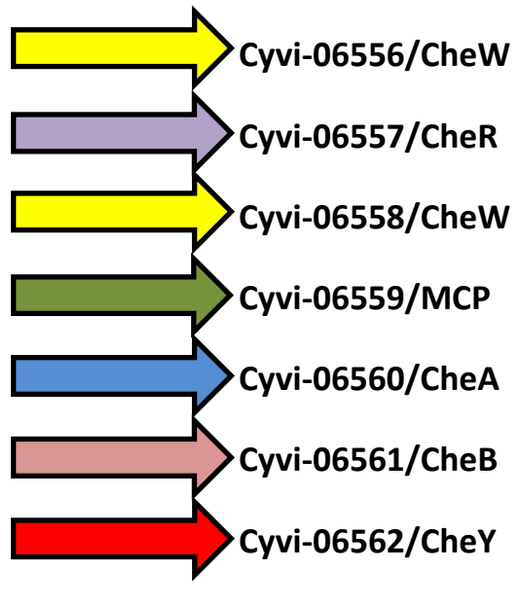
ECSS3-3



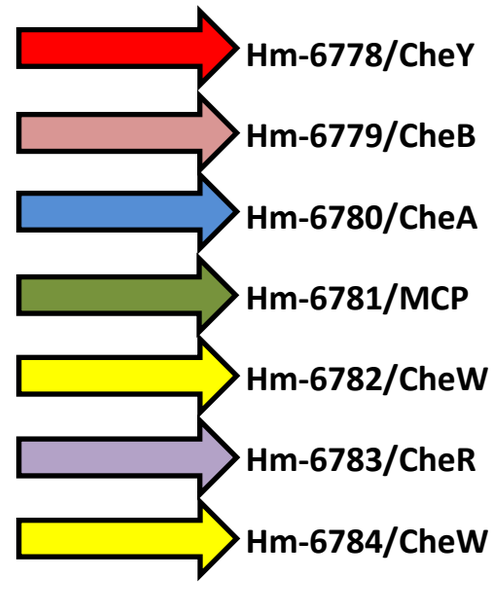
ECSS3-4



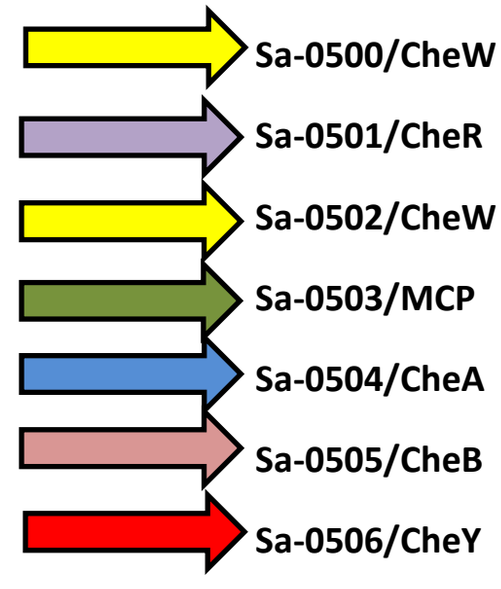
Ag-5; ECSS6



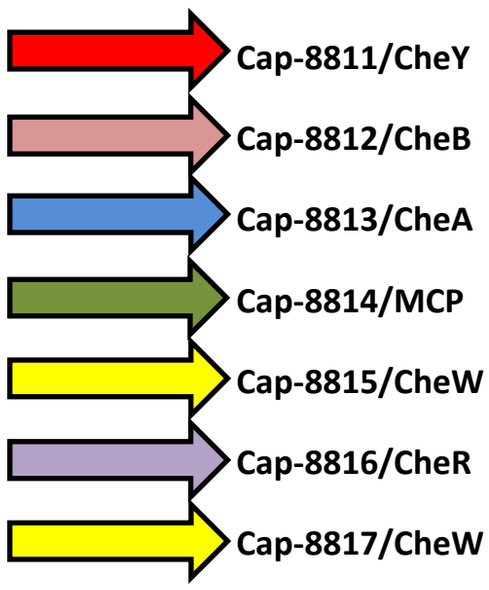
Cyvi-8; ECSS6



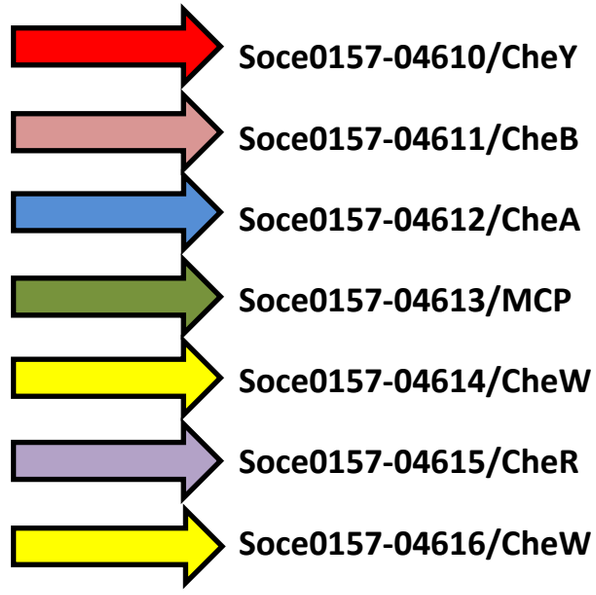
Hm-11; ECSS6



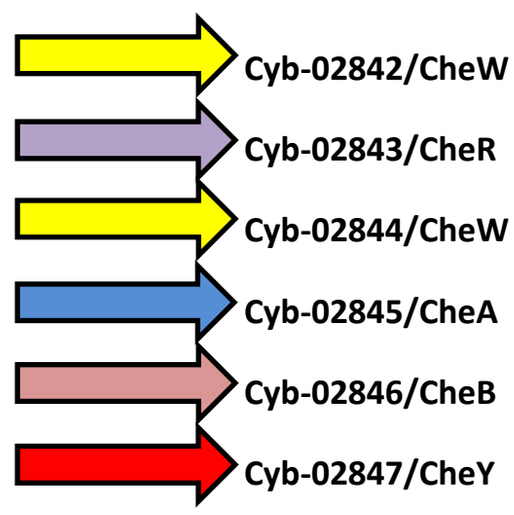
Sa-1; ECSS6



Cap-6; ECSS6

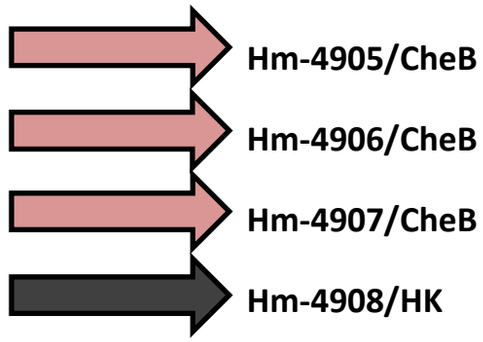


Soce0157-5; ECSS6



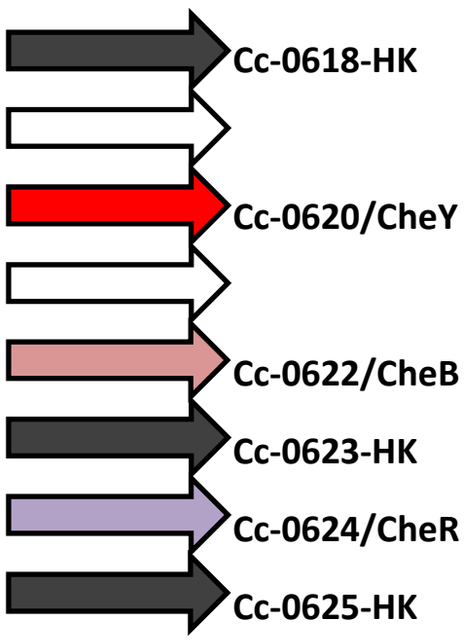
Cyb-6; ECSS-6

ECSS6

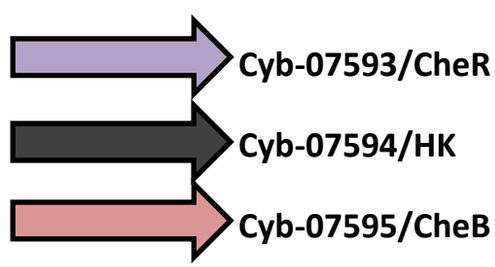


Hm-8 ; ACSS1

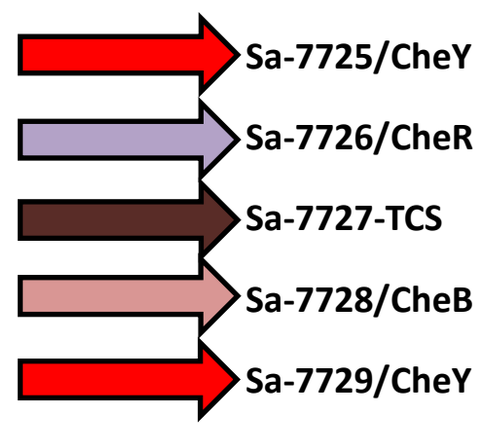
ACSS1



Cc-1; ACSS2

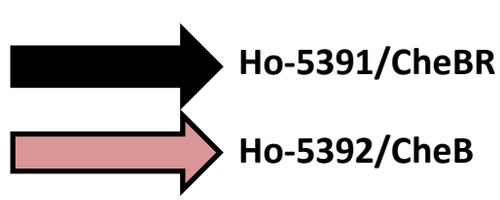


Cyb-11; ACSS2

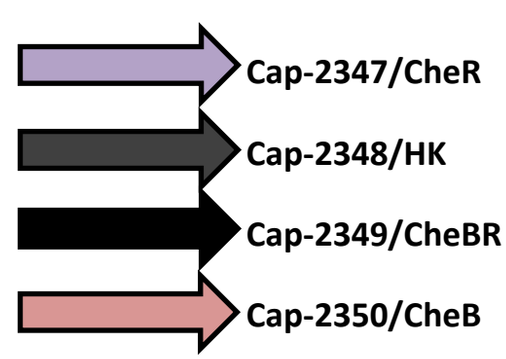


Sa-12; ACSS2

Soce0157-6; ACSS2

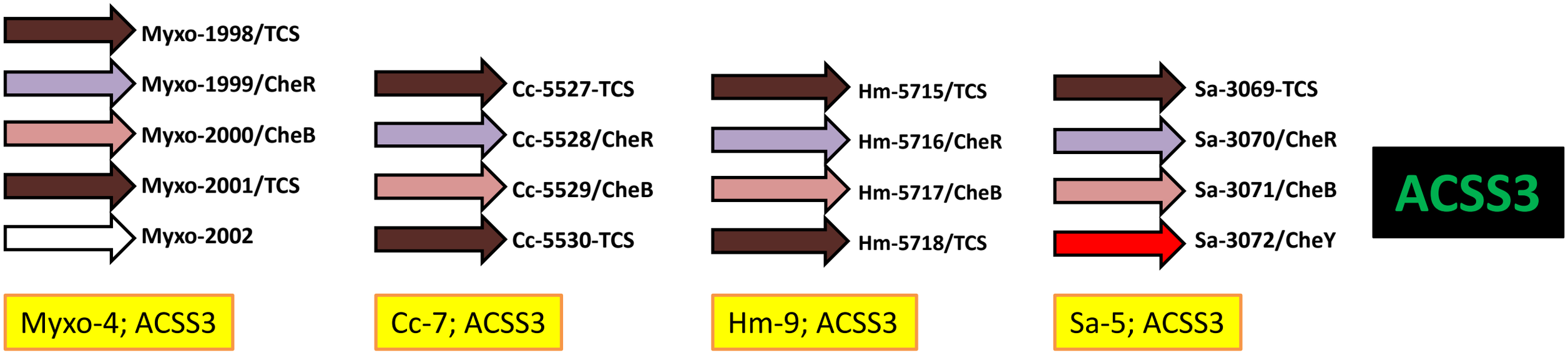


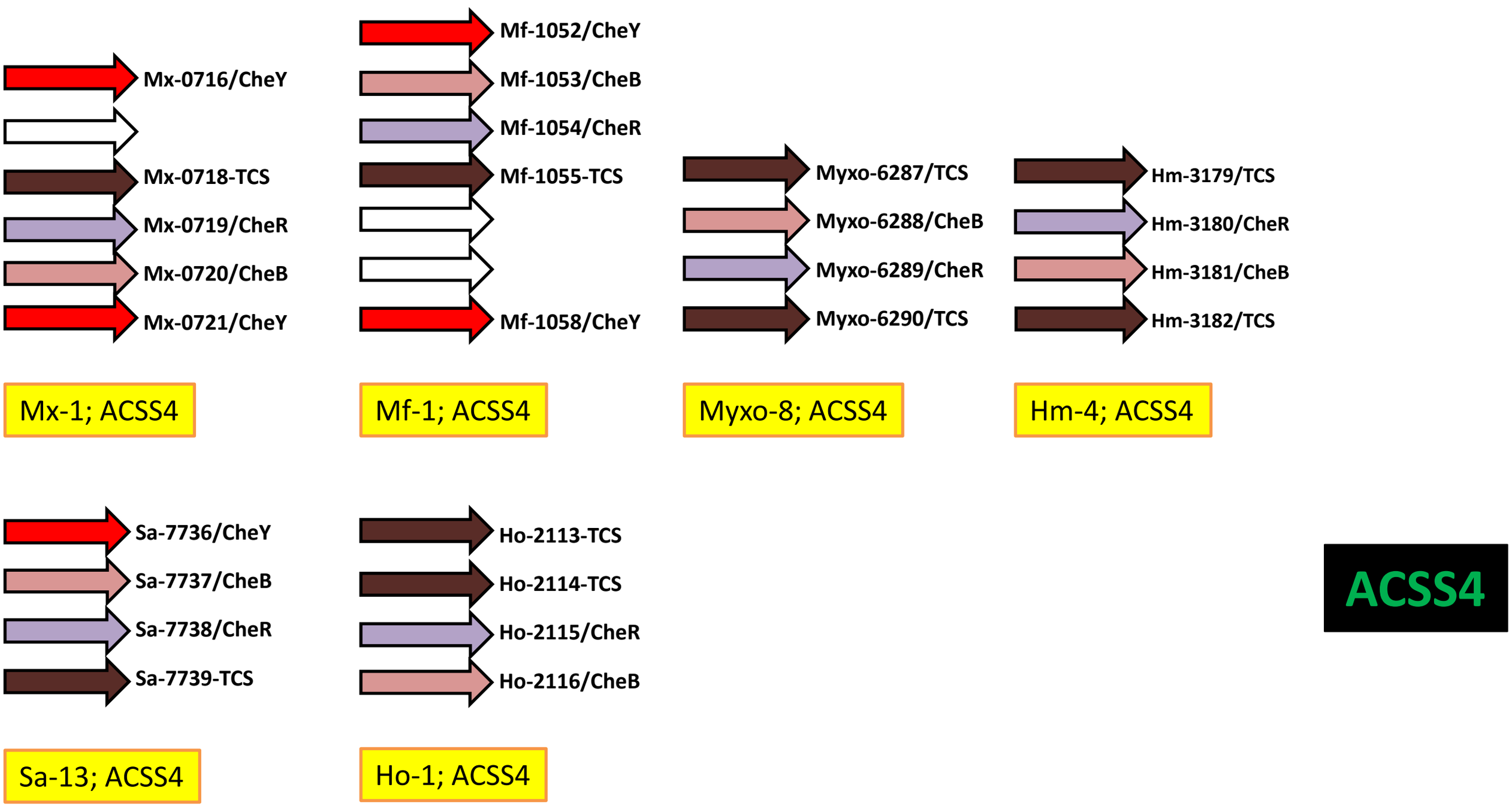
Ho-3; ACSS2

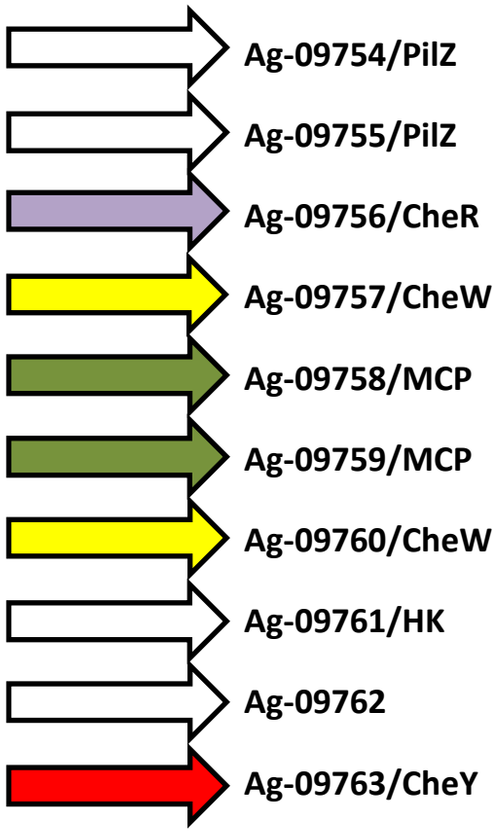


Cap-2; ACSS2

ACSS2

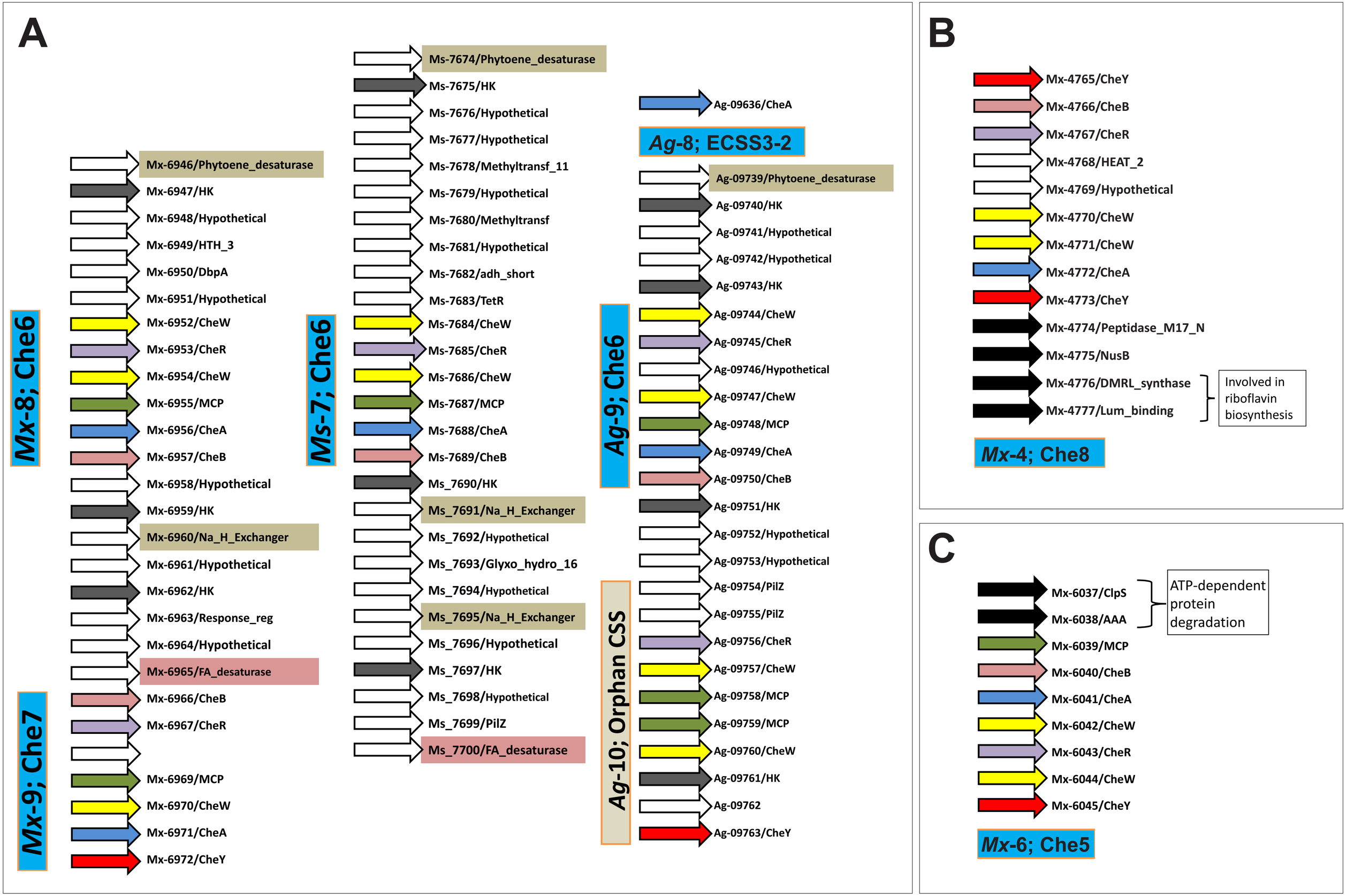

Myxo-1998/TCS
Myxo-1999/CheR
Myxo-2000/CheB
Myxo-2001/TCS
Myxo-2002
Cc-5527-TCS
Cc-5528/CheR
Cc-5529/CheB
Cc-5530-TCS
Hm-5715/TCS
Hm-5716/CheR
Hm-5717/CheB
Hm-5718/TCS
Sa-3069-TCS
Sa-3070/CheR
Sa-3071/CheB
Sa-3072/CheY
ACSS3
Myxo-4; ACSS3
Cc-7; ACSS3
Hm-9; ACSS3
Sa-5; ACSS3

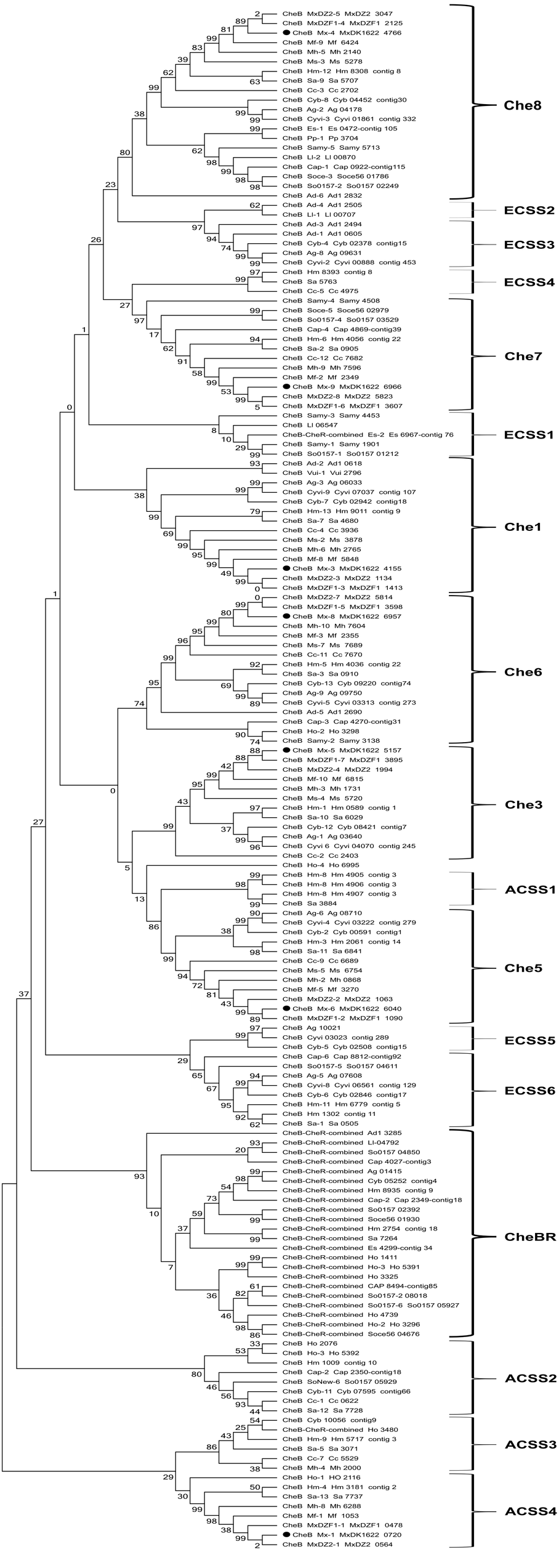

Mx-0716/CheY
Mx-0718-TCS
Mx-0719/CheR
Mx-0720/CheB
Mx-0721/CheY
Mf-1052/CheY
Mf-1053/CheB
Mf-1054/CheR
Mf-1055-TCS
Mf-1058/CheY
Myxo-6287/TCS
Myxo-6288/CheB
Myxo-6289/CheR
Myxo-6290/TCS
Hm-3179/TCS
Hm-3180/CheR
Hm-3181/CheB
Hm-3182/TCS
Sa-7736/CheY
Sa-7737/CheB
Sa-7738/CheR
Sa-7739-TCS
Ho-2113-TCS
Ho-2114-TCS
Ho-2115/CheR
Ho-2116/CheB
ACSS4
Mx-1; ACSS4
Mf-1; ACSS4
Myxo-8; ACSS4
Hm-4; ACSS4
Sa-13; ACSS4
Ho-1; ACSS4



Ag-10; Orphan CSS

Orphan CSS


A
Mx-8; Che6
Mx-6946/Phytoene_desaturase
Mx-6947/HK
Mx-6948/Hypothetical
Mx-6949/HTH_3
Mx-6950/DbpA
Mx-6951/Hypothetical
Mx-6952/CheW
Mx-6953/CheR
Mx-6954/CheW
Mx-6955/MCP
Mx-6956/CheA
Mx-6957/CheB
Mx-6958/Hypothetical
Mx-6959/HK
Mx-6960/Na_H_Exchanger
Mx-6961/Hypothetical
Mx-6962/HK
Mx-6963/Response_reg
Mx-6964/Hypothetical
Mx-6965/FA_desaturase
Mx-6966/CheB
Mx-6967/CheR
Mx-9; Che7
Mx-6969/MCP
Mx-6970/CheW
Mx-6971/CheA
Mx-6972/CheY
Ms-7; Che6
Ms-7674/Phytoene_desaturase
Ms-7675/HK
Ms-7676/Hypothetical
Ms-7677/Hypothetical
Ms-7678/Methyltransf_11
Ms-7679/Hypothetical
Ms-7680/Methyltransf
Ms-7681/Hypothetical
Ms-7682/adh_short
Ms-7683/TetR
Ms-7684/CheW
Ms-7685/CheR
Ms-7686/CheW
Ms-7687/MCP
Ms-7688/CheA
Ms-7689/CheB
Ms_7690/HK
Ms_7691/Na_H_Exchanger
Ms_7692/Hypothetical
Ms_7693/Glyxo_hydro_16
Ms_7694/Hypothetical
Ms_7695/Na_H_Exchanger
Ms_7696/Hypothetical
Ms_7697/HK
Ms_7698/Hypothetical
Ms_7699/PilZ
Ms_7700/FA_desaturase
Ag-9; Che6
Ag-09636/CheA
Ag-8; ECSS3-2
Ag-09739/Phytoene_desaturase
Ag-09740/HK
Ag-09741/Hypothetical
Ag-09742/Hypothetical
Ag-09743/HK
Ag-09744/CheW
Ag-09745/CheR
Ag-09746/Hypothetical
Ag-09747/CheW
Ag-09748/MCP
Ag-09749/CheA
Ag-09750/CheB
Ag-09751/HK
Ag-09752/Hypothetical
Ag-09753/Hypothetical
Ag-10; Orphan CSS
Ag-09754/PilZ
Ag-09755/PilZ
Ag-09756/CheR
Ag-09757/CheW
Ag-09758/MCP
Ag-09759/MCP
Ag-09760/CheW
Ag-09761/HK
Ag-09762
Ag-09763/CheY
B
Mx-4765/CheY
Mx-4766/CheB
Mx-4767/CheR
Mx-4768/HEAT_2
Mx-4769/Hypothetical
Mx-4770/CheW
Mx-4771/CheW
Mx-4772/CheA
Mx-4773/CheY
Mx-4774/Peptidase_M17_N
Mx-4775/NusB
Mx-4776/DMRL_synthase
Mx-4777/Lum_binding
Involved in riboflavin biosynthesis
Mx-4; Che8
C
Mx-6037/ClpS
Mx-6038/AAA
ATP-dependent protein degradation
Mx-6039/MCP
Mx-6040/CheB
Mx-6041/CheA
Mx-6042/CheW
Mx-6043/CheR
Mx-6044/CheW
Mx-6045/CheY
Mx-6; Che5


CheB MxDZ2-5 MxDZ2 3047
CheB MxDZF1-4 MxDZF1 2125
CheB Mx-4 MxDK1622 4766
CheB Mf-9 Mf 6424
CheB Mh-5 Mh 2140
CheB Ms-3 Ms 5278
CheB Hm-12 Hm 8308 contig 8
CheB Sa-9 Sa 5707
CheB Cc-3 Cc 2702
CheB Cyb-8 Cyb 04452 contig30
CheB Ag-2 Ag 04178
CheB Cyvi-3 Cyvi 01861 contig 332
CheB Es-1 Es 0472-contig 105
CheB Pp-1 Pp 3704
CheB Samy-5 Samy 5713
CheB Ll-2 Ll 00870
CheB Cap-1 Cap 0922-contig115
CheB Soce-3 Soce56 01786
CheB So0157-2 So0157 02249
CheB Ad-6 Ad1 2832
CheB Ad-4 Ad1 2505
CheB Ll-1 Ll 00707
CheB Ad-3 Ad1 2494
CheB Ad-1 Ad1 0605
CheB Cyb-4 Cyb 02378 contig15
CheB Ag-8 Ag 09631
CheB Cyvi-2 Cyvi 00888 contig 453
CheB Hm 8393 contig 8
CheB Sa 5763
CheB Cc-5 Cc 4975
CheB Samy-4 Samy 4508
CheB Soce-5 Soce56 02979
CheB So0157-4 So0157 03529
CheB Cap-4 Cap 4869-contig39
CheB Hm-6 Hm 4056 contig 22
CheB Sa-2 Sa 0905
CheB Cc-12 Cc 7682
CheB Mh-9 Mh 7596
CheB Mf-2 Mf 2349
CheB Mx-9 MxDK1622 6966
CheB MxDZ2-8 MxDZ2 5823
CheB MxDZF1-6 MxDZF1 3607
CheB Samy-3 Samy 4453
CheB Ll 06547
CheB-CheR-combined Es-2 Es 6967-contig 76
CheB Samy-1 Samy 1901
CheB So0157-1 So0157 01212
CheB Ad-2 Ad1 0618
CheB Vui-1 Vui 2796
CheB Ag-3 Ag 06033
CheB Cyvi-9 Cyvi 07037 contig 107
CheB Cyb-7 Cyb 02942 contig18
CheB Hm-13 Hm 9011 contig 9
CheB Sa-7 Sa 4680
CheB Cc-4 Cc 3936
CheB Ms-2 Ms 3878
CheB Mh-6 Mh 2765
CheB Mf-8 Mf 5848
CheB Mx-3 MxDK1622 4155
CheB MxDZ2-3 MxDZ2 1134
CheB MxDZF1-3 MxDZF1 1413
CheB MxDZ2-7 MxDZ2 5814
CheB MxDZF1-5 MxDZF1 3598
CheB Mx-8 MxDK1622 6957
CheB Mh-10 Mh 7604
CheB Mf-3 Mf 2355
CheB Ms-7 Ms 7689
CheB Cc-11 Cc 7670
CheB Hm-5 Hm 4036 contig 22
CheB Sa-3 Sa 0910
CheB Cyb-13 Cyb 09220 contig74
CheB Ag-9 Ag 09750
CheB Cyvi-5 Cyvi 03313 contig 273
CheB Ad-5 Ad1 2690
CheB Cap-3 Cap 4270-contig31
CheB Ho-2 Ho 3298
CheB Samy-2 Samy 3138
CheB Mx-5 MxDK1622 5157
CheB MxDZF1-7 MxDZF1 3895
CheB MxDZ2-4 MxDZ2 1994
CheB Mf-10 Mf 6815
CheB Mh-3 Mh 1731
CheB Ms-4 Ms 5720
CheB Hm-1 Hm 0589 contig 1
CheB Sa-10 Sa 6029
CheB Cyb-12 Cyb 08421 contig7
CheB Ag-1 Ag 03640
CheB Cyvi 6 Cyvi 04070 contig 245
CheB Cc-2 Cc 2403
CheB Ho-4 Ho 6995
CheB Hm-8 Hm 4905 contig 3
CheB Hm-8 Hm 4906 contig 3
CheB Hm-8 Hm 4907 contig 3
CheB Sa 3884
CheB Ag-6 Ag 08710
CheB Cyvi-4 Cyvi 03222 contig 279
CheB Cyb-2 Cyb 00591 contig1
CheB Hm-3 Hm 2061 contig 14
CheB Sa-11 Sa 6841
CheB Cc-9 Cc 6689
CheB Ms-5 Ms 6754
CheB Mh-2 Mh 0868
CheB Mf-5 Mf 3270
CheB MxDZ2-2 MxDZ2 1063
CheB Mx-6 MxDK1622 6040
CheB MxDZF1-2 MxDZF1 1090
CheB Ag 10021
CheB Cyvi 03023 contig 289
CheB Cyb-5 Cyb 02508 contig15
CheB Cap-6 Cap 8812-contig92
CheB So0157-5 So0157 04611
CheB Ag-5 Ag 07608
CheB Cyvi-8 Cyvi 06561 contig 129
CheB Cyb-6 Cyb 02846 contig17
CheB Hm-11 Hm 6779 contig 5
CheB Hm 1302 contig 11
CheB Sa-1 Sa 0505
CheB-CheR-combined Ad1 3285
CheB-CheR-combined Ll-04792
CheB-CheR-combined So0157 04850
CheB-CheR-combined Cap 4027-contig3
CheB-CheR-combined Ag 01415
CheB-CheR-combined Cyb 05252 contig4
CheB-CheR-combined Hm 8935 contig 9
CheB-CheR-combined Cap-2 Cap 2349-contig18
CheB-CheR-combined So0157 02392
CheB-CheR-combined Soce56 01930
CheB-CheR-combined Hm 2754 contig 18
CheB-CheR-combined Sa 7264
CheB-CheR-combined Es 4299-contig 34
CheB-CheR-combined Ho 1411
CheB-CheR-combined Ho-3 Ho 5391
CheB-CheR-combined Ho 3325
CheB-CheR-combined CAP 8494-contig85
CheB-CheR-combined So0157-2 08018
CheB-CheR-combined So0157-6 So0157 05927
CheB-CheR-combined Ho 4739
CheB-CheR-combined Ho-2 Ho 3296
CheB-CheR-combined Soce56 04676
CheB Ho 2076
CheB Ho-3 Ho 5392
CheB Hm 1009 contig 10
CheB Cap-2 Cap 2350-contig18
CheB SoNew-6 So0157 05929
CheB Cyb-11 Cyb 07595 contig66
CheB Cc-1 Cc 0622
CheB Sa-12 Sa 7728
CheB Cyb 10056 contig9
CheB-CheR-combined Ho 3480
CheB Hm-9 Hm 5717 contig 3
CheB Sa-5 Sa 3071
CheB Cc-7 Cc 5529
CheB Mh-4 Mh 2000
CheB Ho-1 HO 2116
CheB Hm-4 Hm 3181 contig 2
CheB Sa-13 Sa 7737
CheB Mh-8 Mh 6288
CheB Mf-1 Mf 1053
CheB MxDZF1-1 MxDZF1 0478
CheB Mx-1 MxDK1622 0720
CheB MxDZ2-1 MxDZ2 0564
Che8
ECSS2
ECSS3
ECSS4
Che7
ECSS1
Che1
Che6
Che3
ACSS1
Che5
ECSS5
ECSS6
CheBR
ACSS2
ACSS3
ACSS4