



Sputcn32\_3877  
 swp\_2258  
 swp\_2514  
 Sputcn32\_0665  
 Sputcn32\_2503  
 swp\_1237  
 Sputcn32\_0535  
 Sputcn32\_2556  
 swp\_1541  
 swp\_4002  
 Sputcn32\_0257  
 Sputcn32\_3973  
 swp\_3076  
 swp\_4733  
 swp\_0658  
 Sputcn32\_2082  
 Sputcn32\_1982  
 Sputcn32\_3078  
 Sputcn32\_0049  
 swp\_1090  
 swp\_3095  
 Sputcn32\_1737  
 swp\_4864  
 Sputcn32\_3847  
 Sputcn32\_2579  
 swp\_1517  
 Sputcn32\_1009  
 swp\_0880  
 Sputcn32\_0845  
 swp\_0385  
 Sputcn32\_2348  
 swp\_1843  
 swp\_3493  
 Sputcn32\_0372  
 swp\_0250  
 Sputcn32\_1297  
 swp\_1265  
 Sputcn32\_3797  
 Sputcn32\_0356  
 swp\_3182  
 Sputcn32\_0398  
 swp\_0752  
 Sputcn32\_0649  
 Sputcn32\_3853  
 swp\_3573  
 Sputcn32\_0366  
 swp\_0242  
 swp\_1720  
 swp\_0311  
 swp\_1814  
 swp\_2416  
 swp\_3960  
 Sputcn32\_0684  
 swp\_4353  
 Sputcn32\_1549  
 Sputcn32\_3330  
 swp\_1042  
 swp\_0691  
 swp\_1977  
 swp\_1072  
 swp\_2154  
 swp\_1617  
 Sputcn32\_0303  
 Sputcn32\_2767  
 swp\_1351  
 swp\_4451  
 Sputcn32\_3142  
 swp\_1404  
 swp\_2315  
 Sputcn32\_3300  
 swp\_0570



Orphan  
 Pair  
 Triad  
 Tetrad  
 Pentad+

**Cluster**

**Family**

**Domains**

Cluster	Family	Domains
Orphan	Classic	1 HAMP,1 HisKA,1 HATPase_c
Pair	Classic	1 HAMP,1 HisKA,1 HATPase_c
Pair	Classic	1 LysR_substrate,1 HisKA,1 HATPase_c
Pair	Classic	1 HisKA,1 HATPase_c
Pair	Classic	1 HisKA,1 HATPase_c
Orphan	Classic	1 SBP_bac_3,1 HisKA,1 HATPase_c
Pair	Classic	1 PBPb,1 HisKA,1 HATPase_c
Pair	CheA	1 Hpt,1 H-kinase_dim,1 HATPase_c,1 CheW
Pair	CheA	1 Hpt,1 H-kinase_dim,1 HATPase_c,1 CheW
Pair	Classic	1 HAMP,1 HisKA,1 HATPase_c
Pair	Classic	1 HAMP,1 HisKA,1 HATPase_c
Pair	Classic	1 HAMP,1 HisKA,1 HATPase_c
Pair	Classic	1 HAMP,1 HisKA,1 HATPase_c
Pair	Classic	1 HAMP,1 HisKA,1 HATPase_c
Pair	Classic	1 HisKA,1 HATPase_c
Pair	Classic	1 HisKA,1 HATPase_c
Pair	Classic	1 HisKA,1 HATPase_c
Pair	Classic	1 HisKA,1 HATPase_c
Orphan	Hybrid	1 HisKA,1 HATPase_c,1 Response_reg
Pair	Classic	1 HAMP,1 HisKA,1 HATPase_c
Pair	Classic	1 HAMP,1 HisKA,1 HATPase_c
Orphan	Classic	1 HAMP,1 HisKA,1 HATPase_c
Pair	Classic	1 HAMP,1 HisKA,1 HATPase_c
Pair	Classic	1 HisKA,1 HATPase_c
Pair	Classic	1 HisKA,1 HATPase_c
Pair	Classic	1 HAMP,1 HisKA,1 HATPase_c
Pair	Classic	1 HAMP,1 HisKA,1 HATPase_c
Pair	Classic	1 HisKA,1 HATPase_c
Pair	Classic	1 HisKA,1 HATPase_c
Pair	Classic	1 HAMP,1 HisKA,1 HATPase_c
Pair	Classic	1 HAMP,1 HisKA,1 HATPase_c
Orphan	Hybrid	1 PAS,1 HisKA,1 HATPase_c,1 REC
Orphan	Hybrid	1 PAS,1 HisKA,1 HATPase_c,1 REC
Orphan	Hybrid	1 PAS_4,1 HisKA,1 HATPase_c,1 Response_reg
Pair	Classic	1 PAS_4,1 HisKA,1 HATPase_c
Pair	Classic	1 PAS,1 HisKA,1 HATPase_c
Pair	Classic	1 PAS,1 HisKA,1 HATPase_c
Orphan	Classic	1 HisKA,1 HATPase_c
Pair	Classic	1 HisKA,1 HATPase_c
Pair	Classic	1 HAMP,1 HisKA,1 HATPase_c
Pair	Classic	1 HAMP,1 HisKA,1 HATPase_c
Orphan	Classic	1 HAMP,1 HisKA,1 HATPase_c
Pair	Classic	1 HAMP,1 HisKA,1 HATPase_c
Pair	Classic	1 HisKA,1 HATPase_c
Pair	Classic	1 HisKA,1 HATPase_c
Pair	Classic	1 HAMP,1 HisKA,1 HATPase_c
Pair	Classic	1 HAMP,1 HisKA,1 HATPase_c
Pair	Classic	1 HisKA,1 HATPase_c
Pair	Classic	1 HisKA,1 HATPase_c
Pair	Classic	1 Cache_2,1 HisKA_3,1 HATPase_c
Pair	Classic	1 HisKA_3,1 HATPase_c
Pair	Classic	1 HisKA_3,1 HATPase_c
Pair	Classic	1 HAMP,1 HisKA_3,1 HATPase_c
Pair	Classic	1 HAMP,1 HisKA_3,1 HATPase_c
Pair	Classic	1 SBP_bac_3,1 HisKA,1 HATPase_c
Pair	Classic	1 GAF,1 His_kinase,1 HATPase_c
Orphan	Classic	1 CHASE,1 PAS,1 HisKA,1 HATPase_c
Orphan	Classic	1 HAMP,1 PAS_4,1 HisKA,1 HATPase_c
Pair	Classic	1 HisKA,1 HATPase_c
Orphan	Hybrid	1 HisKA,1 HATPase_c,1 Response_reg
Orphan	Unorthodox	1 HisKA,1 HATPase_c,1 Response_reg,1 Hpt
Orphan	Hybrid	1 HAMP,1 HisKA,1 HATPase_c,1 Response_reg
Pair	Unorthodox	1 HAMP,2 PAS,1 HisKA,1 HATPase_c,1 Response_reg,1 Hpt
Pair	Unorthodox	1 PBPb,1 SBP_bac_3,1 PAS_4,1 HisKA,1 HATPase_c,1 Response_reg,1 Hpt
Orphan	Unorthodox	1 HAMP,1 HisKA,1 HATPase_c,1 Response_reg,1 Hpt
Orphan	Unorthodox	1 HAMP,1 HisKA,1 HATPase_c,1 Response_reg,1 Hpt
Orphan	Unorthodox	1 HAMP,2 PAS,2 PAS_3,1 HisKA,1 HATPase_c,2 Response_reg,1 Hpt
Pair	Unorthodox	1 HAMP,2 PAS,2 PAS_3,1 HisKA,1 HATPase_c,2 Response_reg,1 Hpt
Orphan	Hybrid	1 Cache_1,1 PAS_4,2 PAS_3,1 HisKA,1 HATPase_c,2 Response_reg
Orphan	Unorthodox	1 CHASE,1 SBP_bac_3,1 PAS_4,1 HisKA,1 HATPase_c,2 Response_reg,1 Hpt
Orphan	Hybrid	1 Cache_1,1 PAS_4,1 PAS_3,1 HisKA,1 HATPase_c,2 Response_reg
Orphan	Hybrid	1 Cache_1,1 PAS_4,1 PAS_3,1 HisKA,1 HATPase_c,2 Response_reg