Supplementary Figure S3. Secondary structure of “PilA-C” proteins from Desulfuromondales species and other bacteria that possess e-pilin genes. The location of alpha helices (red H) and beta strands (yellow E) was predicted with Jpred 4 (Drozdetskiy et al, 2015). Signal peptides (green background) were identified with PSORTb v. 3.0.2 (Yu et al., 2010) and SignalP v. 4.1 (Petersen et al., 2011). Transmembrane helices (turquoise background) were predicted with TmPred (Hofmann & Stoffel, 1993), TMHMM (Krogh et al, 2001), and HMMTOP (Tusnady & Simon, 2001).

*Desulfuromusa kysingii (*Ga0056096\_02701): Hydropathicity is -0.086

MKKIIILIAVCMIIPSIGMAAVTLGSGTSISDNGDNPTNELSLSPGVFLSYDSDGDDSYALTGANNKGSMCYAVMSGDQGVYQQSIEVADSSDISDTNIIEADDSVDYPDDDDWTQVGG -HHHHHHHHHHHHHHHHHHHHEE-----------------EE----EEEEE-------EEEE-------EEEEEE-----HHHH-EE-----------EE-------------------

*Geopsychrobacter electrodiphilus (*D888DRAFT\_2041): Hydropathicity is 0.213

MKKILIITIFAVFMTSSAFAATNAITFPTTFDKANTGKTVYGDSTDASATNVNAALIGKTSSGVGCSIKSTTLGYAAVTQHLNGTKAFASSNDSTSIYSKVVTAGTATSNFTNIGTTDFASWTAM

--HHHHHHHHHHHHH---------EE------------EEE------------HHHHHHHH---EEEEE-----EEEEEE--------------HHHHHHHH-----------------------

*Pelobacter seleniigenes (*N909DRAFT\_0005): Hydropathicity is 0.234

MKKIVVLTFCLFLVLPVSGVFAAGDVTSSGGQLTLGSTAGASTNPQLIIGLSPKVVARYVTDGTDTVTAQWYAIGTVHPGGNLGYGTAQNLNNIYFMKYETGAATSTILNELPTTANSASDWSTSWDM

--HHHHHHHHHHHHHH----------------EEE-----------EEEE----EEEEEE------EEEEEEEEEEE----------------EEEEE------HHHHHHH-----------------

*Geobacter bemidjiensis (*Gbem\_2589): Hydropathicity is 0.095

MKKILAAMVVTLSFAGTASAGTLVTAGSGYAIRGGADAATASAAPTPLIKFSTGVWGLINSTPDTTAKTSTGYVIATRHTTGSKDFGTASNRTNIFWKQASAITASVSASQALANDVGSDDETGATFAAGKGWT-HHHHHHHHHHHH---------EEE----EEEE----------------E------EEE-------------EEEEEE--------EE------EEEEHHH---HHHHHHHHHH-----------EEEE-----

*Geobacter bremensis (*K419DRAFT\_00800): Hydropathicity is 0.397

MKKMALLSSLVVFASTAAFAAPLATHVPTTGGAVAIYGGTGAAEALAAPTSLVKTSTGVNGLVDYPGNTAYLIITKHTTGSKVFGTCNGVNNIYWRQVTSGTLATTMLTGITSGSAATSSFVGNGWTSY

--HHHHHHHHHHHHHHHHHHH----EEEE---EEEEE-----------------------EEEE-----HHEHHHH----------------EEEHHHHHHHHHHHH------------EEE-------

*Geobacter sp. OR-1 (*WP\_041974245): Hydropathicity is 0.455  
MKKIIALTALIVISASSYAAAGALATNTVSNAGTAIYGGADATGAGAASSPLFKLSTGVSTIINFDAAGVGYAVFTKHVKGTKVFGTAYDSTAISYFTEAPGTLTTTNTGSATAVPSGWTSM

--HHHHHHHHHHHHHHHHH--------------EEEEE----------------------EEEE-------EEEEEE-----EEEE-------EEEEEE-----------------------

*Geobacter sp. M18 (*GM18\_2491): Hydropathicity is 0.163

MKKIIALSAVVVMLTASLASATSLATGGVSGESKTIYGGISTGDSSGTSATLIGKLSKSVKLGVAYTSGGYALDTKHSSGNTRYGTAHDATAIYKQEIGTTDLAAPTAASYSAFSTWTAM

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*Geobacter sp. M21 (*GM21\_1637): Hydropathicity is -0.051

MKKIIALSAVAVLLTSSLASAAALTGGVSDESKSIYGGTTTDATTASATLIGKLSKNVKLGANYDTGGYALETRHSSGNTRYGTAFDATAIYKQEGATAVEKPSTTSYSSFSTWTAM

--HHHHHHHHHHHHHHHHHH------------EEEE-----------HHHHHHH----EEEEEE----EEEEEE----------------EE-------------------------

*Pelobacter propionicus (*Ppro\_1657): Hydropathicity is 0.216

MYGDKSTATAATAALIGKTSTGVSVGLLTSSLGYAVVTQHKNGTKAFGSSYDSTSVFSSTVTEGTALLTVPTAITSADFTGTWTSM

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*Geobacter argillaceus (*Ga0052872\_01799): Hydropathicity is 0.112

MKRIISLVALMLIVTSGSAFAAAFTSGSTNTNGTGQSIYGGVDATTAAGTTAPMLGRLSKGVQFGAAFSNTTYAHTTKHSGGTKMYGTAQNSTAIYSQDATAIAAPSTSDANAFATGWTAM

--HHHHHHHHHHHHHHHHHHHEEEE-----------EEEE-----------HHHHHHHH---EEEEEE----EEEEEE-----EEE--------E--------------------------

*Geobacter argillaceus (*Ga0052872\_01801): Hydropathicity is 0.256

MKRIISLVALMLIVTSGSAFATAFATGATDTNGTGETVYGGVDATTAAGTTAPVLGRLSKGVHFGAAFSATTYALTTKHSGGTKMYGTAQNSTAIYSQDATAIAAPSTSDANAFATGWTAM

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*Desulfuromonas sp. TF (*DTFDRAFT\_03629): Hydropathicity is 0.468

VKKISILAVLFVFIACNVSFAAALASGGTTTTTGLQVFGGVDADDAAGSSSVLLGKMSKGVYFGAAYTTGGYACATKHTSGSKAYGTAHDSTAIYFQDIGTAALSTVTPSAASNTAFGSAWTAM

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*Geoalkalibacter ferrihydriticus (*Ga0056053\_00658): Hydropathicity is -0.011

MKKMVVLLAAFVLLFSGHAFGFTKADDDKQITCGTGGPTVPLSPRVEALYLGTATTYAVATRNVQGTRTFGTAHNETGIFWAEGISDDVKPTLNTEFSSDATWNQL -HHHHHHHHHHHHHH--------------EEEE-------------EEEEE-----EEEE-------EEE-------EEEE-------------------------

*Geoalkalibacter subterraneus (*WP\_040199522): Hydropathicity is -0.291

MKKTLFSIITLGLLLPGSVFAVTHTIGGDGDKQSAYLGDKTGELFRVSTNVVLEINSTTADYAATSGHLQGTKQYGTTSRFNAIFEGAKDKGSGPTEPKSEVALDTSVFTEFPPETDTNGE

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*Desulfuromonas thiophila (*Ga0056074\_12311): Hydropathicity is -0.191

MKKALFLLLILAFAGTAFAAYSEDATATLGEGDNSLKVKLSNQVKLDYAENGDGDTFVIAAYHDKGTRTFMSSSEDASIYYGEETKITMPDAPDVGTSIGTTDDFDKTL

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*Geobacter metallireducens (*Gmet\_1400): Hydropathicity is -0.198

MKKKIFLTGLCFLSIGSVAFAASKDVTGSGEIGGSNSTPKLAIQTSNQVTLTYDGGTGHTYGIATLHAKGTRKYASTSNDTKIYYNDNTATAAPSAPVGTATIGGSTNWKNAL

---EEHHH-HHHHHH--HHHH------------------EEEEE----EEEEE------EEEEEEEE-----E--------EEEE---------------EEE----------

*Geobacter lovleyi (*Glov\_2095): Hydropathicity is 0.224

MAKKNMLKLAVVVVLSMVAASASYAATLTLSGATSVGGSSFSSSNKVSAYYVSDSGVSTGFAGTAYGIAAAHGQGDKAIASNQSDAKLYFKTTTPGNATSVASAIATNTSFTGTDWTSM

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*Geobacter sulfurreducens (*GSU1497): Hydropathicity is -0.388

MKKIITIVAMLLAMQGIAIAAGKIPTTTMGGKDFTFKPSTNVSVSYFTTNGATSTAGTVNTDYAVNTKNSSGNRVFTSTNNTSNIWYIENDAWKGKAVSDSDVTALGTGDVGKSDFSGTEWKSQ

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*Geobacter pickeringii (*Ga0069007\_111761): Hydropathicity is 0.272

MKNLMVLSFVSVLTIAVGAAAYAAPITTSTTLGTTTTFTPSSNVQVDAWASNSAYAATSQHLSGNRIFFGMNGDSKIYFNTKTAGSQASVSIGSAGAPATTVPTGYTTL

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*Desulfobotulus alkaliphilus (*LZ24DRAFT\_00005): Hydropathicity is -0.322

MKKIWLYMLTAFAAVALSGMAYADTVTTGEGEKIEIGAGHFADDDGIANADFEFQPSPSVSMSVNAERHYFALTAMSVSAKVPQGMVYGIFSDTQGYYQRAKTDEDDEAPSGEVGDLDGEGDVFEDEDEWTYMG-HHHHHHHHHHHHHHHH---------------EEEE------------------------EEEE----EEEEEEEEE--------EEEEEE------EE-----------------------EE-----EEEE-

*Flexistipes sinusarabici (*Flexsi\_2289): Hydropathicity is 0.190

MQKISLIHHHKEVKMRKITISIIAICLILMGSMVFAAGTDISTITGINTQLSDKVKGVYFANINASGDYVDFAISTANTQGDEVYATGNFVSKIFCKNIAGDTYVSTDLLQSVSNYNSSASFTSWTCK

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*Desulfobacterium autotrophicum (*HRM2\_27710): Hydropathicity is 0.152

MNSLIKIAVISVIITGLSGFAYAGTAVQTGGAGDTVTFAGTKGLATLSFTPSGNTIINGTSTALTYDITSGCSKTDMSNGMEYGMSQDITGYYQKTQGAADAAPPATITPANWTLMGSSS

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*Hippea maritima (*Hipma\_0736): Hydropathicity is 0.053

MKKILALFMSVCSMAFFASGVYAFTLGGTDTTDINLSANVEAGYYGGGDGSLYIADTYNPKGNGKVYGTGSAYSKIYYTTTTSNFVSGSNASGLSSVNFSGWSTLGE -HHHHHHHHHHHHHHHHHH-HEEEE--------EEEEEE------------EEEEE--------EEEE-----EEEEEE---------------EEEEE--------

*Hippea alviniae (*G415DRAFT\_0873): Hydropathicity is -0.287

MKKNVFLGIIAISLLFATFSTTARAKLFQSGSTIVSGDTFTPSQGVSLVIVSNSNAYTMESDHKQGRYKYATTNNDEVKKAKCTNDPCGTEIDGDKPTAGTLPSWTWVQ

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*Deferribacter desulfuricans (*DEFDS\_1271): Hydropathicity is -0.145

MRKLIFLIVILSFASLLFAGDFTLGSTDNETIKLSANVSADYDADTNGNHYVAGTMSSKGTKKYGTADTESVIYYDECTGNDCADDNVTFSGYSSGLSTIQGWTPME --HHHHHHHHHHHHHHHHH------------EEEEEE------------EEEEE----------------EEEEEE------------EE-----------------