

Figure S1

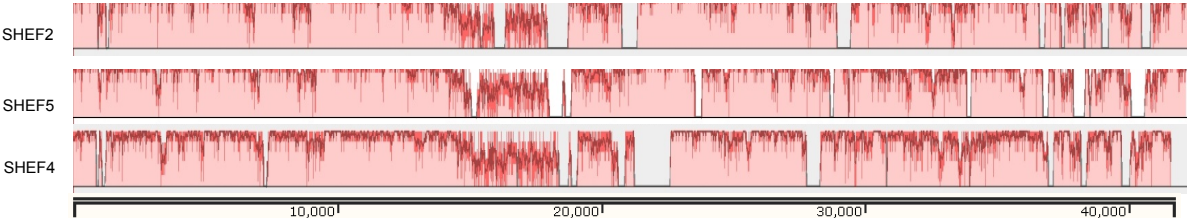
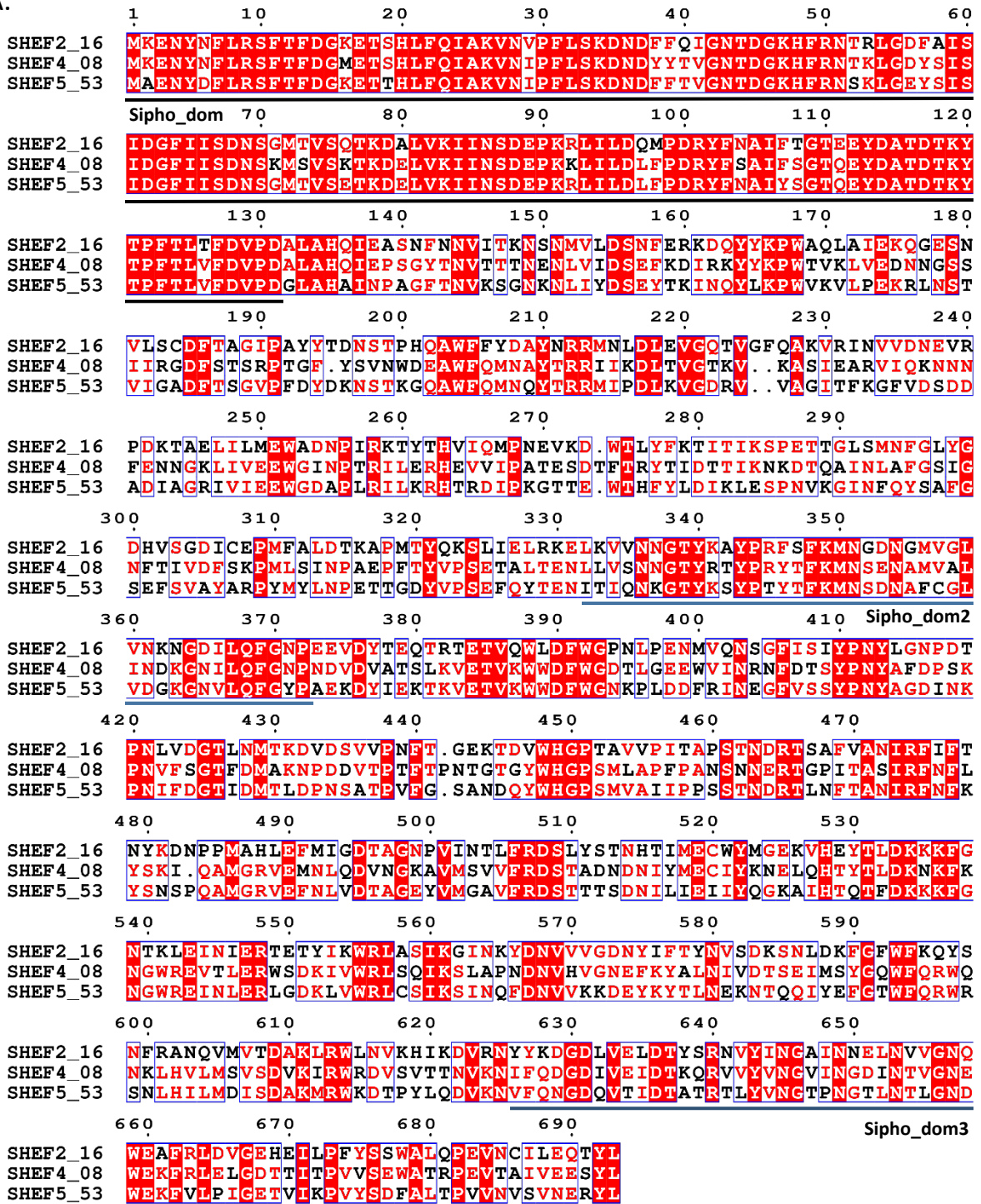


Figure S2

A.



B.

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      1      10      20      30      40
SHEF2_17  ....MDFYITDRTFKLLDIVSTSGGTQFKVTSSTEDTISLATAARRMSLDVVS
SHEF4_09  MGGVIATLNGGNKMDFYVTDREFTLKTTITSTEGDITFKVVS SKDTIDLSASRRLLDIDIS
SHEF5_52  ....MDFYITDREFRLETVISTDGDITLFKVIS AQDVS TLETSRRMSMDIS

      50      60      70      80      90      100
SHEF2_17  FTPETSALAKDVFKVGNVLYKDLNGKHEWMTILESTHNPLTQTRSMLEEDASLDLLNH
SHEF4_09  FTKDTTIDKAKYFKVGNLYLYKDLNKKFIWATVMKATHDPLNQVRSLELEVASLDLLNET
SHEF5_52  FTPETTGLAKDFFKVGNVLFIDLNGKHEWMTILKSTHNPLTQVRLTECEDAGLDLLNET

      110     120     130     140     150     160
SHEF2_17  VGKHKETKPPPIKYYLEIFSSSGFKVGINEISGLTRALEWDSGATALERIQSVATQFDN
SHEF4_09  VPEYSADKPYTAKEYIEMFTWDSGYIVGINEIPTLKRRLKWEVSMTALERIQSVATQFDN
SHEF5_52  VSTYKADKAYNVAHYINKFTYDSGFKIGVNEISKLTRKLEWEGEATALERIQSVATQFDN

      170     180     190     200     210     220
SHEF2_17  AELDFRFTFKGNELTGRYIDIKKKRGTDEVHTLYVNKDINSITTKEDIYQLVNAIKPIGG
SHEF4_09  AELEFSYDFDGNKLIQRKINIKRRGKETNETLYVNKDINSITTEEDIYSLNSAHPVGG
SHEF5_52  AELEFRFEFI GNELSORYIDIKKKRGTDFHRMYVNRDIHSIVVEEDIYQLVNAIYATGG

      230     240     250     260     270     280
SHEF2_17  IPEGREEPVDLVGYNVDPNGRFYLDKATGYIYDKENVKHWSRTHNESNYFOQOLEFETT
SHEF4_09  TPEGKDEPITLKGFNWTDPKRFTVDPKGGYVYDTONIKIEWSRTNTRSHYFMOELQFEAM
SHEF5_52  TEGKQDQPINLKGFTWTDPEGRFVLNKTSIGIRDTONIKQWSRDNTNSHYFLOHKQWETT

      290     300     310     320     330     340
SHEF2_17  AQNKLRDYAVKHLKDYGKPLVAYEVDIANIPYNLOVGDYIKLVDENEKLYLKS RVQELKY
SHEF4_09  SQOKLLDATILHLKKYSKPIVSYNVDIANIPYOLEVGDTLKLIDENEKLYLQSRVQVLEY
SHEF5_52  NKNTLINNVVSHLKKYSQPVNTYIVDIANIBDMLQVGDVTVELVDENEKLYLSRVQELTF

      350     360     370     380     390     400
SHEF2_17  DYTTSVEAQLSDFV VLESGINDDLRLKADQINNK...VRSIPRVFVQEEPPVNPKQGD
SHEF4_09  DYTNTCEATLSDFVRLESGISDELRRKLANDLQANLNKGIKSVPKVYVQPDLPVNAKEGD
SHEF5_52  NYESNSCEAVLSDFVRLESGLAEQLREIQINLNKTEQMFNSVFPVQVFOPEPEAPKEND

      410     420     430     440     450     460
SHEF2_17  MWWVVDGTVPOPTIARLGDYETRAVKENPKIASYKVVWDDLKTEWVEQOTIDQSVLNIEITLN
SHEF4_09  IWWV .STT.EQQDY...EV.RAIDNG..LISGYKVFRG..GOWVEQOTIDQSILNIETLN
SHEF5_52  IWWV .QOSIEYRDMTTEGEL.VRVDTGEVVMVSA YKLFKD..GOWQDOTIDQSILNIETLN

      470     480     490     500     510
SHEF2_17  AITMNGSTINGSEELNTEFKATV...AGEQLECVSTVTGGEMEIEYNNLTNTRTGSTRLF
SHEF4_09  AVNINGSIINGSEELTWNKTT...GDVRKVGSAKLSSEGTIGIENYTYATHNG..IETL
SHEF5_52  AVKINSSTINGSKEINTWNTKENIDGIVRROGVNTIGEGEILQDNDFYIIP TGSTIEKL

      520     530     540     550
SHEF2_17  SQGF DGRV LNTD .GSINQYVSLTPAGLSLQDSAGHSG.....
SHEF4_09  RKL D ISTIYNSDISNFAQS YDME TGLNITRTSTAKL.....VDGTID
SHEF5_52  RSEETTLIKYGEILNTINKYDSATGTKIERKANGLI SANRVYLNELDYTVANVETNQVTT

      560     570     580     590     600
SHEF2_17  .....FLTAELIMQFANTGRKIYPGN SWVTNTDSIKPTL...KMEECAIGWLFLL
SHEF4_09  .....IATTPSGSPKPN.SYTVLNGEGITVNRKKPFGAFFGAGFNLDKAGNNLLR
SHEF5_52  LEPRGLSFIITTTREGNPAVLGTTELSGGLIKVDGHSPNISA WGEQNITNAKSGNLFRR

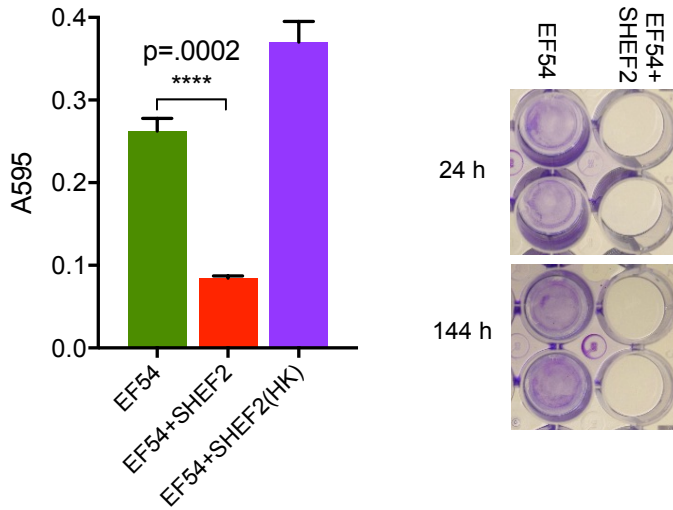
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SHEF2_17  WQPYD TTNGKPLNW DYTYYLVPKAHAN.FNSGRGINMRLQ GAGTGGCANDTVYKYVYVSN
SHEF4_09  IGPYSGADFNTSTYEVQQT IIFNPNRDAFQILRDCTLKDIDVTLRHQCDGTSSQSPYVYTA
SHEF5_52  FGNLQALGFNTNIRALNGLVQKNQANDAFQAQRDAKIKFOATVLFQGDNATTS SDYAYCK

      670     680
SHEF2_17  TSVTGTVNNGTNGAKWVLT SIFSV.....
SHEF4_09  IVVDQDISKLTSKPEYGYI.QAIGSYG SNVPLRFISGGSYVNVFKKGF GFGALRLSLASG
SHEF5_52  MQVKNTYNELKSTSGGVMIA SAIGTGNSDSIKLQWVGTATVIDVKAGQWFGCVLELRES

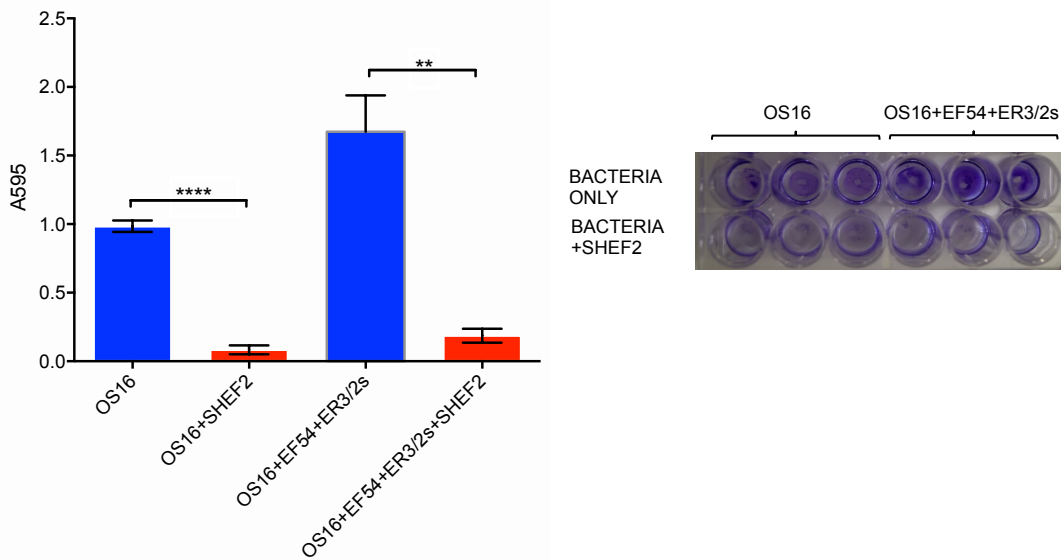
SHEF2_17  ....
SHEF4_09  KYS.FISSVPSMQITEVFSID
SHEF5_52  RNNLFAMRLVNVQLEELFPIA
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Figure S3

A. 6-day pre-formed



B. 6-day pre-formed- Mixed spp.



C. CFU vs Resazurin assay

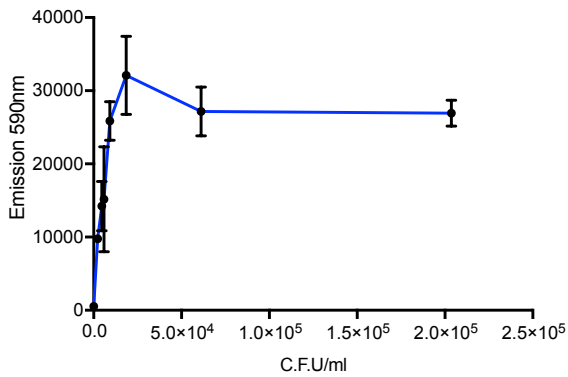


Figure S4

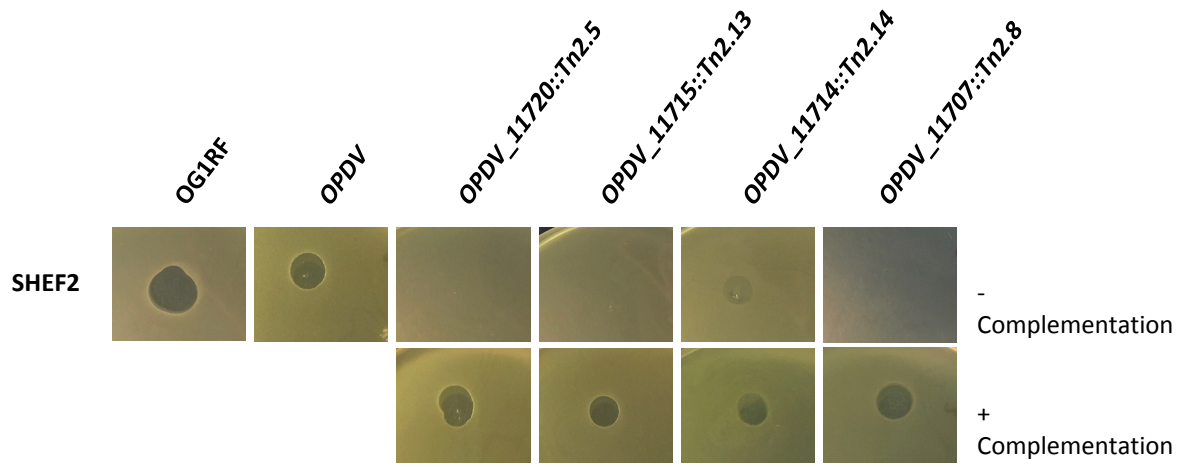
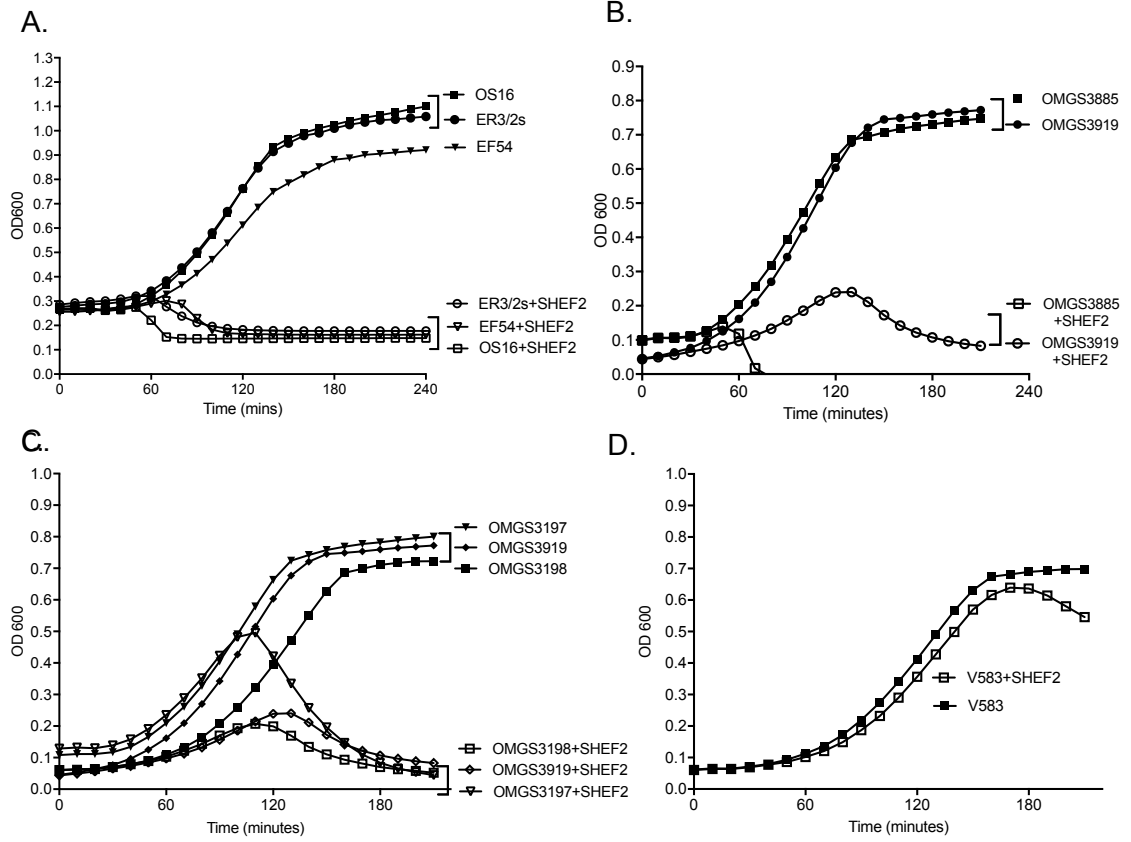


Figure S5



## SUPPLEMENTARY FIGURE LEGENDS

**Figure S1 Mauvealign image of the entire genome of SHEF 2,4,5.**

**Figure S2. Multiple sequence alignment of SHEF minor tail genes produced by Multalin.** A) SHEF2\_16, 4\_08 and 5\_53; with conserved domains underlined in black and blue. B) SHEF2\_17, 4\_09 and 5\_52; the phage anti-receptor (TIGR01665) and smaller domain of phage tail endopeptidase (pfam06605) are underlined

**Figure S3. Biofilm growth and affects of SHEF2 addition**

**A.** Biofilms were grown on Polystyrene surfaces for 6-days before addition of either live or heat-killed SHEF2. Bar charts (left) represent data from 6 wells per condition with A570 quantified after extraction of Crystal violet. Samples treated with live phage are labelled: +SHEF2; while those with heat-killed: +SHEF2 (HK); strain names are as elsewhere. Mean with SD and students t-test to compare conditions ( $P < 0.0001$ ). Images of wells are shown to illustrate these data at both 24 and 144h.

**B.** Mixed species biofilms were grown under identical conditions as S3A. Bar charts display A570 after Crystal Violet staining. Mean of 6-wells with SD is shown with used students t-test to compare conditions ( $P < 0.0001$ ). (right) an example image of microtitre plate is shown after CV staining.

**C.** Triplicate cultures of strain EF54 Were grown overnight and then diluted to the cell numbers shown and incubated with resazurin under identical conditions to the assay in Fig. 5. Emission at 590nm is shown with SD of mean readings.

**S4- Infection of OG1RF strains with SHEF2.** Double layer spot-plating assays of strains infected with SHEF2 ( $1 \times 10^7$  PFU) were performed and incubated o/n before imaging.

**S5. Sensitivity assays.** SHEF2 Phage ( $1 \times 10^7$  PFU) was added to 100ml of an overnight culture of strains indicated diluted to OD600 0.1 ( $1 \times 10^8$  cfu/ml) in fresh warmed BHI broth. 150 $\mu$ l was then placed in 96-well plates and measured with shaking over time with OD measured at the points indicated.