Fig. S1A

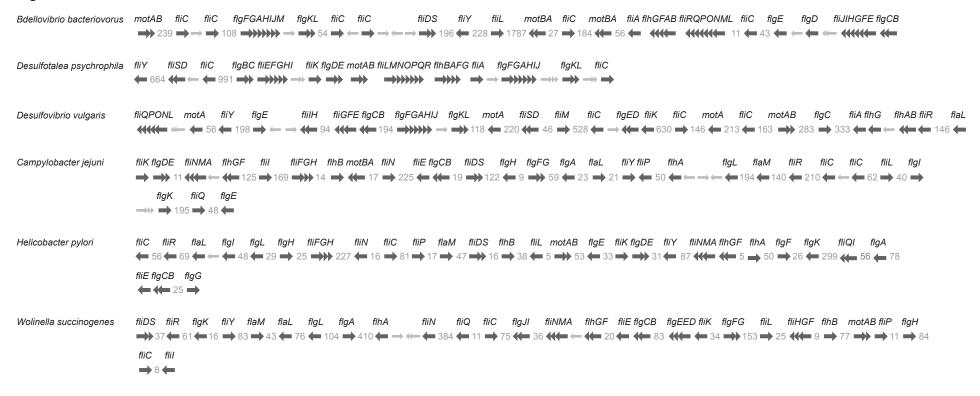


Fig. S1B

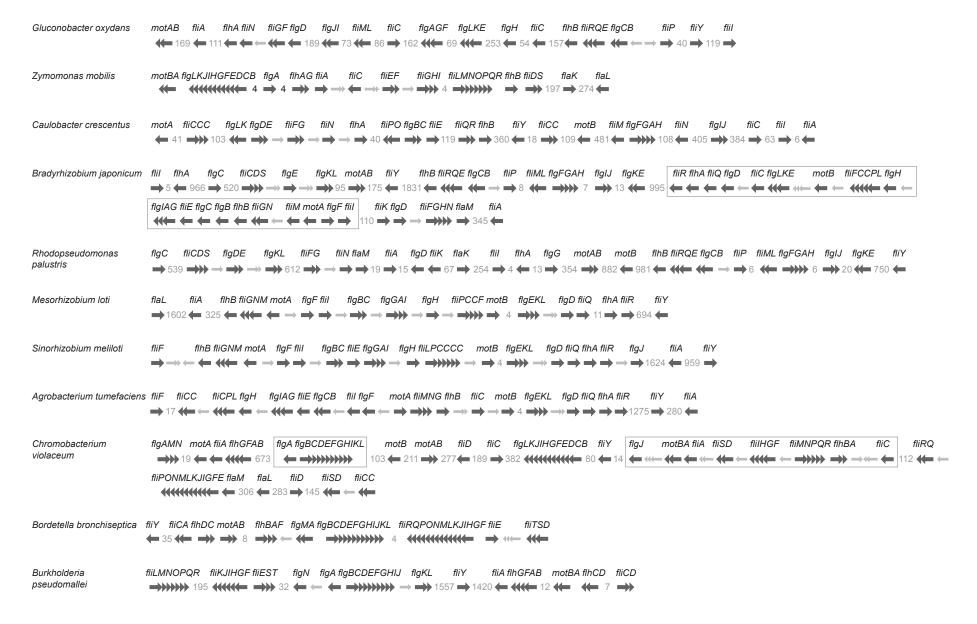


Fig. S1C

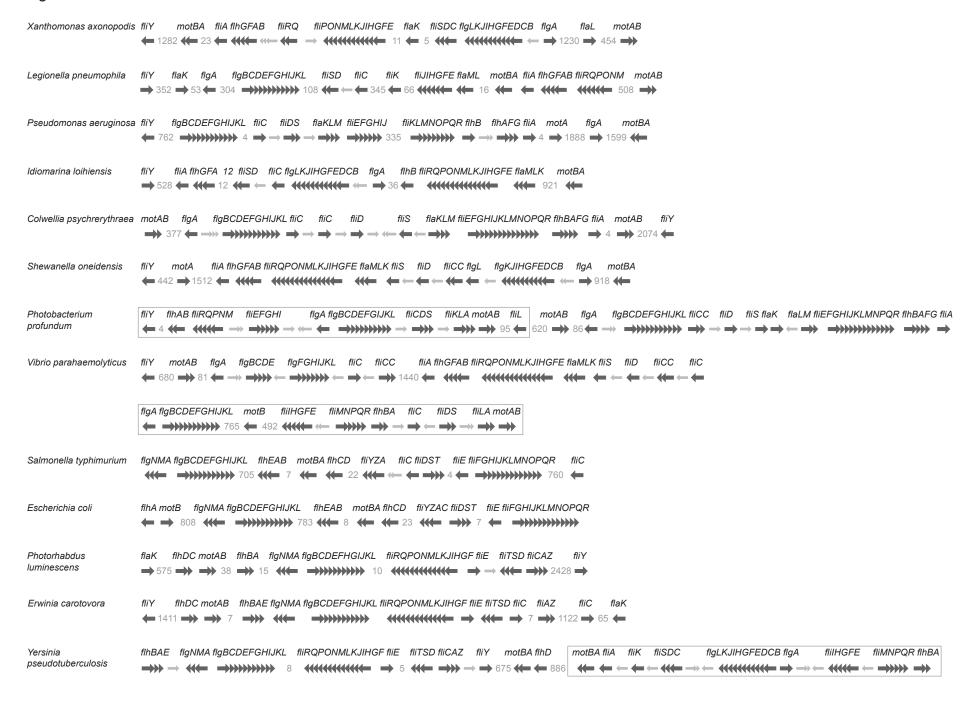


Fig. S1D

Thermoanaerobacter tengcongensis	flgFGJ flgKL fliC fliDS fliY motAB fliA flhGFAB fliRQPO fliNML flgE flgD fliK flilHGFE flgCB  >>>> 298 ->>> ->> 4 ->> ->> 28 ->> 816 6 6
Clostridium tetani	fliY flgGF fliA flhGFA flhBfliR fliP fliL motBA flgE flgD fliKJIHGFE flgCB fliC fliC fliDS flgLK fliNM flgJ  → 1012 ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ←
Listeria innocua	$fliPQR flhBAFG motAB fliC flgDE fliMN flgKL fliDS flgBC fliFG fliI fliA flgJ fliY \implies \implies$
Bacilus subtilis	fliY motBA flgBC fliEFGHIJ fliK flgDE fliLMN fliPQR flhBAFG fliA motA flgJ fliSD fliC flgLK flgG $\leftarrow$ 1006 $\leftarrow$ 248 $\Rightarrow$
Salinibacter ruber	fliA flhG flhAB fliRQP fliNM motBA flgE flgD fliHGFE flgCB fliDS fliCC flgLK flgIH flgGF $\leftarrow$
Rhodopirellula baltica	$fliPQR flhB$ $fliD$ $fliC$ $fliS$ $fliC$ $flgI$ $fliG$ $flgL$ $fliC$ $fliM$ $flgBC$ $fliEF$ $fliA$ $flhFA$ $motAB$ $fliNO$ $flgK$ $flgJIHAGF$ $fliN$ $fliJIHG$ $flgED$ $\Rightarrow 1152 \leftarrow 175 \Rightarrow 4 \Rightarrow 405 \Rightarrow 413 \leftarrow 290 \Rightarrow 35 \leftarrow 721 \leftarrow 193 \Rightarrow 49 \Rightarrow 475 \leftarrow 491 \Rightarrow 3734 \leftarrow 819$
Leptospira interrogans	$fliG \ \ flaK \ \ fliE flgCB \ \ motB \ \ motA \ \ fliY \ \ flgF \ \ fliG \ \ fliC \ \ fliM \ \ fliS \ \ \ fliC \ fliHGF \ \ fliIJ \ \ fliA \ \ flhGFAB fliRQPON \ flgJIHAG \ \ flgED \ \ \ fliD \ \ fliL motBA \ \ flgLK \ \ \rightarrow 119 \ \rightarrow 198 \ \leftarrow 150 \ \leftarrow 150 \ \leftarrow 163 \ \leftarrow 151 \ \leftarrow 9 \ \rightarrow \rightarrow 49 \ \rightarrow 11 \ \rightarrow 198 \ \leftarrow 136 \ \rightarrow \leftarrow 170 \ \leftarrow \leftarrow \leftarrow \leftarrow 49 \ \leftarrow \leftarrow 49 \ \leftarrow 49 \ \leftarrow 603 \ \leftarrow 120 \ \leftarrow \leftarrow 730 \ \leftarrow 730 \$
Borrelia burgdorferi	fliC fliD flgKL fliG flhGFAB fliRQP fliNM motBA flgED fliK flilHGFE flgCB fliS fliA flgI flgGF  ← → ← 31 → 38 ← 47 ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ←
Treponema denticola	fliQR flhBA fliS fliC flgFGJ flgBC fliEFGHIJ fliG fliD fliC flaL fliY flgKL fliA flhGF fliP fliNML motBA flgED $\implies$ 63 $\leftarrow$ 876 $\leftarrow$ $\rightarrow$ $\implies$ 201 $\implies$ 185 $\leftarrow$ $\leftarrow$ $\leftarrow$ $\leftarrow$ 489 $\leftarrow$ 119 $\implies$ 257 $\implies$ 328 $\leftarrow$ $\leftarrow$ $\leftarrow$ 73 $\leftarrow$ $\leftarrow$ $\leftarrow$ $\leftarrow$ $\leftarrow$
Aquifex aeolicus	flaK flaL fliG flgAG motBA fliFE flgCB flhAFG fliA fliM fliN fliH flgKL flgIH flgD flgE fliL fliP fliRQ fliC fliDS flhB flgF $\leftarrow$ 4 $\leftarrow$ 293 $\leftarrow$ 114 $\leftarrow$ 116 $\leftarrow$ 119 $\leftarrow$ 20 $\rightarrow$ 14 $\leftarrow$ 212 $\leftarrow$ 35 $\leftarrow$ 46 $\rightarrow$ 28 $\leftarrow$ 102 $\leftarrow$ 37 $\leftarrow$ 23 $\leftarrow$ 28 $\rightarrow$ 37 $\leftarrow$ 22 $\rightarrow$ 6 $\rightarrow$ 22 $\rightarrow$
Thermotoga maritima	$flgLK$ fliC flilHGF fliY flgJ fliK flgDE motAB fliM fliN fliQP fliC fliA flhGFAB fliR fliD fliS flaL flgB flgC fliE flgIHAGF $47 \Rightarrow 85 \iff 38 \iff 38 \implies \implies \implies \implies \implies 16 \iff 59 \iff 142 \iff 42 \iff 44 \iff 54 \iff 174 \implies 4 \iff \implies 171 \iff 64 \iff 64 \implies 174 \implies 4 \iff 64 \implies 174 \implies 4 \iff 64 \implies 174 \implies 4 \implies 174 \implies 174$

<sup>\*</sup> Two genes, flhB and fliR, are fused in C. tetani.