Dataset S2. Clusters of Orthologous Groups of CheA kinases, adaptors, and chemoreceptors from complete genomes of *Pseudomonadales.*
Clusters of Orthologous Groups of histidine kinase CheA

COG 1

COG 2
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Clusters of Orthologous Groups of adaptor (CheW-domain containing) proteins
COG 3

Ps.poa.2278-H045_19160-YP_007399390.1-1 [24, 2]
Ps.flu.1721-PFLU5747-YP_002875372.1-1 [24, 2]
Ps.tfl.1414-Ptfl_0327-YP_004472465.1-1 [10, 2]
Ps.tfl_472-Psyr_0485-YP_236601.1-1 [21, 2]
Pn.ptf._475-PF_262880.1-1 [23, 2]
Pn.pfl_467-PPh_4031-YP_004764010.1-1 [21, 2]
Ce.jap._1064-CJA_0072-YP_001980596.1-1 [55, 2]
Rh.sp.._1523-R2APBS1_0866-YP_007589264.1-1 [56, 2]
Ps.put.._2049-PPS_4831-YP_004704240.1-1 [59, 2]
Ps.syr.._713-PCA10_03490-YP_008100660.1-1 [59, 2]
Ps.flu.._735-Pfl01c_2153-YP_001204543.1-1 [60, 2]

COG 4

Ps.poa.2278-H045-REF_PRNA231107-X0969_18240-18240 [2, 4]
COG 11

Ps.den.2356-H681_00810-YP_007655584.1-1 [9, 11]
Ps.tol.7713-PCA10_13896-YP_008101726.1-1 [9, 11]
Ps.u.129-PL5S_07871-YP_002437786.1-1 [9, 11]
Ps.re.7936-SCV20065_00812-YP_002437786.1-1 [9, 11]
Ps.re.1955-NCISM2_00815-YP_005978462.1-1 [9, 11]
Ps.re.479-P40177-YP_2488671.1-1 [9, 11]
Ps.te.2232-20895-YP_002437786.1-1 [9, 11]
Ps.re.2035-PAD2_00896-YP_006480175.1-1 [9, 11]
Ps.re.7724-M602_00896-YP_008101344.1-1 [9, 11]
Ps.re.7892-PAIR_g1001-REF_DTMDDM01_PAIR_g1001-1 [9, 11]
Ps.re.7891-PAIS_g1001-REF_DTMDDM01_PAIS_g1001-1 [9, 11]
Ps.re.2363-GE05_00895-YP_007707082.1-1 [9, 11]
Ps.re.1816-PSPH_02757-YP_002437786.1-1 [9, 11]
Ps.re.7914-UT09_00910-REF_PRJNA224944_UT09_00910-1 [9, 11]
Ps.re.1913-PAM18_0177-YP_005972768.1-1 [9, 11]
Ps.re.1301-PB13_0468-YP_004146546.1-1 [9, 11]
Ps.re.2266-XOC_2284-YP_006268593.1-1 [9, 11]
Ps.re.451-XCC1871-NP_637236.1-1 [9, 11]
Ps.re.2353-XCWI_02596-YP_007650467.1-1 [9, 11]
Ps.re.777-XOC_02596-YP_007650467.1-1 [9, 11]
Ps.re.1502-XACM_1915-YP_004851487.1-1 [9, 11]

COG 12

Ps.re.451-XCC1888-NP_637253.2-1 [18, 12]
Ps.re.777-XOC_2696-YP_451791.1-1 [18, 12]
Ps.re.1502-XACM_1937-YP_004851508.1-1 [18, 12]
Ps.re.2353-XCWI_02486-YP_007650467.1-1 [18, 12]
Ps.re.452-XAC1906-NP_642232.2-1 [18, 12]
Ps.re.266-XOC_2306-YP_005628611.1-1 [18, 12]

COG 13

Ps.r.1414-P40177-YP_008121535.1-1 [29, 13]
Ps.r.1382-MDS_0533-YP_004303216.1-1 [29, 13]
Ps.r.184-PSEDBR_02430-YP_004303216.1-1 [32, 13]
Ps.r.1013-PSF113_3580-YP_005268685.1-1 [32, 13]
Ps.r.7926-U771_11590-REF_PRJNA225946-U771_11590-1 [43, 13]

COG 14

Az.d.2456-AvCA_24350-YP_007893407.1-1 [25, 14]
Az.d.306-AvCA_24350-YP_007893407.1-1 [25, 14]
Az.d.2457-AvCA_24350-YP_007893407.1-1 [25, 14]

COG 15

Ps.r.7926-U771_27365-REF_PRJNA225946-U771_27365-16-1 [35, 15]
COG 16
Ps.put.2052-TIE_2097-YP_006532737.1-1 [40, 16]

COG 17
Rh.sp._1523-RZAPBS1_2986-YP_007591276.1-1 [41, 17]

COG 18
Ps.put.1301-Psuet_1473-YP_054146551.1-1 [44, 18]

COG 19
Rh.sp._1523-RZAPBS1_2974-YP_007591284.1-1 [47, 19]

COG 20
Ps.put.2052-TIE_2096-YP_006532736.1-1 [49, 20]

COG 21
Ps.put.2052-TIE_2095-YP_006532735.1-1 [57, 21]

COG 22
Rh.sp._1523-RZAPBS1_3016-YP_007591286.1-F6-1 [61, 22]
Clusters of Orthologous Groups of Chemoreceptors

Ps.men.1382-MDS_3333-YP_004381116.1--40H[1, 1]
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Ps.stu.1925-PSTM_0817-YP_005937469.1--40H[1, 1]
Ps.stu.2031-A458_17435-YP_006459135.1--40H[1, 1]
Ps.stu.2049-PSJM300_16265-YP_006525669.1--40H[1, 1]
Ps.stu.822-PST_0874-YP_001171413.1--40H[1, 1]
Ps.poa.2278-H045_21625-YP_007399883.1--40H[1, 1]
Ps.stu.1468-PSTAB_0766-YP_004713136.1--40H[1, 1]
Ps.stu.2238-Psest_3509-YP_007241628.1--40H[1, 1]
Ps.den.2356-H681_05810-YP_007656582.1--40H[1, 1]
Ps.res.7713-PCA10_12160-YP_008101553.1--40H[1, 1]
Ps.men.863-Pmen_3309-YP_001188794.1--40H[1, 1]
Ps.aer.1129-PLES_46881-YP_002442269.1--40H[1, 1]
Ps.ful.1414-Psefu_0976-YP_004473048.1--40H[1, 1]
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Ps.put.1467-PPS_4284-YP_004703699.1--40H[1, 1]
Ps.put.2236-B479_21545-YP_007231141.1--40H[1, 1]
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Ps.mon.7931-X970_20725-REF_PRJNA231108:X970_20725--40H[1, 1]
Ps.syr.490-PSPTO_1061-NP_790897.1--40H[1, 1]
Ps.ent.821-PSEEN1154-YP_606863.1--40H[1, 1]
Ps.put.7712-PP4_35390-YP_008114576.1--40H[1, 1]
Ps.syr.472-Psyr_0906-YP_234002.1--40H[1, 1]
Ps.syr.556-PSPPH_3475-YP_275629.1--40H[1, 1]
Ps.sp..2198-PputUW4_04319-YP_007031316.1--40H[1, 1]
Ps.put.827-PputW619_1011-YP_001747885.1--40H[1, 1]
Ps.put.429-PP_1371-NP_743530.1--40H[1, 1]
Ps.put.869-PputGB1_1880-YP_001668119.1--40H[1, 1]
Ps.pro.475-PFL_4784-YP_261865.1--40H[1, 1]
Ps./f_lu.303-P/f_l01_4431-YP_350159.1--40H[1, 1]
Ps./f_lu.1633-PSF113_0199-YP_005205625.1--40H[1, 1]
Ps.put.1896-PPUBIRD1_4191-YP_005931974.1--40H[1, 1]
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Ps.aer.2365-G655_22165-YP_007711272.1--40H[1, 1]
COG 4
COG 6
Ps.1721-PELI2125-YP_002871741.1--40H [13, 15]
Ps.pot.475-PELI_4011-YP_261108.1--40H [13, 15]
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Ps.pot.02198-PotuW4_01615-YP_007028625.1--40H [13, 15]
Ps.pot.301-Potb1_3708-YP_349467.1--40H [13, 15]
Ps.hsa.1384-PSEBR_a3387-YP_004255281.1--40H [13, 15]
Ps.pot.556-PPSPH_3125-YP_275295.1--40H [13, 15]
Ps.pot.701-PELC940_c04906-YP_000800337.1--40H [13, 15]
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Ps.pot.1382-MDS_2760-YP_004386543.1--40H [13, 15]
Ps.pot.822-PST_2595-YP_001173447.1--40H [13, 15]
Ps.pot.2238-Potc_1336-YP_007239524.1--40H [13, 15]
Ps.pot.2238-Potc_1337-YP_007239525.1--40H [13, 15]
Ps.pot.1382-MDS_1560-YP_084370343.1--40H [13, 15]
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COG 16

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Ps.pot.0186-PSBAP_4857-YP_001350193.1--Uncat [14, 16]
Ps.pot.7724-M062_22628-YP_008134922.1--Uncat [14, 16]
Ps.pot.2365-G055_20805-YP_007711152.1--Uncat [14, 16]
Ps.pot.2035-PADK2_22355-YP_006484438.1--Uncat [14, 16]
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Ps.pot.7923-T223_23869-REF_PRBNA225187-T223_23869--Uncat [14, 16]
Ps.pot.1129-PLES_46701-YP_060242251.1--Uncat [14, 16]
Ps.pot.478-PA4290-NP_252890.1--Uncat [14, 16]
Ps.pot.7892-PA1R_gg2187-REF_DMTMMUP1R_gg2187--Uncat [14, 16]
Ps.pot.7914-U769_23120-REF_PRBNA225944-U769_23120--Uncat [14, 16]
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Ps.pot.495-PA14_55750-YP_782635.1--Uncat [14, 16]
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Ps.pot.1955-NCCGM_1317-YP_005979573.1--Uncat [14, 16]
Ps.pot.301-PBB1_3326-YP_349055.1--Uncat [14, 16]
Ps.pot.2198-PotuW4_01939-YP_007028490.1--Uncat [14, 16]
Ps.pot.490-PSPTO_3480-NP_792360.1--Uncat [14, 16]
Ps.pot.2278-HR45_10745-YP_007397710.1--Uncat [14, 16]
Ps.pot.2031-CG80_19018-YP_006459448.1--Uncat [14, 16]
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Ps.pot.472-Potb1_23603.1--Uncat [14, 16]
Ps.pot.863-Potc_4307-YP_001899461.1--Uncat [14, 16]
Ps.pot.1384-PSEBR_a3344-YP_004554665.1--Uncat [14, 16]
Ps.pot.475-PFL2_2597-YP_258784.1--Uncat [14, 16]
Ps.pot.556-PPSPH_a3381-YP_275343.1--Uncat [14, 16]
Ps.pot.822-PST_0477-YP_001170252.1--Uncat [14, 16]
Ps.pot.1468-PSTAB_0513-YP_00472883.1--Uncat [14, 16]
Ps.pot.1925-PSTA_0530-YP_005979792.1--Uncat [14, 16]
Ps.pot.821-PSEEN42-NP_68968.1--Uncat [14, 16]
Ps.pot.1721-PFLU257-NP_002872174.1--Uncat [14, 16]
Ps.pot.2238-Potc_3799-YP_007241904.1--Uncat [14, 16]
Ps.pot.2049-PSM001_02315-YP_005522901.1--Uncat [14, 16]
Ps.pot.1382-MDS_4097-YP_004382480.1--Uncat [14, 16]
Ps.pot.1414-Potb1_0223-YP_004472302.1--Uncat [14, 16]
Ps.pot.7713-PCA10_31338-YP_008138470.1--Uncat [180, 16]

COG 17

Ps.pot.2198-PotuW4_00716-YP_007027728.1--40H [15, 17]
Ps.pot.1721-PELI20100-YP_002870464.1--40H [15, 17]
Ps.pot.02198-PotuW4_4403-YP_001751252.1--40H [15, 17]
Ps.pot.1633-PSF113_0882-YP_005206036.1--40H [15, 17]
Ps.pot.7892-PA1R_gg2421-REF_DMTMMUP1R_gg2421--40H [15, 17]
Ps.pot.2365-G055_23235-YP_007711485.1--40H [15, 17]
Ps.pot.2031-CG80_03395-YP_006456338.1--40H [15, 17]
Ps.pot.2356-HR81_04905-YP_007656417.1--40H [15, 17]
Ps.pot.7891-PA15_gg2421-REF_DMTMMUP15_gg2421--40H [15, 17]
Ps.pot.1913-PAM18_4611-YP_005977194.1--40H [15, 17]
Ps.pot.822-PST_3624-YP_001174994.1--40H [15, 17]
Ps.pot.1955-NCCGM_1079-YP_005979331.1--40H [15, 17]
Ps.pot.301-PBB1_6788-YP_346521.1--40H [15, 17]
Ps.pot.816-PSBAP_5137-YP_001350473.1--40H [15, 17]
COG 20

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