S11 Fig. Multiple sequence alignment of CheW proteins and CheV-W domains from the non-redundant *Enterobacteriales* genome set. Each sequence tag contains the first two letters of the genus, the first three letters of the species and the organism id in the MIST database, followed by the locus and accession number. The tag also includes the chemotaxis class for CheV (e.g. F7).

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Ra.aqu.1678-Q7S_08675-YP_005401542.1       FLIFTLG-------DEEYGIDILKVQEIRGYDQVTRIANTPAFIKGVTNLRGVIVPILDLRVKFAQEDVIYNEN
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Mo.mor.2189-MU9_1761-YP_007505180.1        -LIFTLG-------EEEYGIEILKVQEIRGYEQVTRIANTPDFIKGVTNLRGVIIPIIDLRVKFSHQNVTYNDN
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Pa.ana.1905-PAJ_0248-YP_005933124.1-F7     LLLFRLGSDQLKGKSELFGINVFKLREIVPMPPITKAAGMRSPLLGMASIRGQFIPVIDLPAVAGCVPET--GL
Pa.vag.184-Pvag_0292-YP_003929954.1-F7     LLLFRLGSDQLKGKSELFGINVFKLREIVPMPTITKAAGMRSPLLGMASIRGQFIPVIDLPAVAGCVPET--GL
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Ed.tar.1771-ETAF_1248-YP_005698854.1        TVVIVLNFSQRVVGIVVDGVSDVLSLSADQIRPAPEFAVTLSTEYLTGLGALGE------RMLILVDIEKLLSSEE
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Es.col.1836-Y75_p1863-YP_490149.1           TVVIVLNLGQRVVGIVVDGVSDVLSLTAEQIRPAPEFAVTLSTEYLTGLGALGD------RMLILVNIEKLLNSEE
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Mo.mor.2189-MU9_1761-YP_007505180.1         TVVIVVNLKDRVVGIVVDGVSDVLVLKDEQIAPAPDFAVTLSTKYLTGLGTIGD------RMLILVDIEKLLSSEE
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Cr.sak.579-ESA_02190-YP_001438275.1-F7      NLLLVTEYARSTQAFAVESVENIIRLDWSQVHTA---ESGVSSRNITSIARLDSDNQSN-ELALVLDVEQILYD--
Cr.tur.6-CTU_17860-YP_003210149.1-F7        NLLLVTEYARSTQAFAVESVENIIRLDWSQVHTA---ESGVSSRNITSIARLDSDNQSN-ELALVLDVEQILYD--
En.638.865-Ent638_2819-YP_001177535.1-F7    NILLITEYARSVQAFAVESVENIMRLDWKQVHAA----TAVSGRYITSIACLDENTDTN-DLAMVLDVEQILYD--
Er.bil.197-EbC_11920-YP_003740575.1-F7      NLILVTEYARSTQAFAVESVEDIVRLDWSQVHAA---EAGVSSRNITSIACLNTDKDNNTTMALVLDVEQILHDV-
Sa.bon.1474-SBG_2102-YP_004730935.1-F7      NILLITEYARSVQAFAVESVENIMRLDWKQVHTA---EKAVNGRYITSIACLDEDKETN-NLALVLDVEQILYD--
Es.fer.1173-EFER_0899-YP_002382071.1-F7     NILLITEYARSVQAFAVESVENIVRLDWQHVHTA---EKSINGRYITSVASVDD----T-SLAMVLDVEQILYD--
Sa.ent.407-STM2314-NP_461256.1-F7           NILLITEYARSVQAFAVESVENIMRLDWQQVHTA---EKAVNGRYITSIACLDDNKETN-NLALVLDVEQILYD--
Pe.atr.485-ECA1568-YP_049670.1-F7           NILLITEYARSTQAFAVESVDDIVRLEWSQVLTA---EAGVSSSYITSIARLDTDKDSN-RLALVLDVEQIL----
Ci.kos.578-CKO_00521-YP_001452113.1-F7      NILLITEYARSVQAFAVESVENIMRLDWQQVHTA---EKAVNGRYITSIACLDEDKETN-NLALVLDVEQILYD--
Sa.ent.404-STY2545-NP_456857.1-F7           NILLITEYVRSVQAFAVESVENIMRLDWQQVHTA---EKAVNGRYITSIACLDDNKETN-NLALVLDVEQILYD--
Ci.rod.62-ROD_26761-YP_003366207.1-F7       NILLITEYARSVQAFAVESVENIMRLDWQQVHTA---EKAVNGRYITSIACLDEDKETN-NLALVLDVEQILYD--
Ra.aqu.1678-Q7S_09145-YP_005401634.1-F7     NILLVTEYARSTQAFAVESVDDIVRLEWSQVLAA---EAGVKSRNITSIARLDSDKSSN-RLALVLDVEQILHD--
Rahnel.1320-Rahaq_1865-YP_004212610.1-F7    NILLVTEYARSTQAFAVESVDDIVRLEWSQVLAA---EAGVKSRNITSIARLDSDKSSN-RLALVLDVEQILHD--
Pantoe.297-Pat9b_0852-YP_004114732.1-F7     NLLLVTEYARSTQAFAVESVENIVRLDWNQVHTA---EAGIGSRNITSIACLDSDGESN-NLALVLDVEQILYD--
Pa.ana.1905-PAJ_0248-YP_005933124.1-F7      NLLLVTEYARNTQAFAVESVENIVRLNWSQVHTA---EAGIGGRNITSIACLDDDEQKS-NLAMVLDVEQILYD--
Pa.vag.184-Pvag_0292-YP_003929954.1-F7      NLLLVTEYARNTQAFAVESVENIVRLDWSQVHTA---EAGIGGRNITSIACLDSDKQSN-ELAMVLDVEQILYD--
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