Supplementary Materials

Fig. S1 to S4. Superimposed pictures of phase contrast and fluorescence (by using Adobe Photoshop) of DAPI-stained cells from strain RFM475 (*topA gyrB*(Ts)) and CT170 (*topA topB gyrB*(Ts)) grown at the indicated temperature.

Fig. S5. Cells were grown and prepared for microscopy as described in Material and Methods. Superimposed pictures of phase contrast and fluorescence (by using Adobe Photoshop) of DAPI-stained cells from strains RFM445 (*gyrB*(Ts)), RFM475 (*topA gyrB*(Ts)) and CT170 (RFM475 *topB*) were used to calculate the number of cells in the different categories. Total is the number of cells that were examined to calculate the percentages of cells in each category. For strains RFM475 and CT170 the data shown in Fig. 3 were used here for the graphical representation of the different kind of cells. Note the dramatic increase in the proportion of anucleate cells (the Par- phenotype) from 39^{o}C.

Fig. S6 and S7. Superimposed pictures of phase contrast and fluorescence (by using Adobe Photoshop) of DAPI-stained cells from strain SB383 (*topA rnhA gyrB*(Ts)/pPH1243) and one of its *gyrB*+-derivative (NF98). + and – IPTG respectively mean that topo III was overproduced and not overproduced.

Fig. S8. A) Growth of strain SB383 (*topA rnhA gyrB*(Ts)/pPH1243) and one of its *gyrB*+-derivative (NF98) on LB plates with (1 mM) or without IPTG at 37^{o}C after

24h. B) Western blot showing the level of topo III protein in the strains grown with (1 mM) or without IPTG at 37^{o}C to and OD_{600} of 0.6

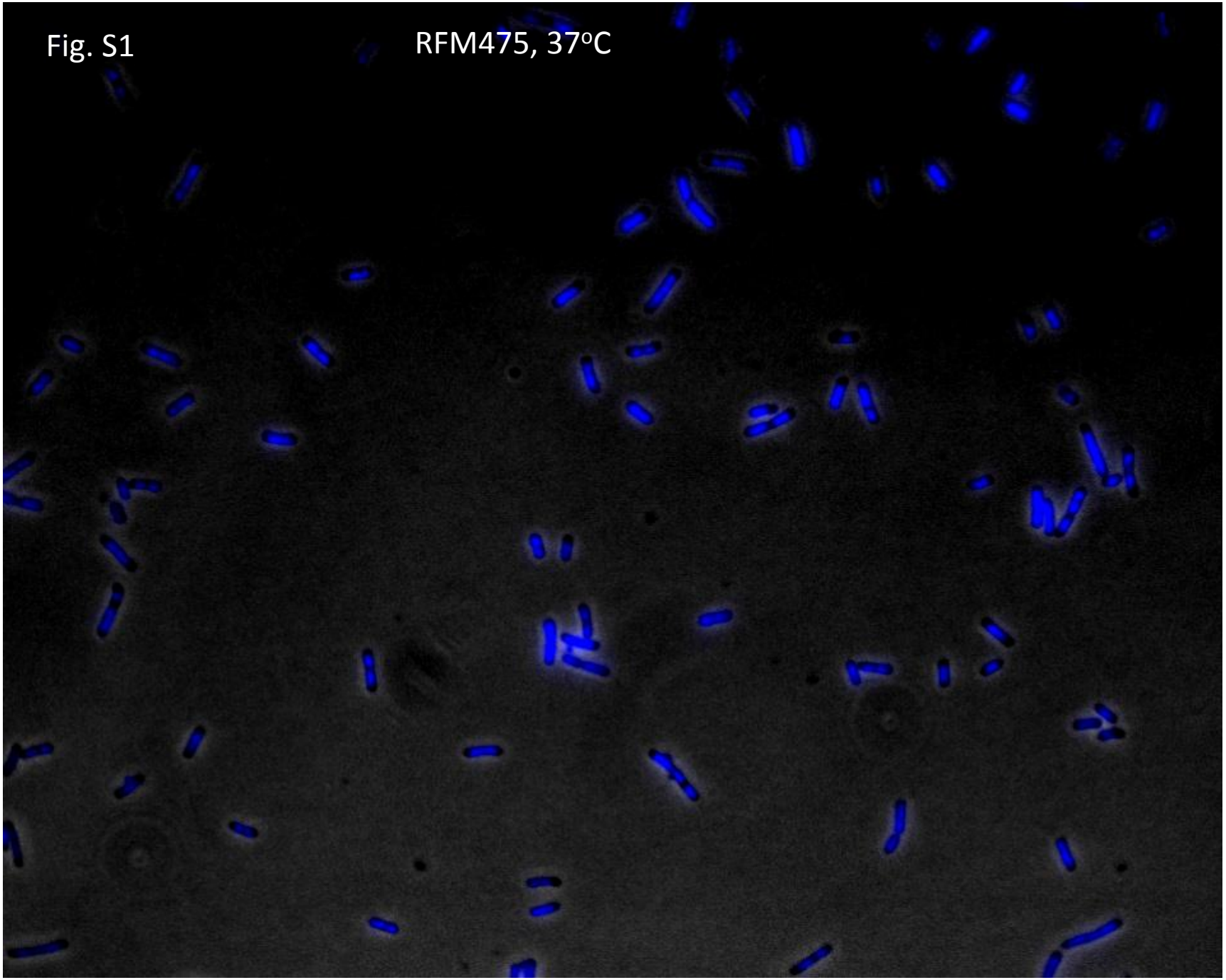


Fig. S1
RFM475, 37°C

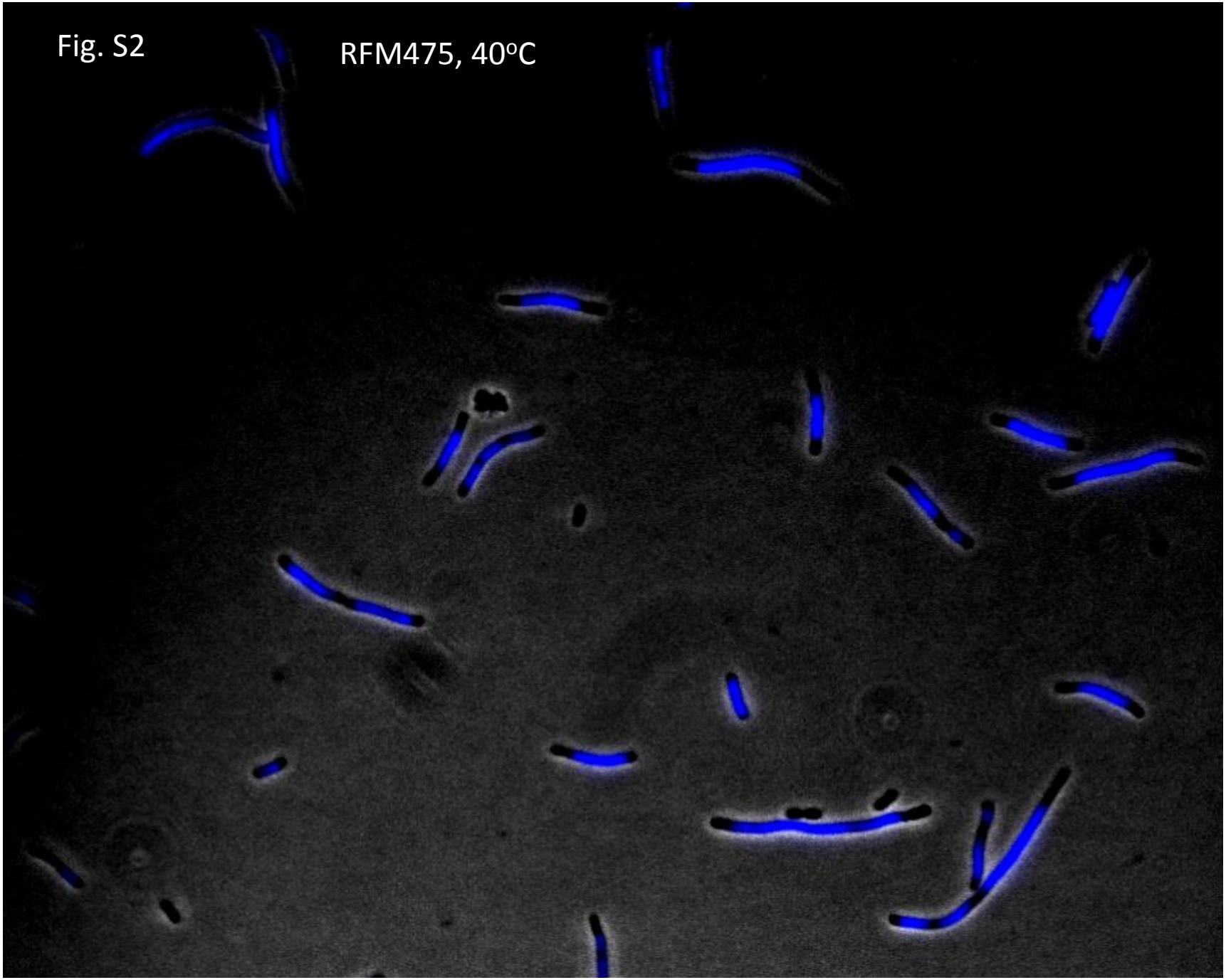


Fig. S2
RFM475, 40°C

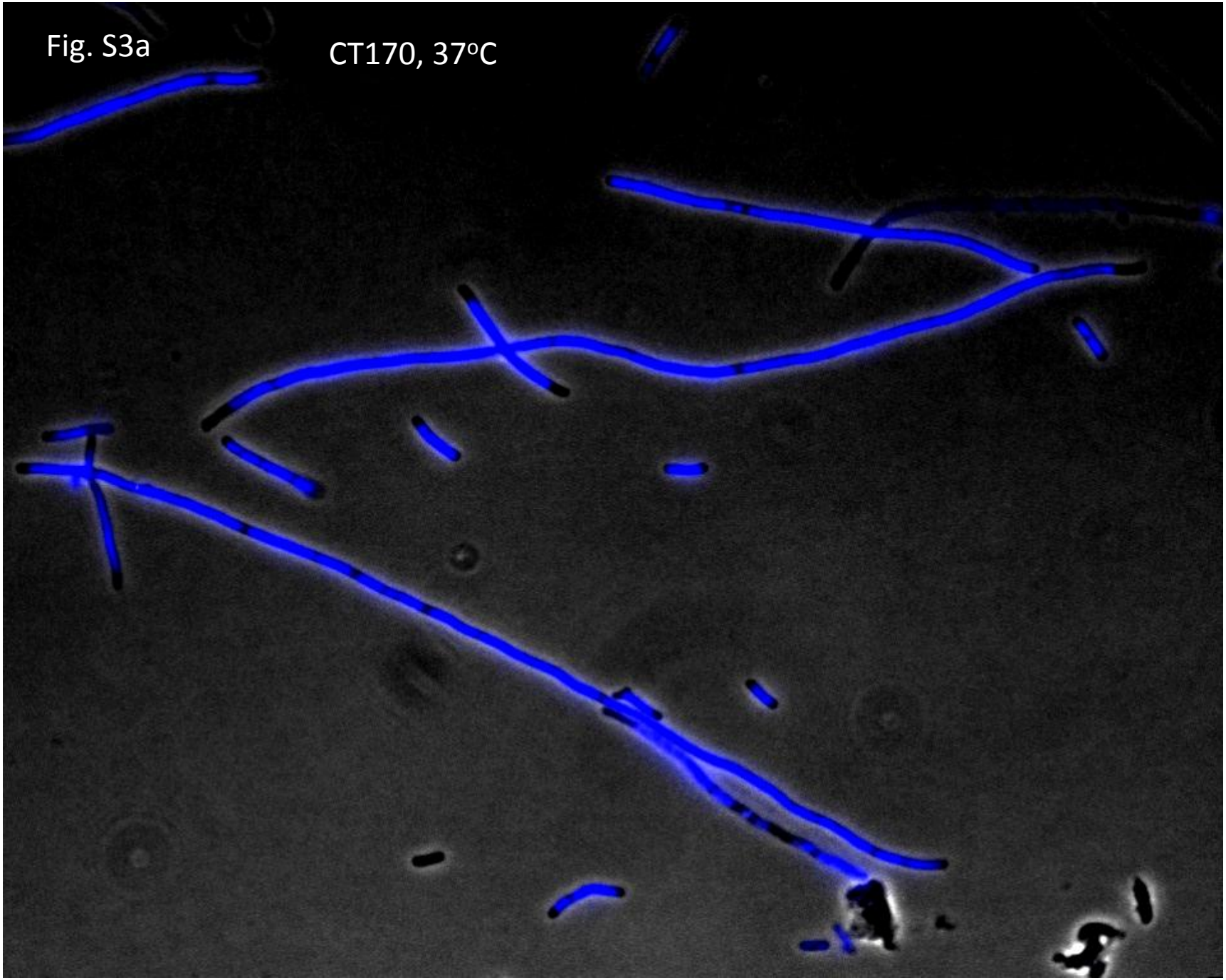


Fig. S3a
CT170, 37°C

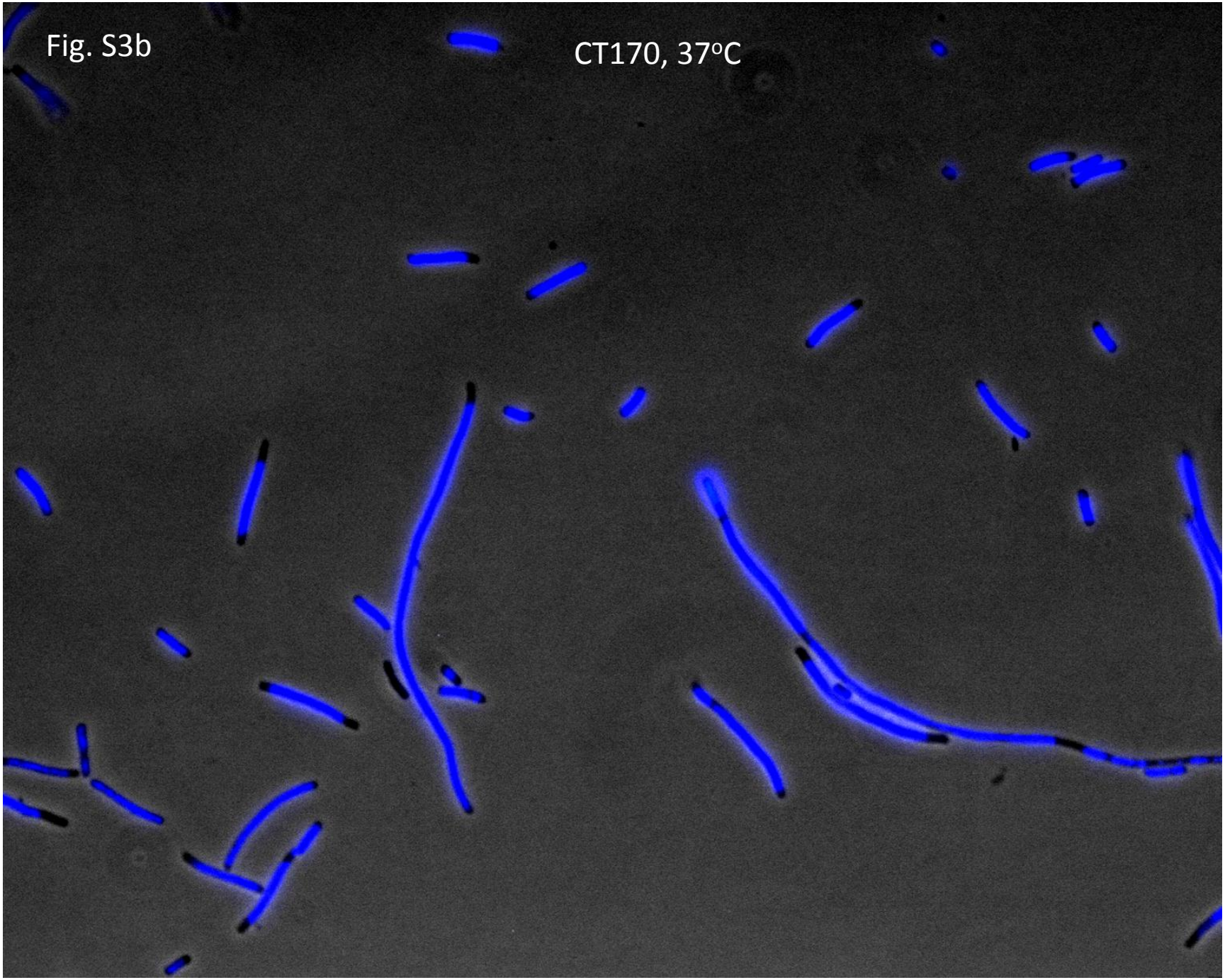


Fig. S3b
CT170, 37°C

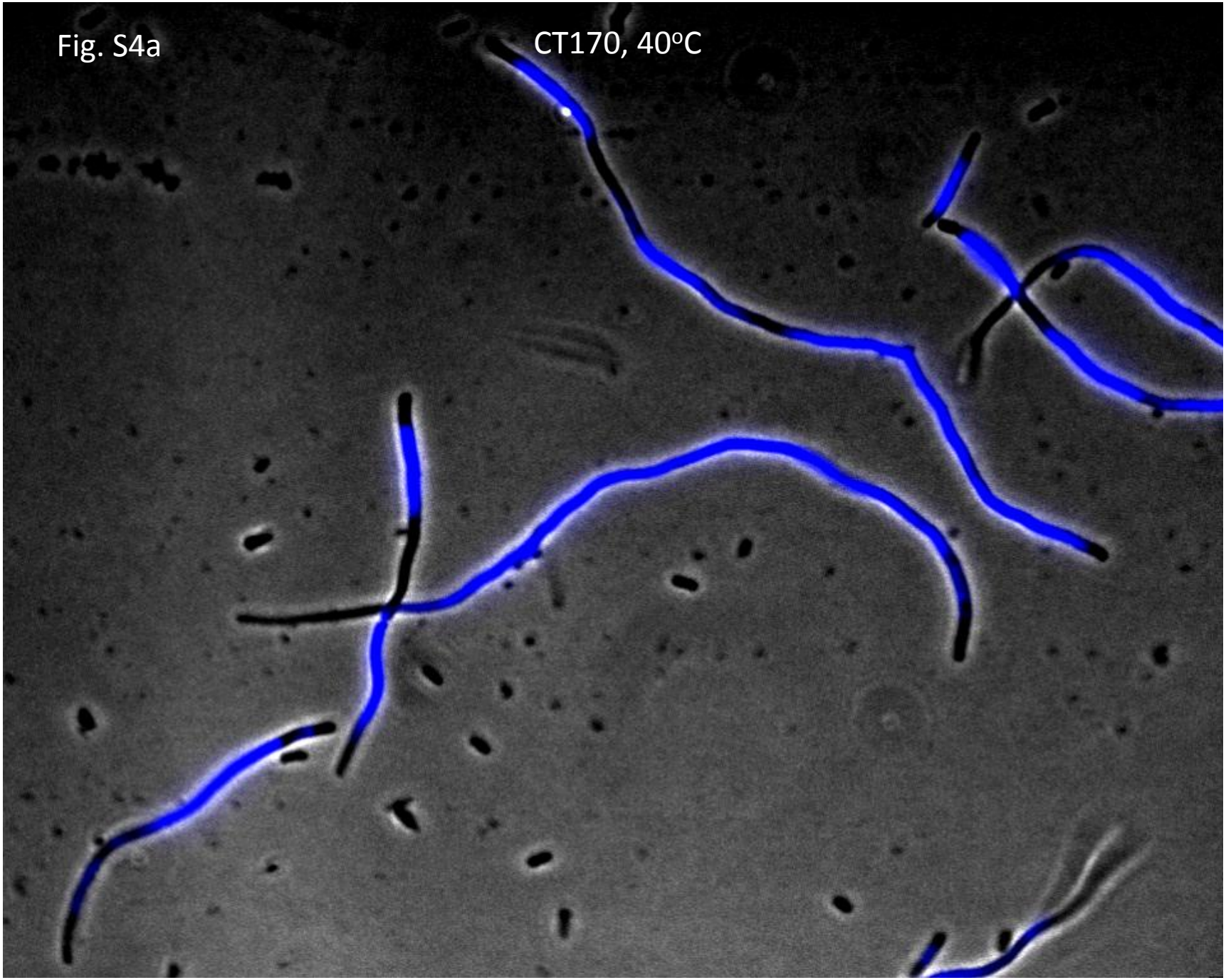


Fig. S4a
CT170, 40°C

Fig. S4b

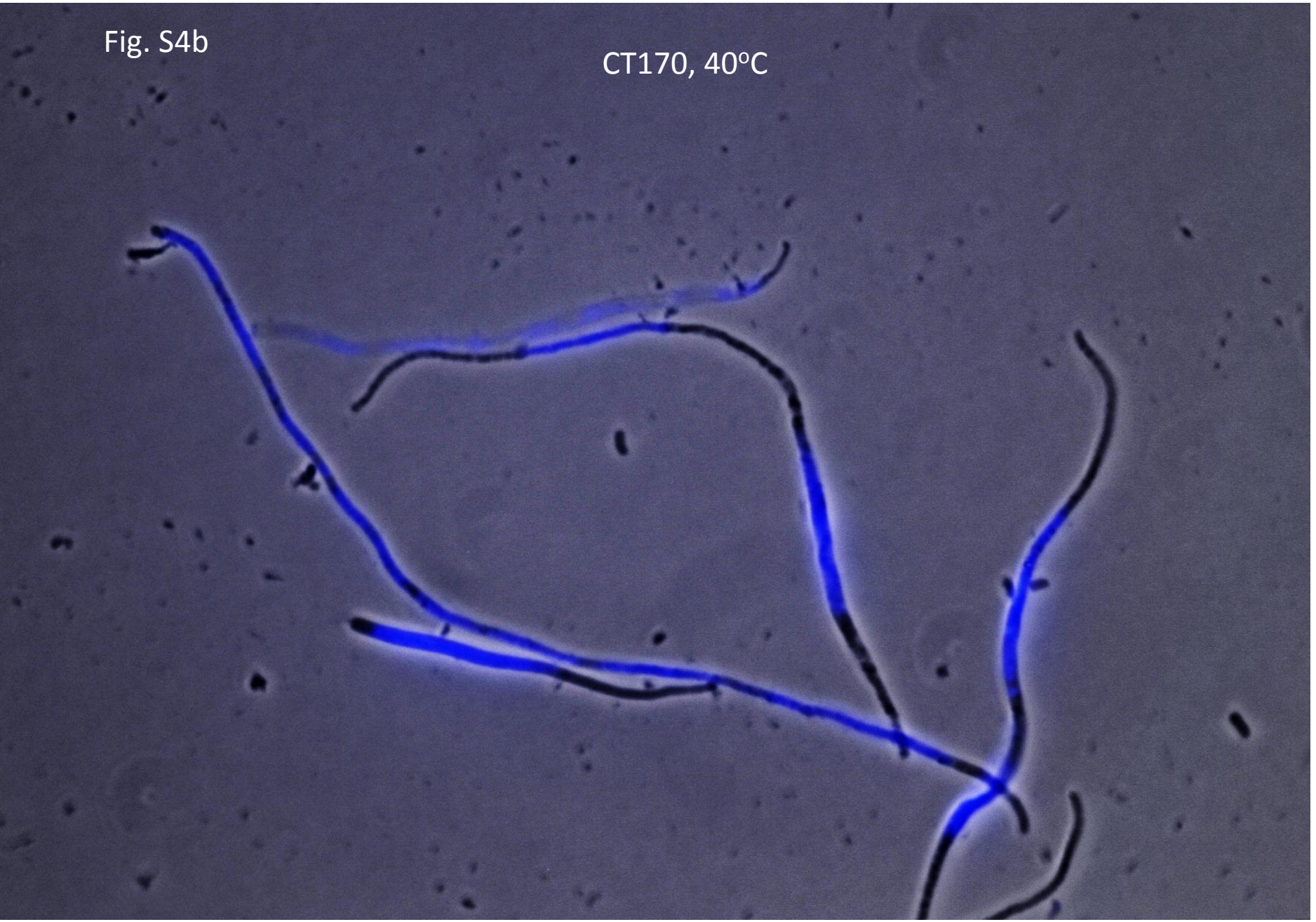
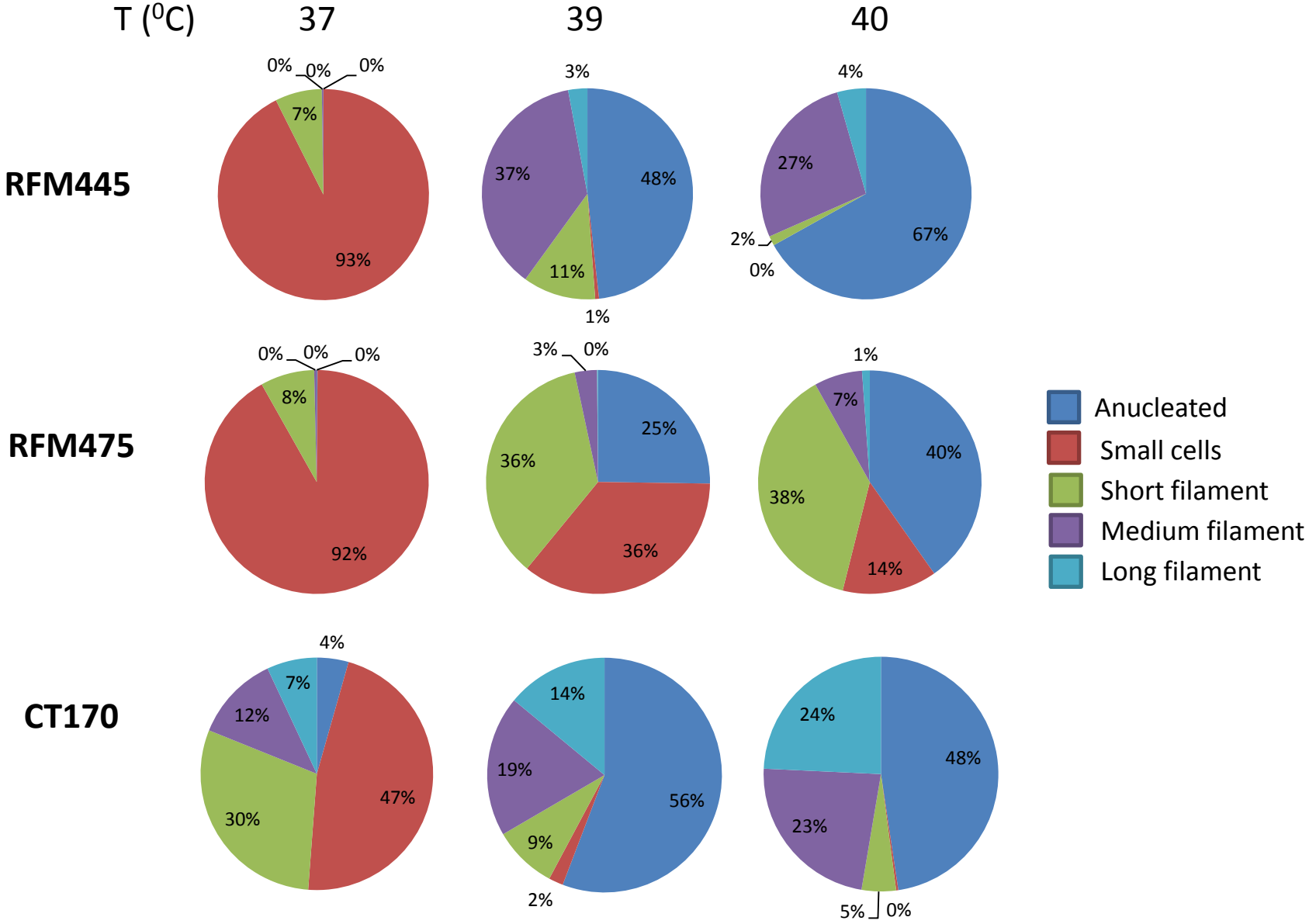


Fig. S5


T (0C)
37
39
40
RFM445
RFM475
CT170
0%
0%
0%
7%
93%
3%
37%
48%
11%
1%
4%
27%
2%
67%
0%
0%
0%
0%
8%
92%
3%
0%
25%
36%
36%
1%
7%
40%
38%
14%
4%
7%
12%
47%
30%
14%
19%
56%
9%
2%
24%
48%
23%
5%
0%
Anucleated
Small cells
Short filament
Medium filament
Long filament

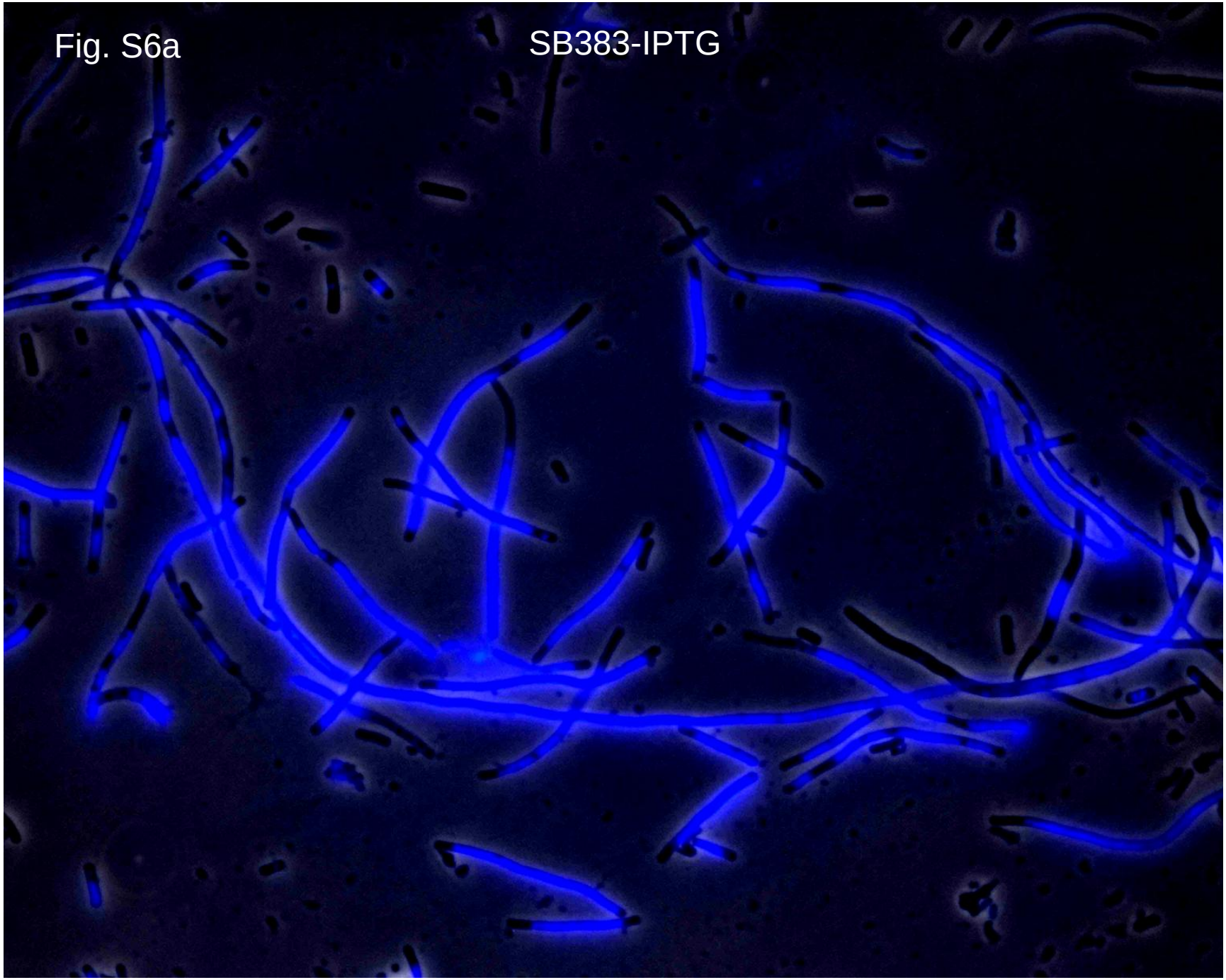


Fig. S6a
SB383-IPTG

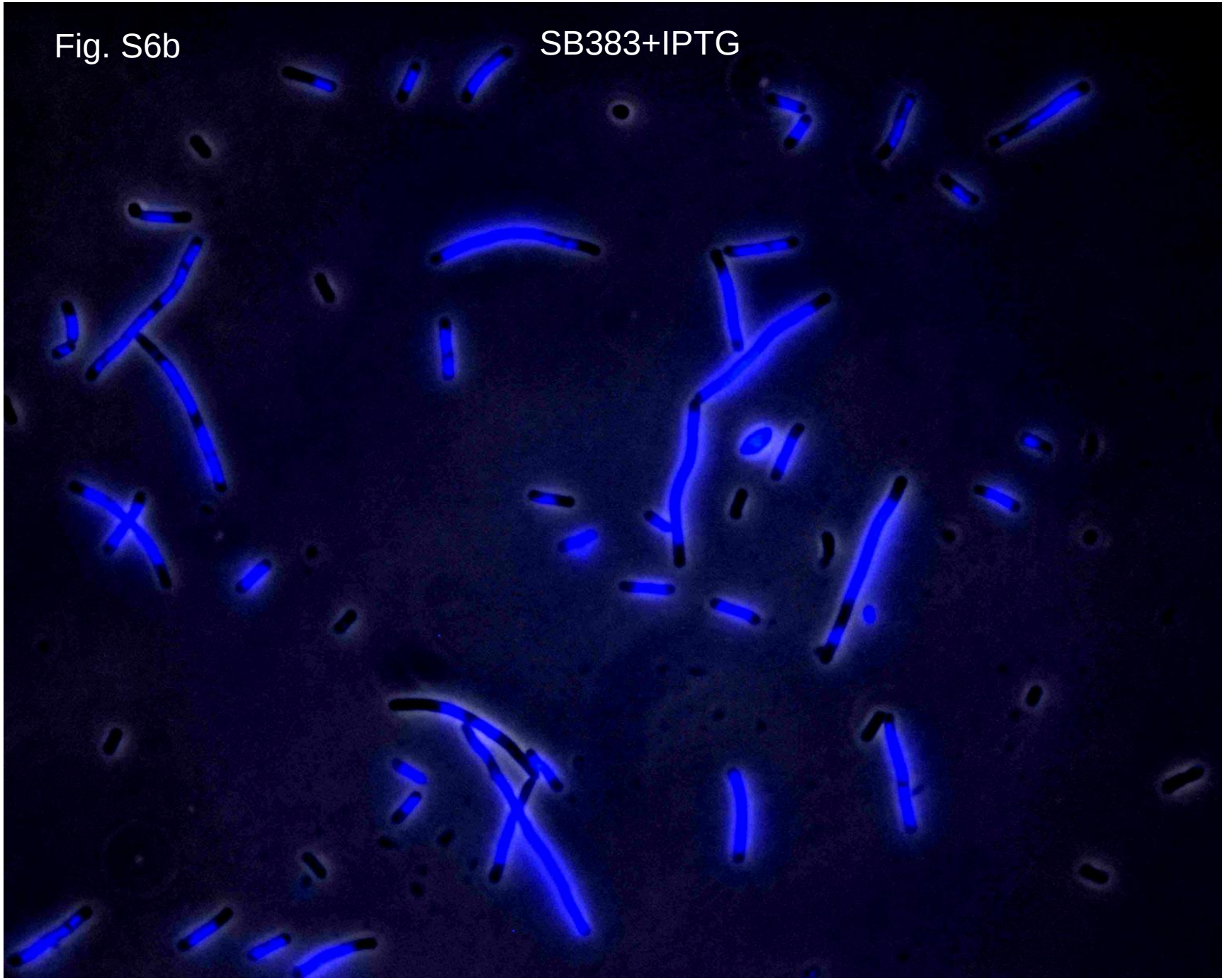


Fig. S6b
SB383+IPTG

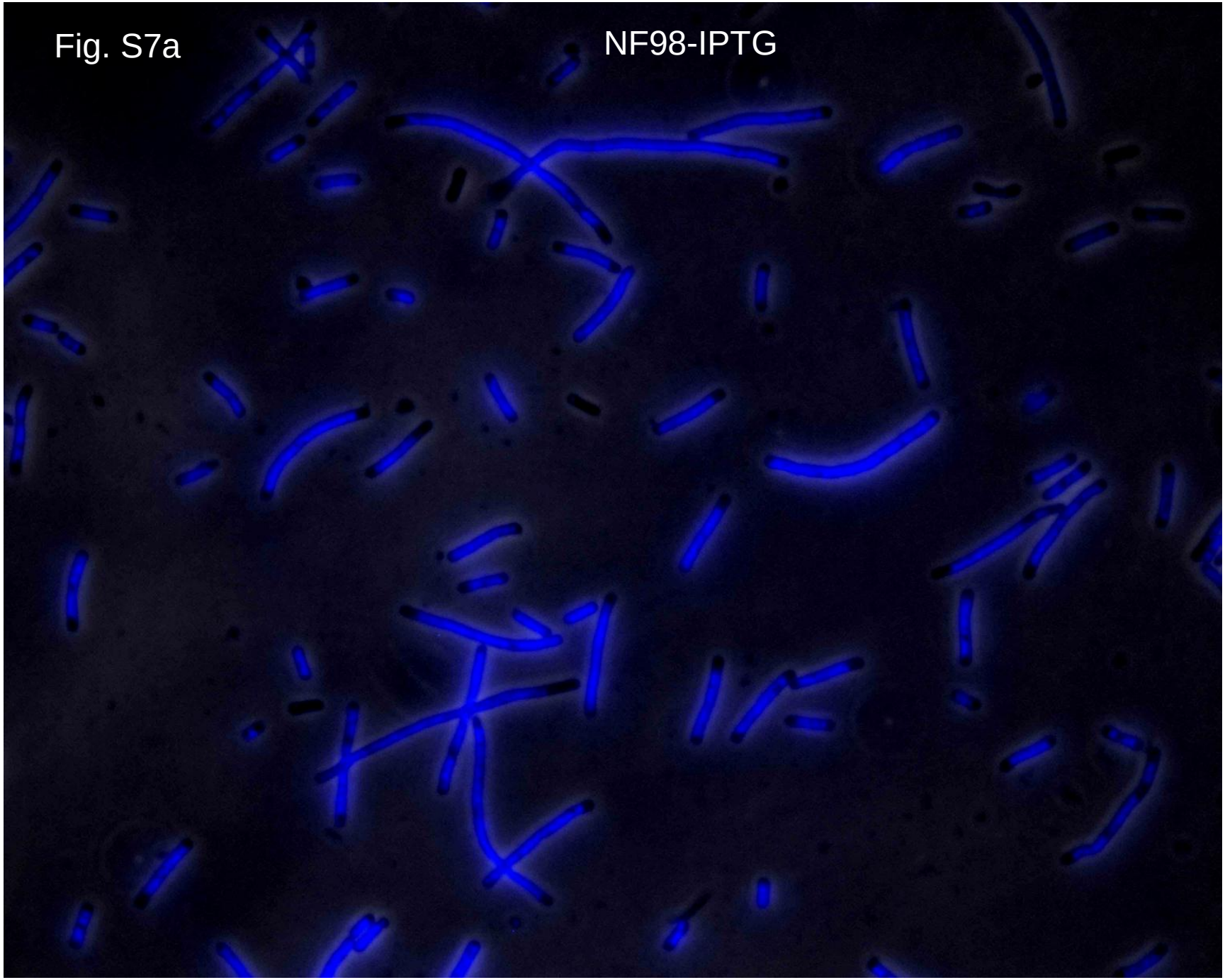


Fig. S7a
NF98-IPTG

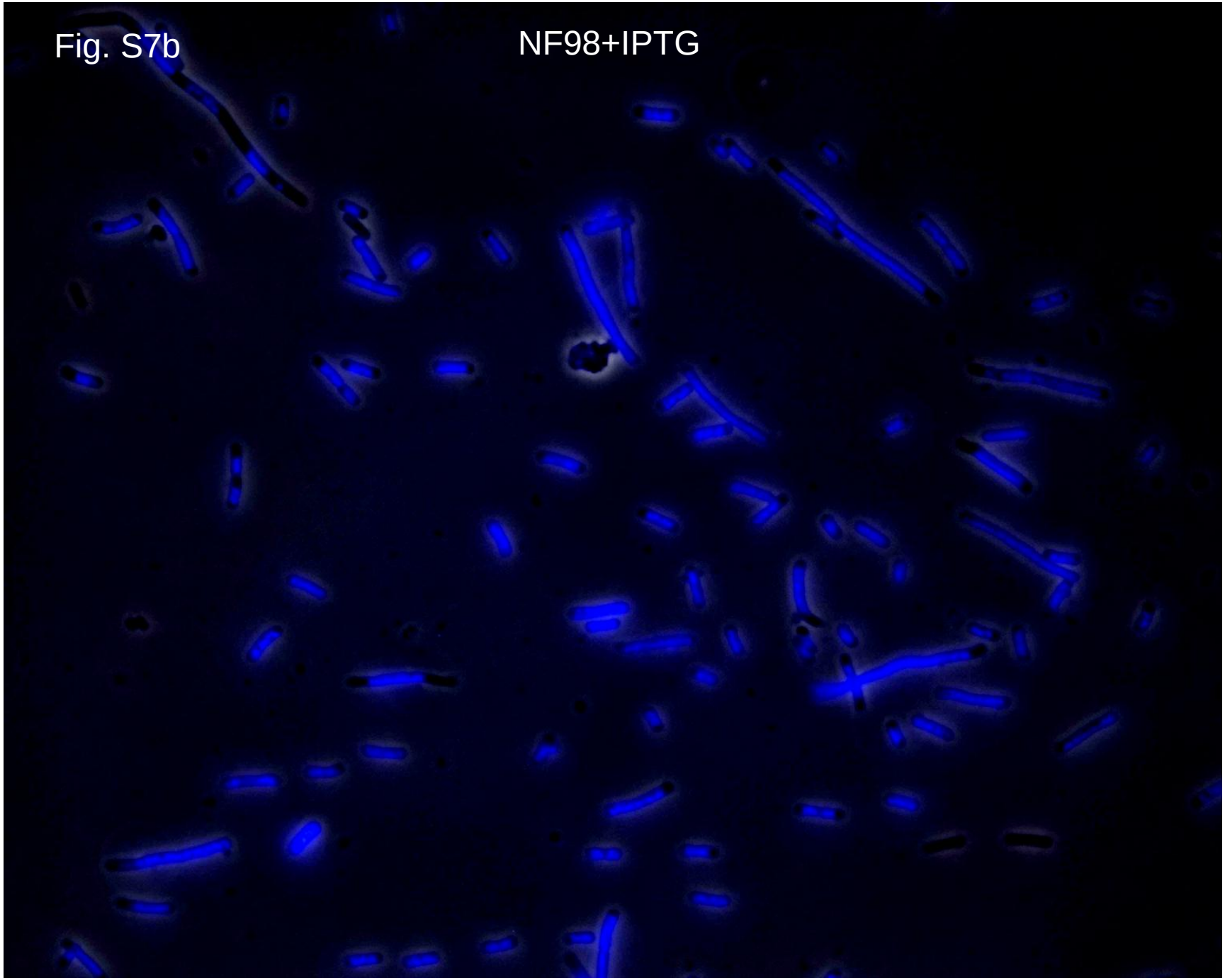
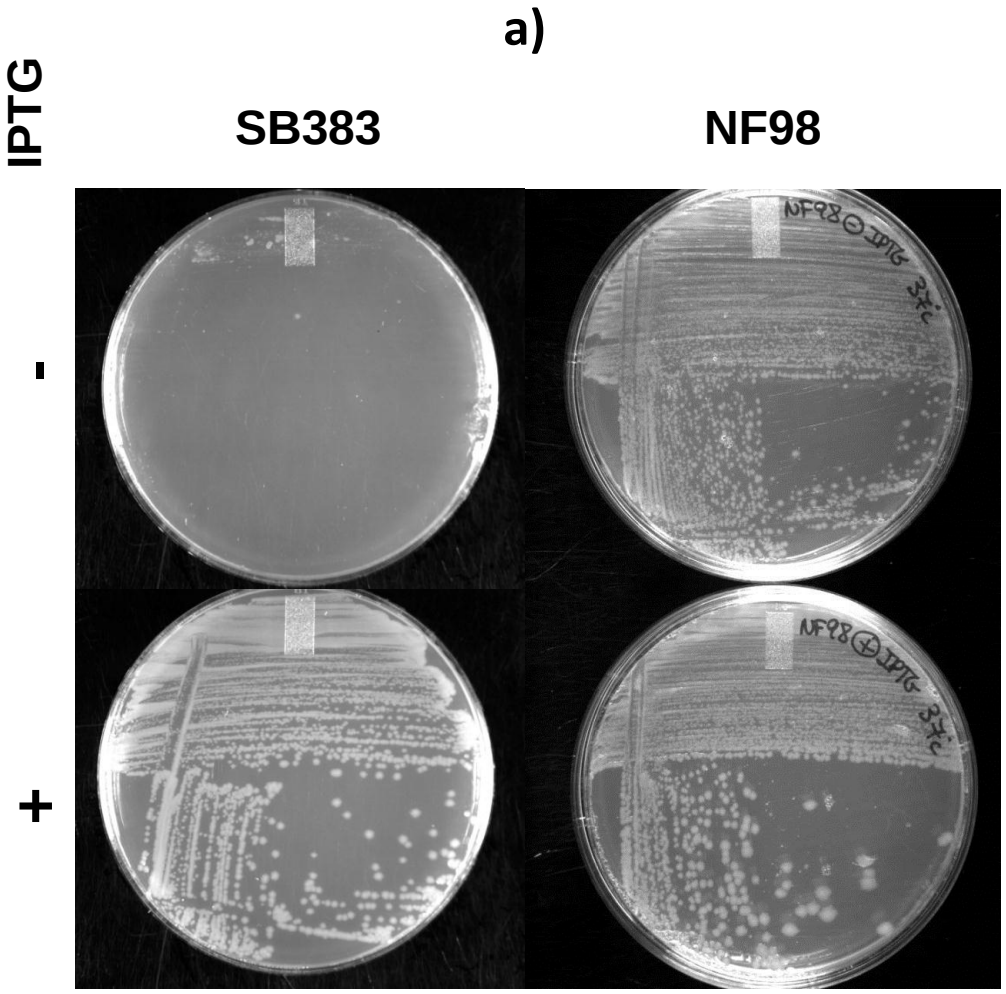
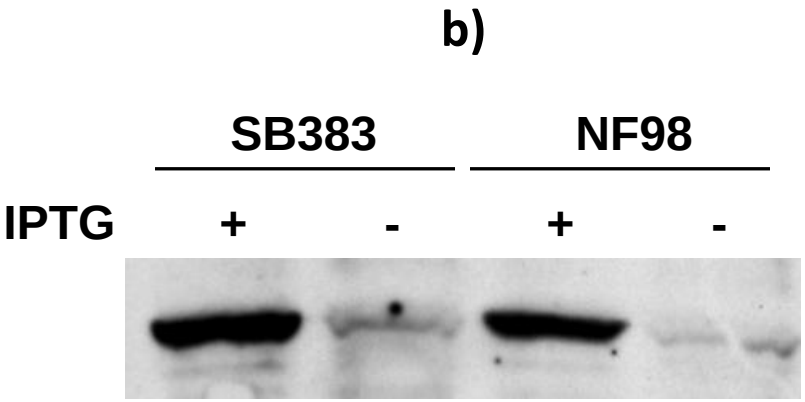


Fig. S7b
NF98+IPTG

Fig. S8


a)
IPTG
SB383
NF98
-
+
NF98 ⊖ IPTG 37c
NF98 ⊕ IPTG 37c


b)
SB383
NF98
IPTG
+
-
+
-