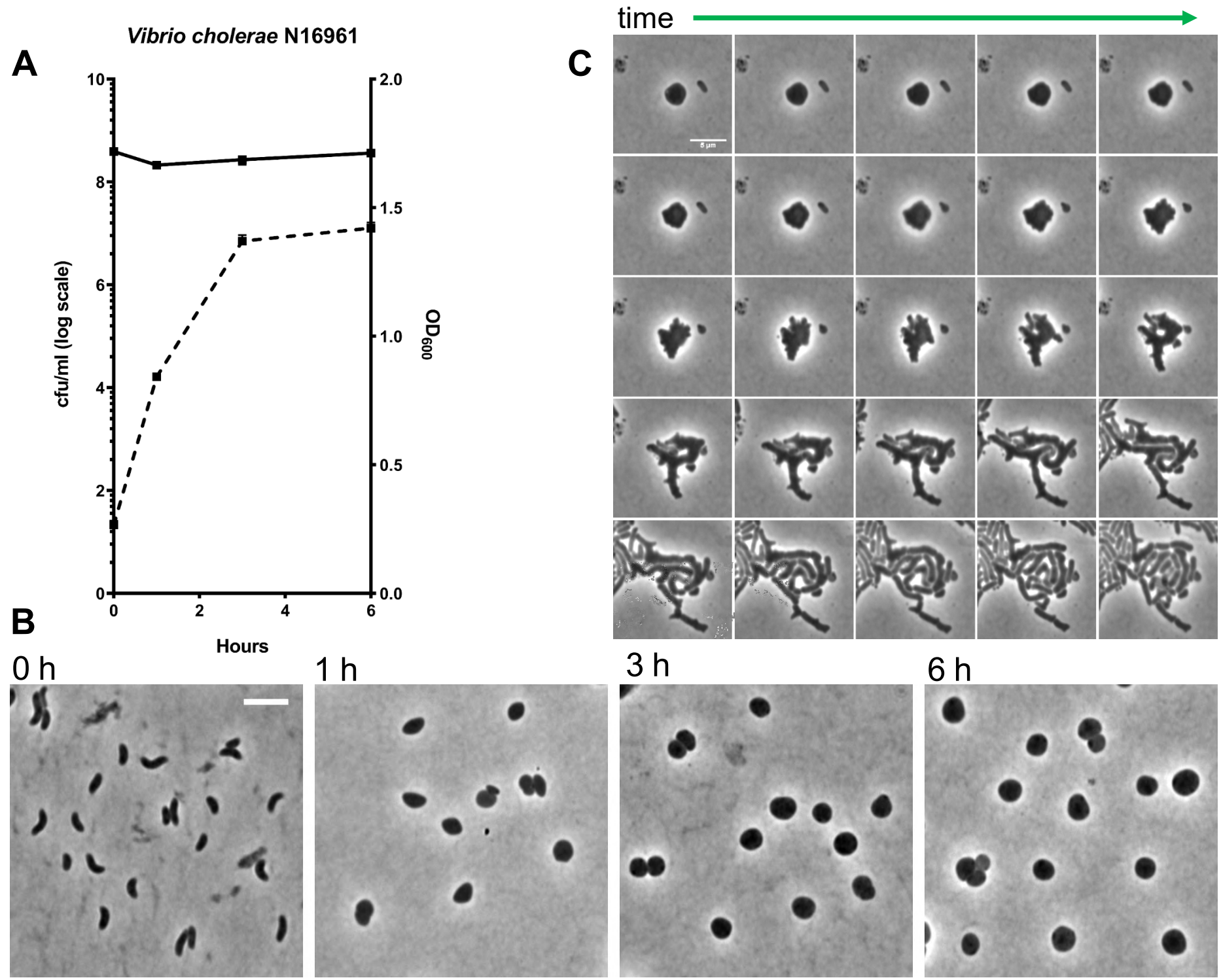

A
Vibrio cholerae N16961
cfu/ml (log scale)
OD600
Hours
B
0 h
1 h
3 h
6 h
C
time

Fig. S1

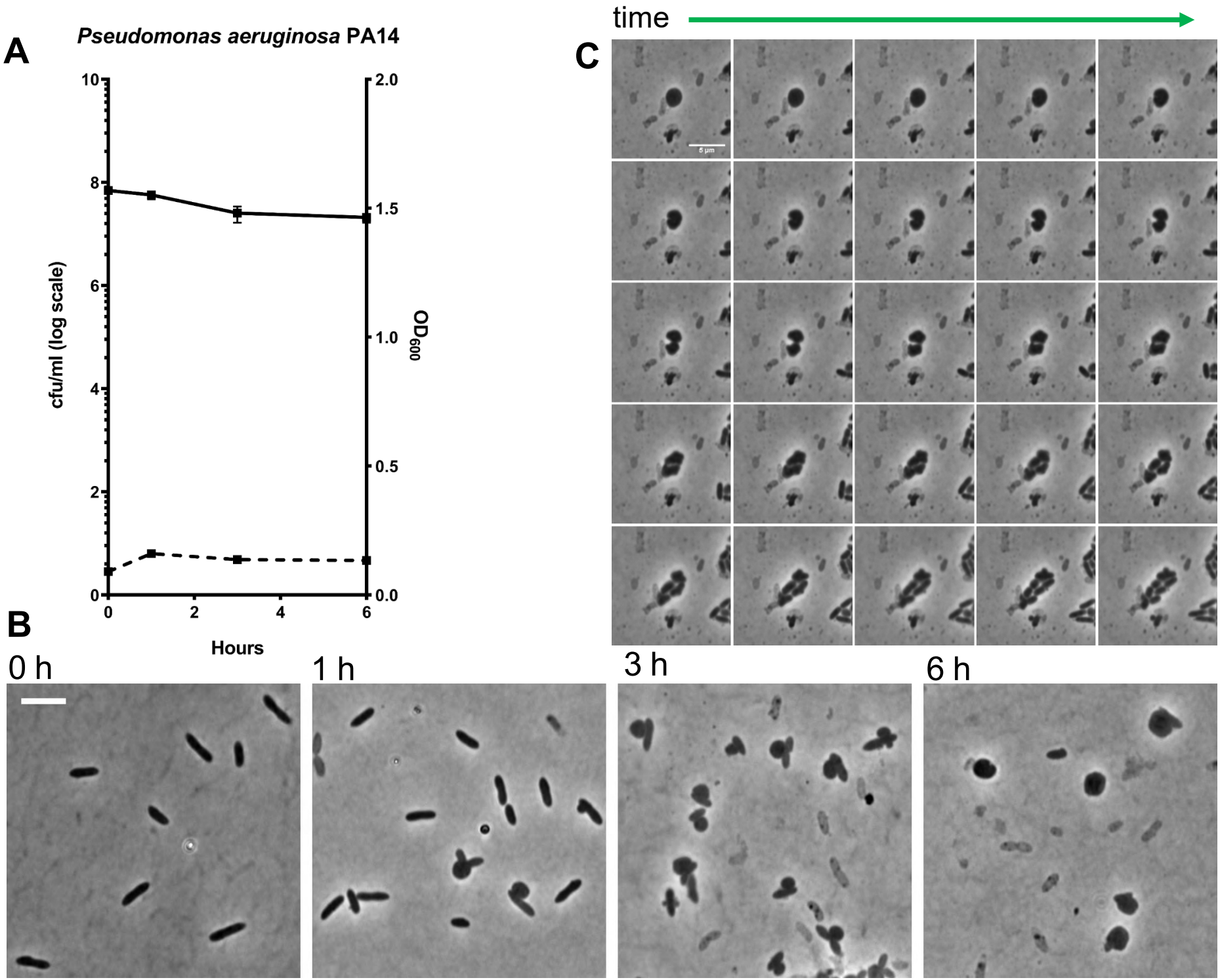

A
Pseudomonas aeruginosa PA14
cfu/ml (log scale)
OD600
Hours
B
0 h
1 h
3 h
6 h
C
time
5 µm

Fig. S2

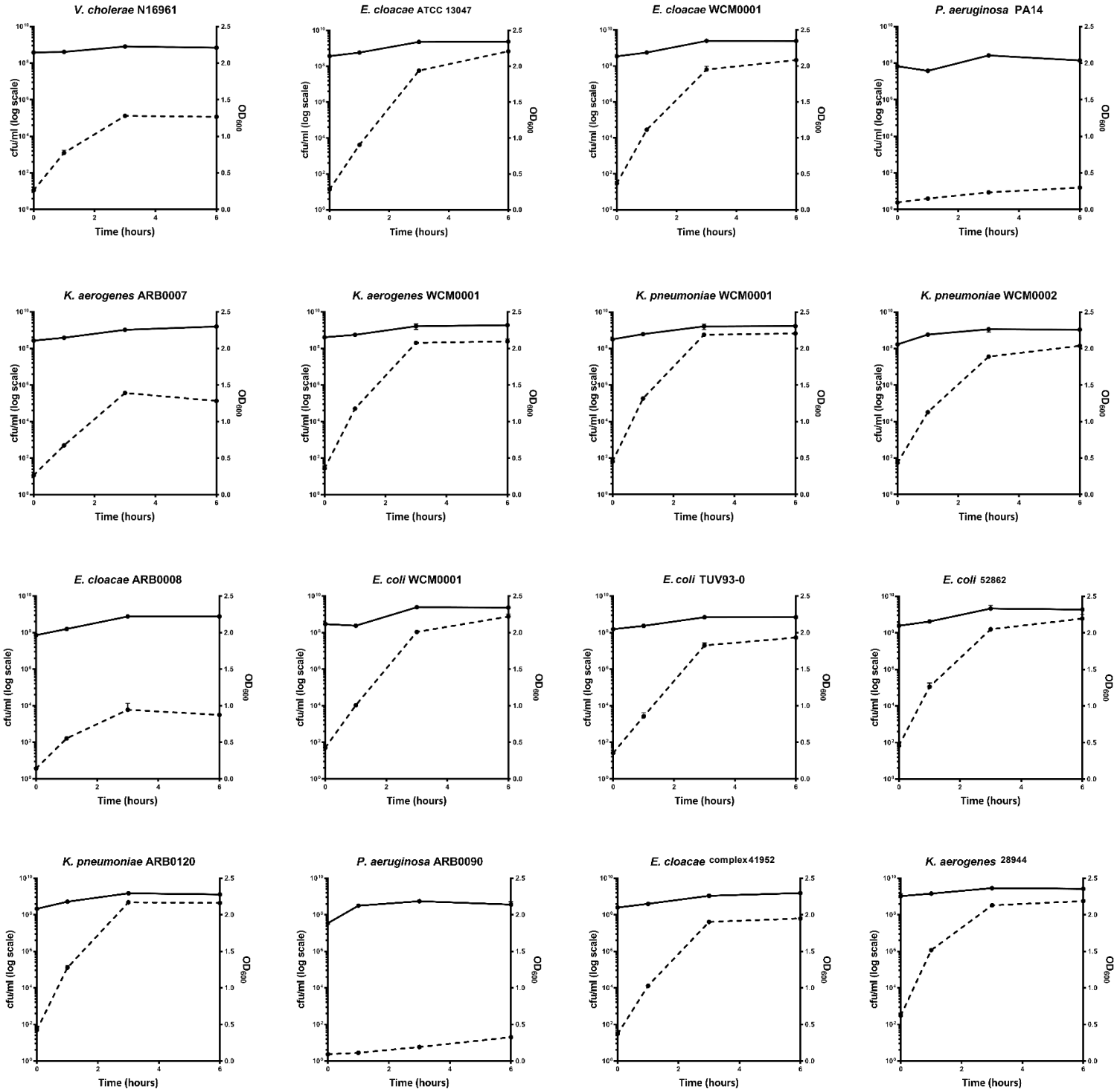

V. cholerae N16961
E. cloacae ATCC 13047
E. cloacae WCM0001
P. aeruginosa PA14
K. aerogenes ARB0007
K. aerogenes WCM0001
K. pneumoniae WCM0001
K. pneumoniae WCM0002
E. cloacae ARB0008
E. coli WCM0001
E. coli TUV93-0
E. coli 52862
K. pneumoniae ARB0120
P. aeruginosa ARB0090
E. cloacae complex41952
K. aerogenes 28944
cfu/ml (log scale)
OD600
Time (hours)

Fig. S3

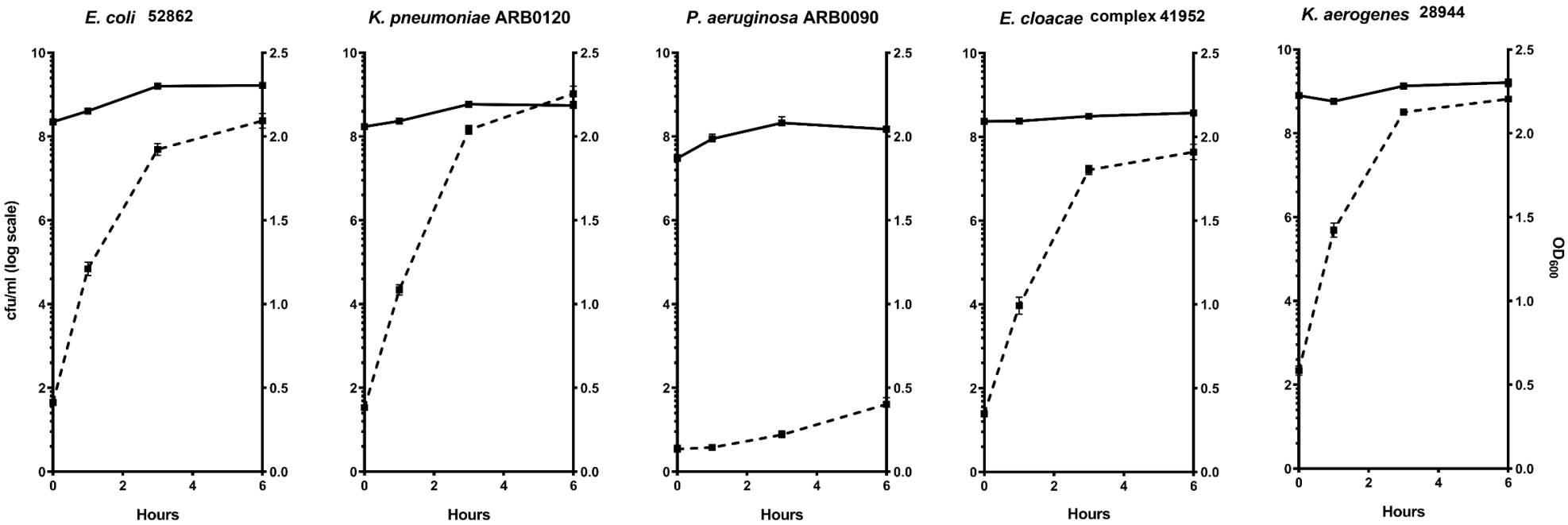

E. coli 52862
K. pneumoniae ARB0120
P. aeruginosa ARB0090
E. cloacae complex 41952
K. aerogenes 28944
cfu/ml (log scale)
OD600
Hours
0
2
4
6
0.0
0.5
1.0
1.5
2.0
2.5
8
10

Fig. S4

E. cloacae ATCC 13047

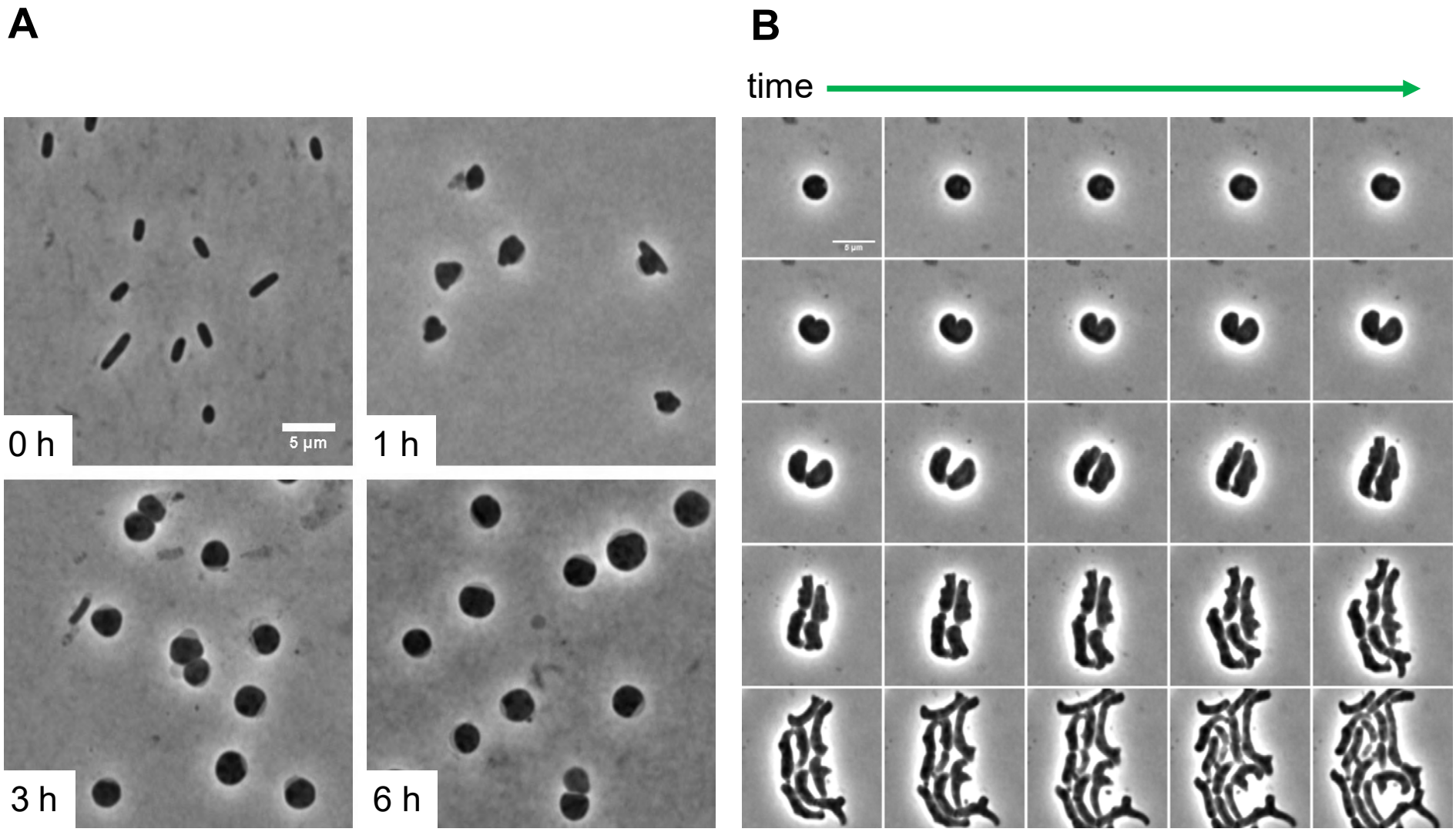


Fig. S5

K. aerogenes ARB0007

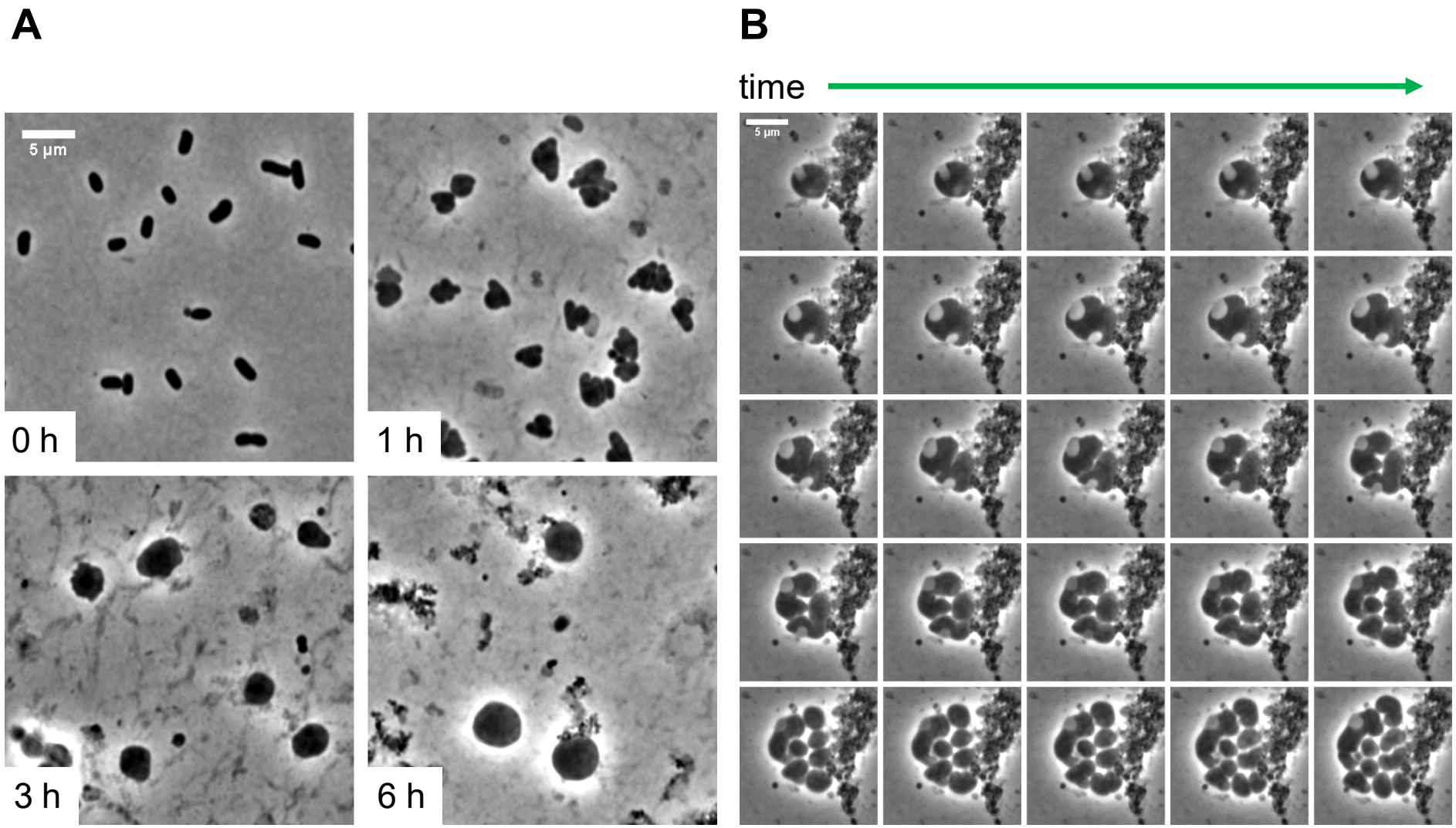


Fig. S6

K. pneumoniae WCM0002

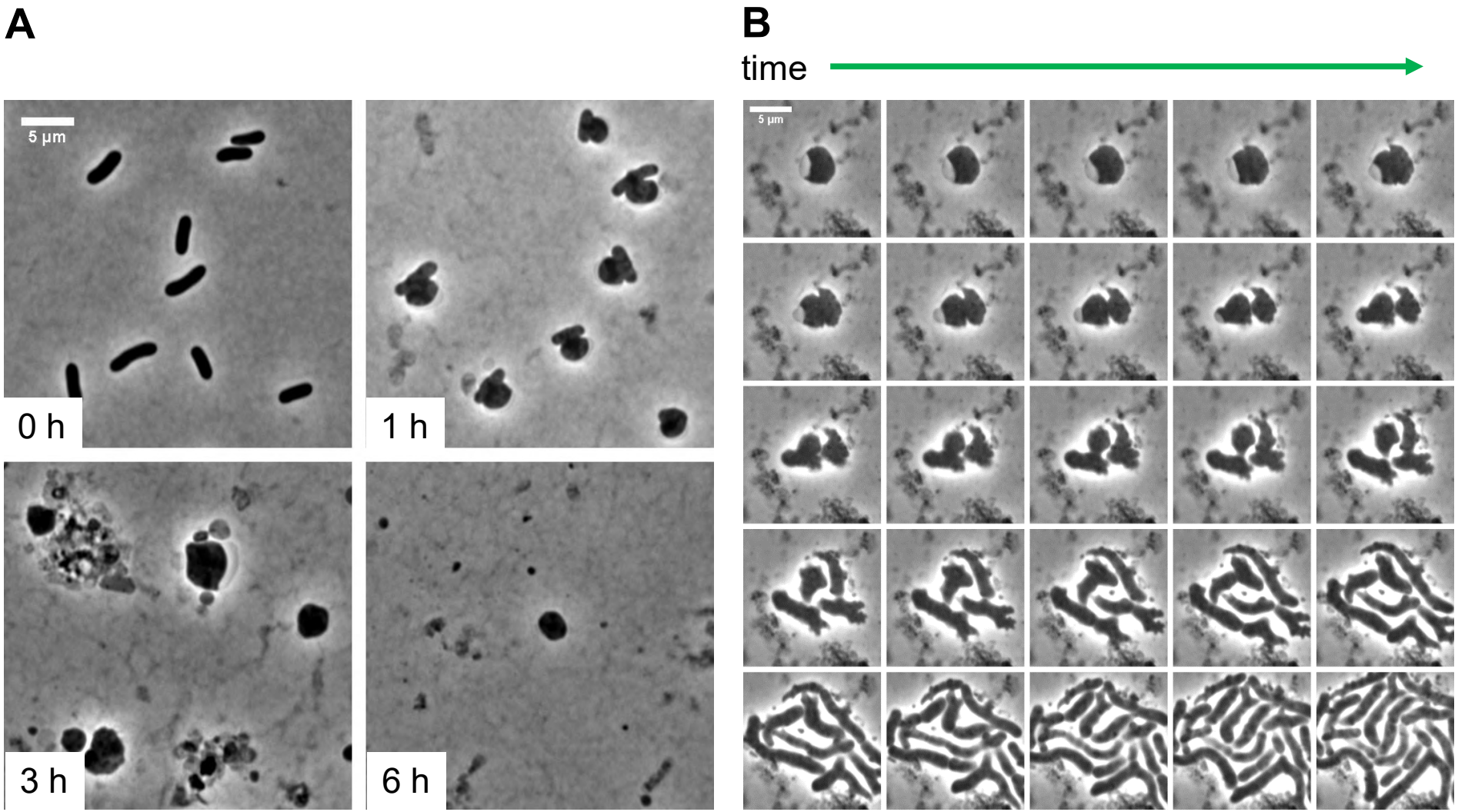
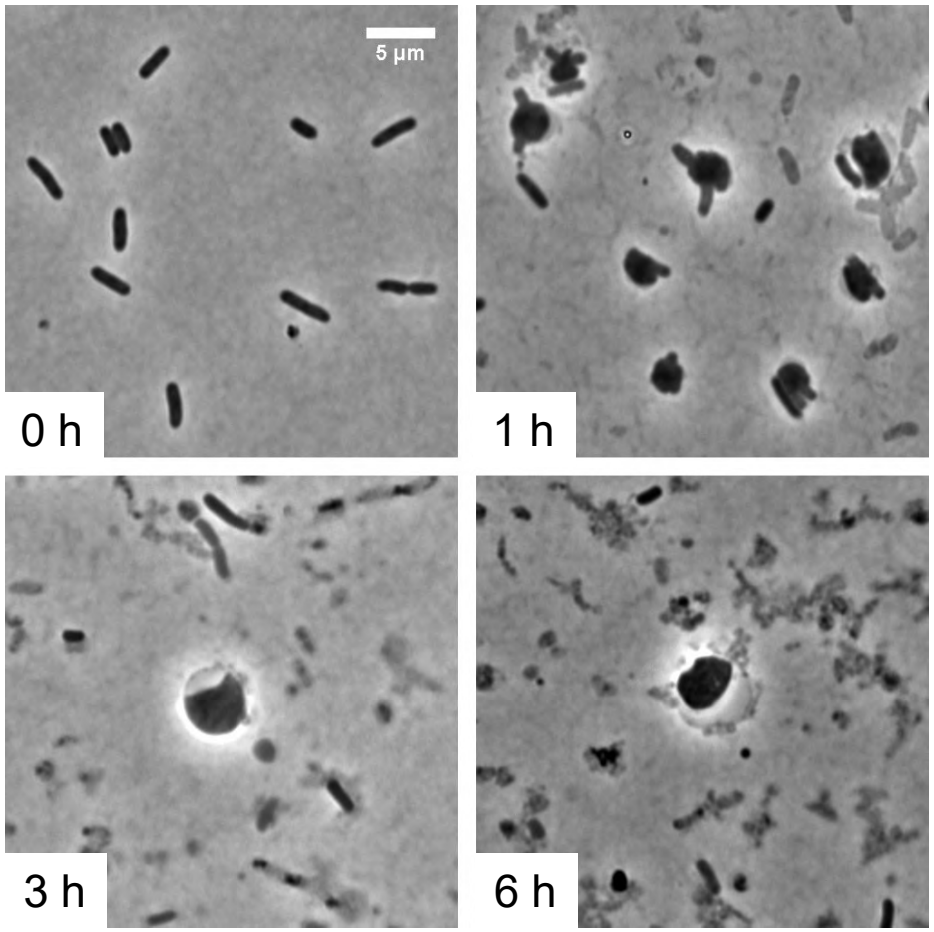


Fig. S7

E. cloacae ARB0008

A



B

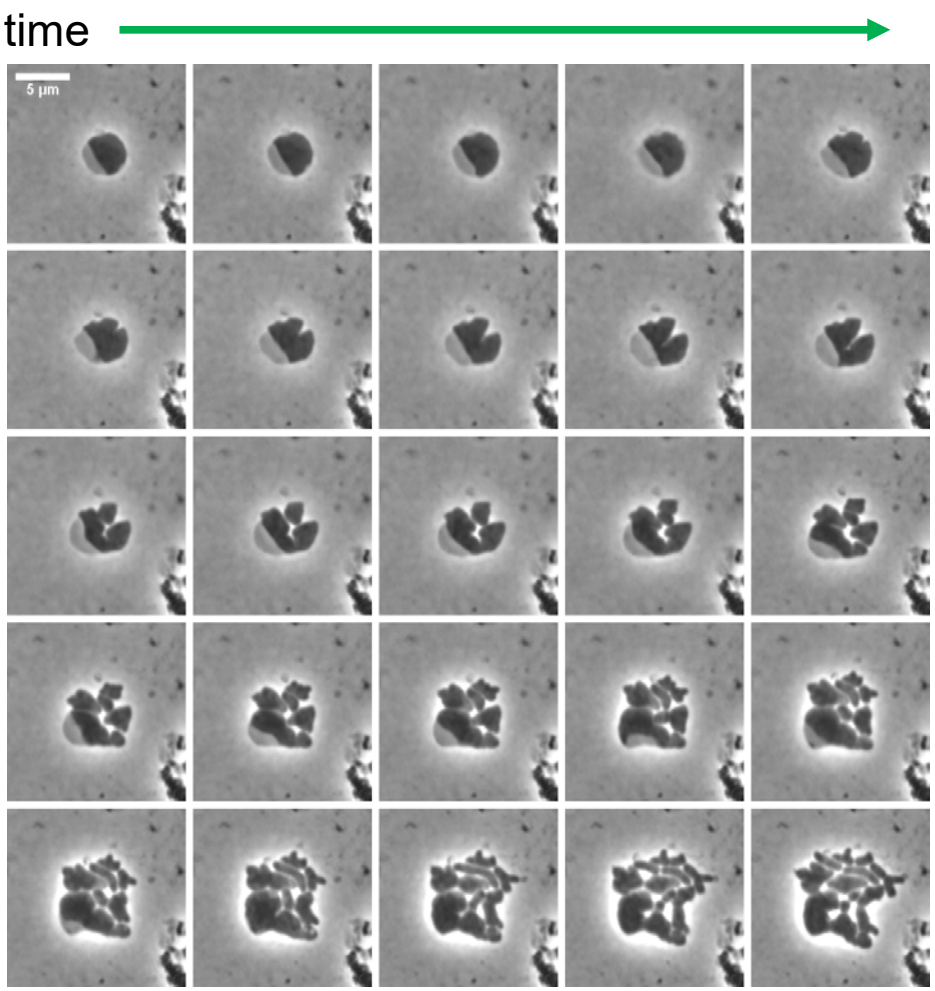


Fig. S8

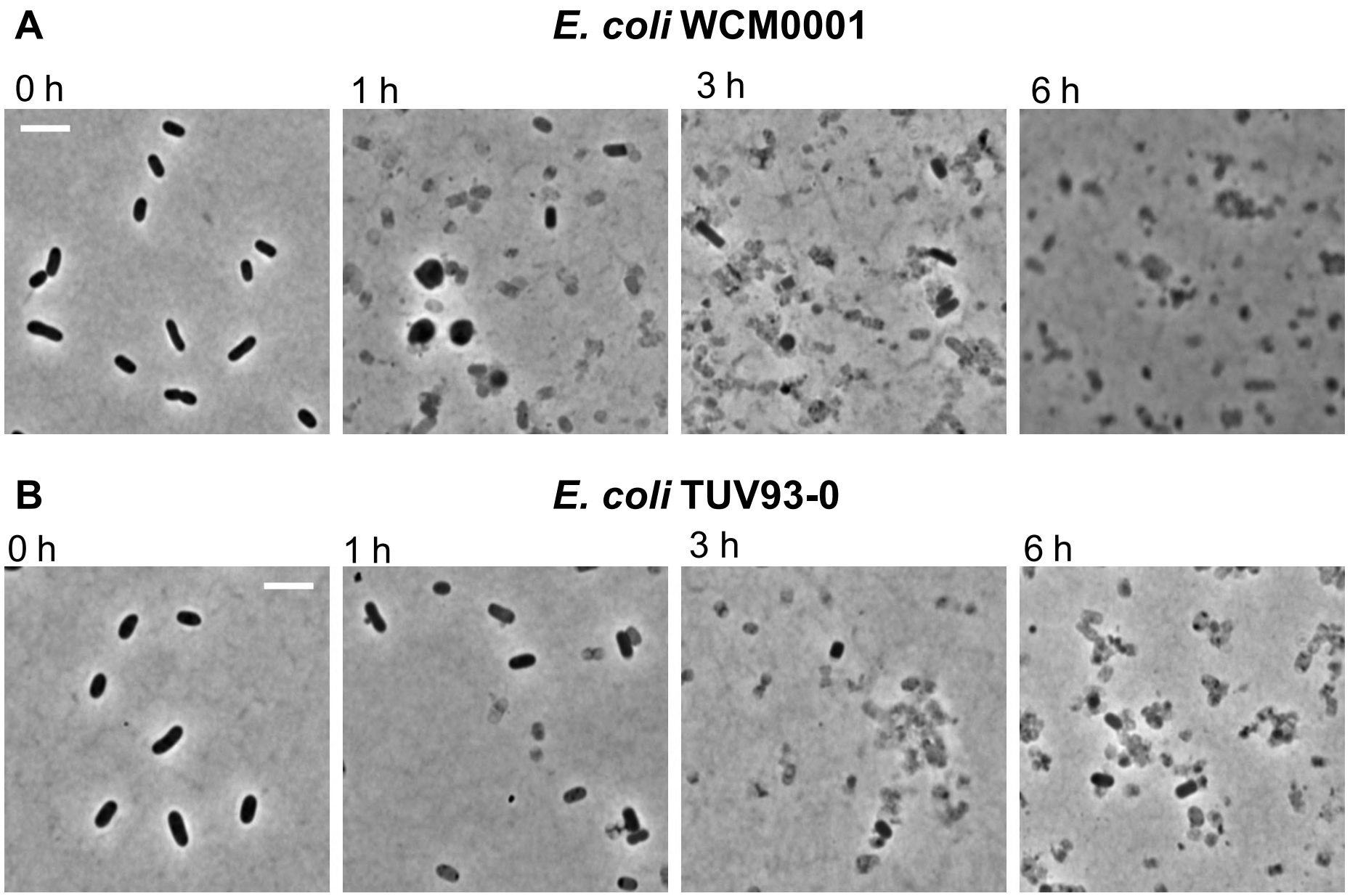


Fig. S9

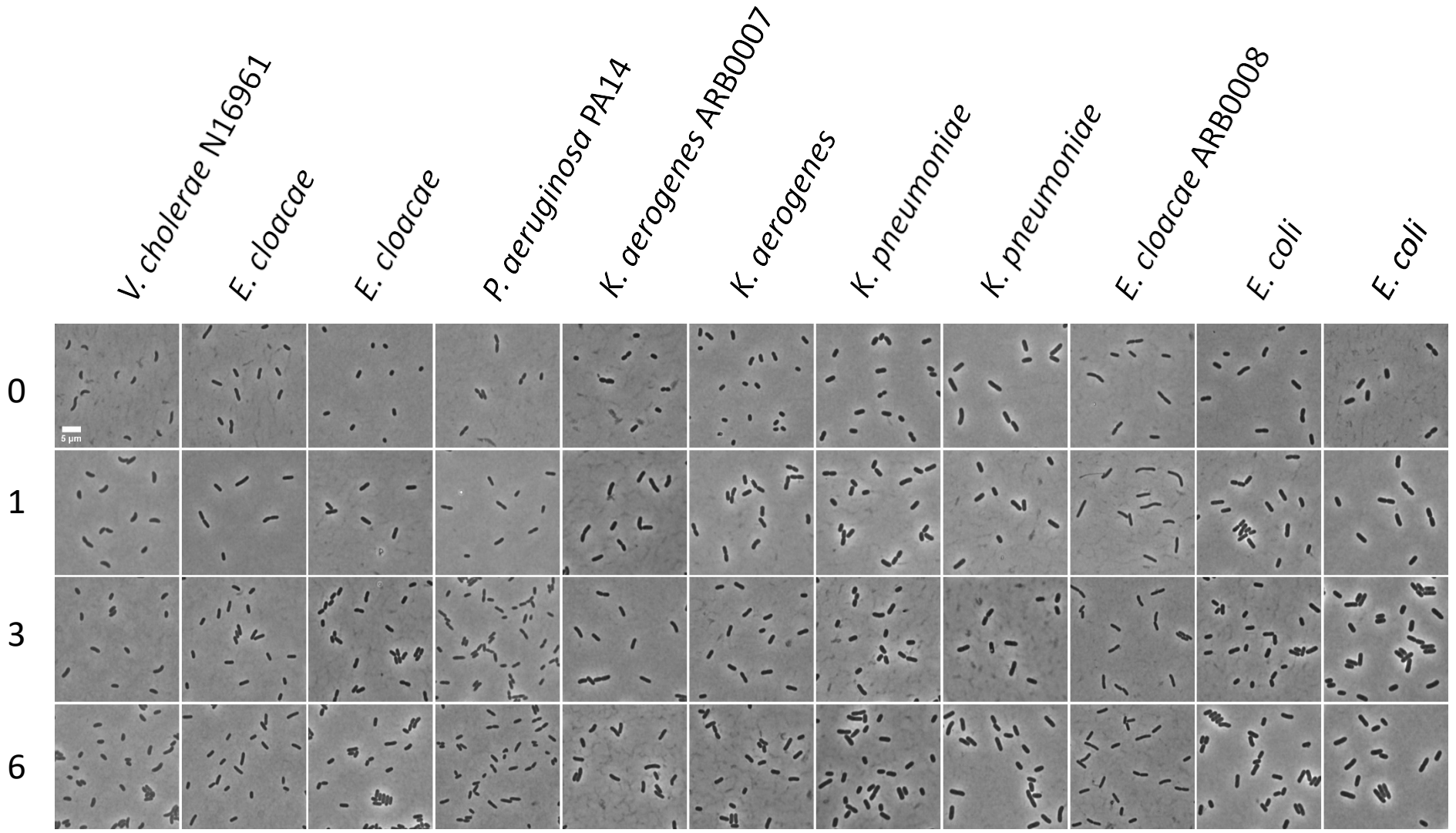

V. cholerae N16961
E. cloacae
E. cloacae
P. aeruginosa PA14
K. aerogenes ARB0007
K. aerogenes
K. pneumoniae
K. pneumoniae
E. cloacae ARB0008
E. coli
E. coli
0
1
3
6
5 µm

Fig. S10

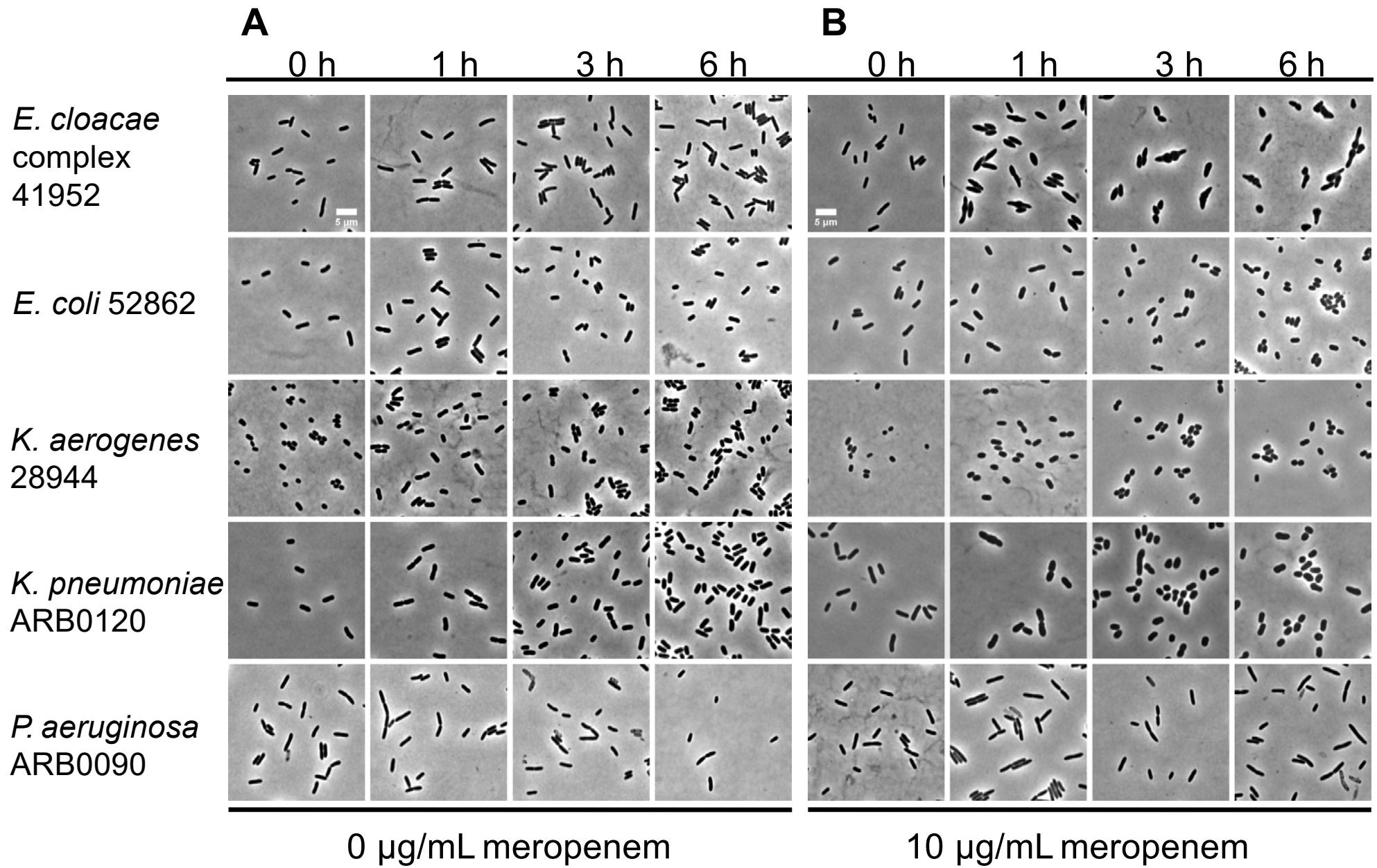

A
B
0 h
1 h
3 h
6 h
0 h
1 h
3 h
6 h
E. cloacae complex 41952
E. coli 52862
K. aerogenes 28944
K. pneumoniae ARB0120
P. aeruginosa ARB0090
5 µm
5 µm
0 µg/mL meropenem
10 µg/mL meropenem

Fig. S11

Supplemental Figure Legends

Figure S1. Spheroplast formation and recovery in *V. cholerae* N16961

(A) Survival (cfu/mL, blue; OD_{600}, red) in the presence of 10 µg/mL meropenem; error bars show the standard error of the mean of three biological replicates. **(B)** Spheroplast formation at 0, 1, 3, and 6 hours after exposure to 10 µg/mL meropenem. **(C)** Time-lapse images showing recovery upon removal of meropenem with purified NDM-1 carbapenemase (frames were acquired 5 min apart). Scale bars, 5 µm.

Figure S2. Spheroplast formation and recovery in *P. aeruginosa* PA14

(A) Survival (cfu/mL, solid lines; OD_{600}, dotted liines) in the presence of 10 µg/mL meropenem, error bars show the standard error of the mean of three biological replicates. **(B)** Spheroplast formation at 0, 1, 3, and 6 hours after exposure to 10 µg/mL meropenem. **(C)** Time-lapse montage of spheroplasts upon removal of meropenem after 6 hours of treatment. The antibiotic was removed by addition of purified NDM-1 carbapenemase, followed by time-lapse microscopy on BHI+ agarose pads (0.8 % [w/v] agarose). Images were then acquired 5 min apart for another 2 hours. Both *E. coli* isolates were omitted since no spheroplasts were observed after 6 hours of meropenem treatment. Scale bars, 5 µm.

Figure S3. Growth of susceptible/non-resistant and carbapenemases-producing isolates without antibiotic treatment.

Growth of the indicated isolates in BHI+ (cfu/mL, solid lines; OD_{600}, dotted lines), error bars show standard error of the mean of two biological replicates.

Figure S4. Growth of KPC-producing *Enterobacteriaceae* in the presence of meropenem. Growth of the indicated isolates in BHI+ (cfu/mL, solid lines; OD_{600}, dotted lines) supplemented with 10 µg/mL meropenem, error bars show standard error of the mean of two biological replicates.

Figure S5. Spheroplast formation and recovery in *E. cloacae* ATCC 13047

(A) Spheroplast formation at 0, 1, 3, and 6 hours after exposure to 10 µg/mL meropenem in BHI+. **(B)** Time-lapse montage of spheroplast recovery upon removal of meropenem after 6 hours of treatment. The antibiotic was removed by addition of purified NDM-1 carbapenemase, followed by time-lapse microscopy on BHI+ agarose pads (0.8 % [w/v] agarose). Images were acquired 5 min apart for another 2 hours. Scale bars, 5 µm.

Figure S6. Spheroplast formation and recovery in *K. aerogenes* ARB0007

(A) Spheroplast formation at 0, 1, 3, and 6 hours after exposure to 10 µg/mL meropenem in BHI+. **(B)** Time-lapse montage of spheroplast recovery upon removal of meropenem after 6 hours of treatment. The antibiotic was removed by addition of purified NDM-1 carbapenemase, followed by time-lapse microscopy on BHI+/0.8% (w/v) agarose. Images were acquired 5 min apart for another 2 hours. Scale bars, 5 µm.

Figure S7. Spheroplast formation and recovery in *K. pneumoniae* WCM0002

(A) Spheroplast formation at 0, 1, 3, and 6 hours after exposure to 10 µg/mL meropenem. **(B)** Time-lapse montage of spheroplast recovery upon removal of meropenem after 6 hours of treatment. The antibiotic was removed by addition of purified NDM-1 carbapenemase, followed by time-lapse microscopy on BHI+ agarose pads (0.8 % [w/v] agarose). Images were acquired 5 min apart for another 2 hours. Scale bars, 5 µm.

Figure S8. Spheroplast formation and recovery in *E. cloacae* ARB0008

(A) Spheroplast formation at 0, 1, 3, and 6 hours after exposure to 10 µg/mL meropenem. **(B)** Time-lapse montage of spheroplast recovery upon removal of meropenem after 6 hours of treatment. The antibiotic was removed by addition of purified NDM-1 carbapenemase, followed by time-lapse microscopy on BHI+ agarose pads (0.8 % [w/v] agarose). Images were acquired 5 min apart for another 2 hours. Scale bars, 5 µm.

Figure S9. Absence of spheroplasts in *E. coli* isolates. Overnight cultures of *E. coli* WCM0001 **(A)**, and TUV93-0 **(B)** were subcultured 1:10 (final volume 5 mL) into pre-warmed BHI+ liquid medium supplemented with 10 µg/mL meropenem and imaged at the indicated time points. Scale bar, 5 µm.

Figure S10. Cell Morphology without antibiotic treatment. Overnight cultures of the indicated isolates were diluted 10-fold into BHI+ liquid media, and imaged at the indicated time points. Scale bar, 5 µm.

Figure S11. Cell Morphology of KPC-producing *Enterobacteriaceae*.

Overnight cultures of the indicated isolates were diluted 10-fold into fresh BHI+ liquid media containing vehicle **(A)**, or meropenem (10 µg/mL) **(B)**, and imaged at the indicated time points. Scale bar, 5 µm.

Supplemental Movie 1. *E. cloacae* WCM0001 post-meropenem recovery.

Time-lapse movie of *E. cloacae* WCM0001 spheroplasts upon removal of meropenem after 6 hours of treatment. The antibiotic was removed by addition of purified NDM-1 carbapenemase, followed by time-lapse microscopy on BHI+ agarose pads (0.8 % [w/v] agarose). Images were then acquired 5 min apart for another 2 hours.

Supplemental Movie 2. *K. aerogenes* WCM0001 post-meropenem recovery.

Time-lapse movie of *K. aerogenes* WCM0001 spheroplasts upon removal of meropenem after 6 hours of treatment. The antibiotic was removed by addition of purified NDM-1 carbapenemase, followed by time-lapse microscopy on BHI+ agarose pads (0.8 % [w/v] agarose). Images were then acquired 5 min apart for another 2 hours.

Supplemental Movie 3. *K. pneumoniae* WCM0001 post-meropenem recovery.

Time-lapse movie of *K. pneumoniae* WCM0001 spheroplasts upon removal of meropenem after 6 hours of treatment. The antibiotic was removed by addition of purified NDM-1 carbapenemase, followed by time-lapse microscopy on BHI+ agarose pads (0.8 % [w/v] agarose). Images were then acquired 5 min apart for another 2 hours.

Supplemental Movie 4. *V. cholerae* N16961 post-meropenem recovery.

Time-lapse movie of *V. cholerae* N16961 spheroplasts upon removal of meropenem after 6 hours of treatment. The antibiotic was removed by addition of purified NDM-1 carbapenemase, followed by time-lapse microscopy on BHI+ agarose pads (0.8 % [w/v] agarose). Images were then acquired 5 min apart for another 2 hours.

Supplemental Movie 5. *P. aeruginosa* PA14 post-meropenem recovery.

Time-lapse movie of *P. aeruginosa* PA14 spheroplasts upon removal of meropenem after 6 hours of treatment. The antibiotic was removed by addition of purified NDM-1 carbapenemase, followed by time-lapse microscopy on BHI+ agarose pads (0.8 % [w/v] agarose). Images were then acquired 5 min apart for another 2 hours.

Supplemental Movie 6. *E. cloacae* ATCC 13047 post-meropenem recovery.

Time-lapse movie of *E. cloacae* ATCC 13047 spheroplasts upon removal of meropenem after 6 hours of treatment. The antibiotic was removed by addition of purified NDM-1 carbapenemase, followed by time-lapse microscopy on BHI+ agarose pads (0.8 % [w/v] agarose). Images were then acquired 5 min apart for another 2 hours.

Supplemental Movie 7. *K. aerogenes* ARB0007 post-meropenem recovery.

Time-lapse movie of *K. aerogenes* ARB0007 spheroplasts upon removal of meropenem after 6 hours of treatment. The antibiotic was removed by addition of purified NDM-1 carbapenemase, followed by time-lapse microscopy on BHI+ agarose pads (0.8 % [w/v] agarose). Images were then acquired 5 min apart for another 2 hours.

Supplemental Movie 8. *K. pneumoniae* WCM0002 post-meropenem recovery.

Time-lapse movie of *K. pneumoniae* WCM0002 spheroplasts upon removal of meropenem after 6 hours of treatment. The antibiotic was removed by addition of purified NDM-1 carbapenemase, followed by time-lapse microscopy on BHI+ agarose pads (0.8 % [w/v] agarose). Images were then acquired 5 min apart for another 2 hours.

Supplemental Movie 9. *E. cloacae* ARB0008 post-meropenem recovery.

Time-lapse movie of *E. cloacae* ARB0008 spheroplasts upon removal of meropenem after 6 hours of treatment. The antibiotic was removed by addition of purified NDM-1 carbapenemase, followed by time-lapse microscopy on BHI+ agarose pads (0.8 % [w/v] agarose). Images were then acquired 5 min apart for another 2 hours.