

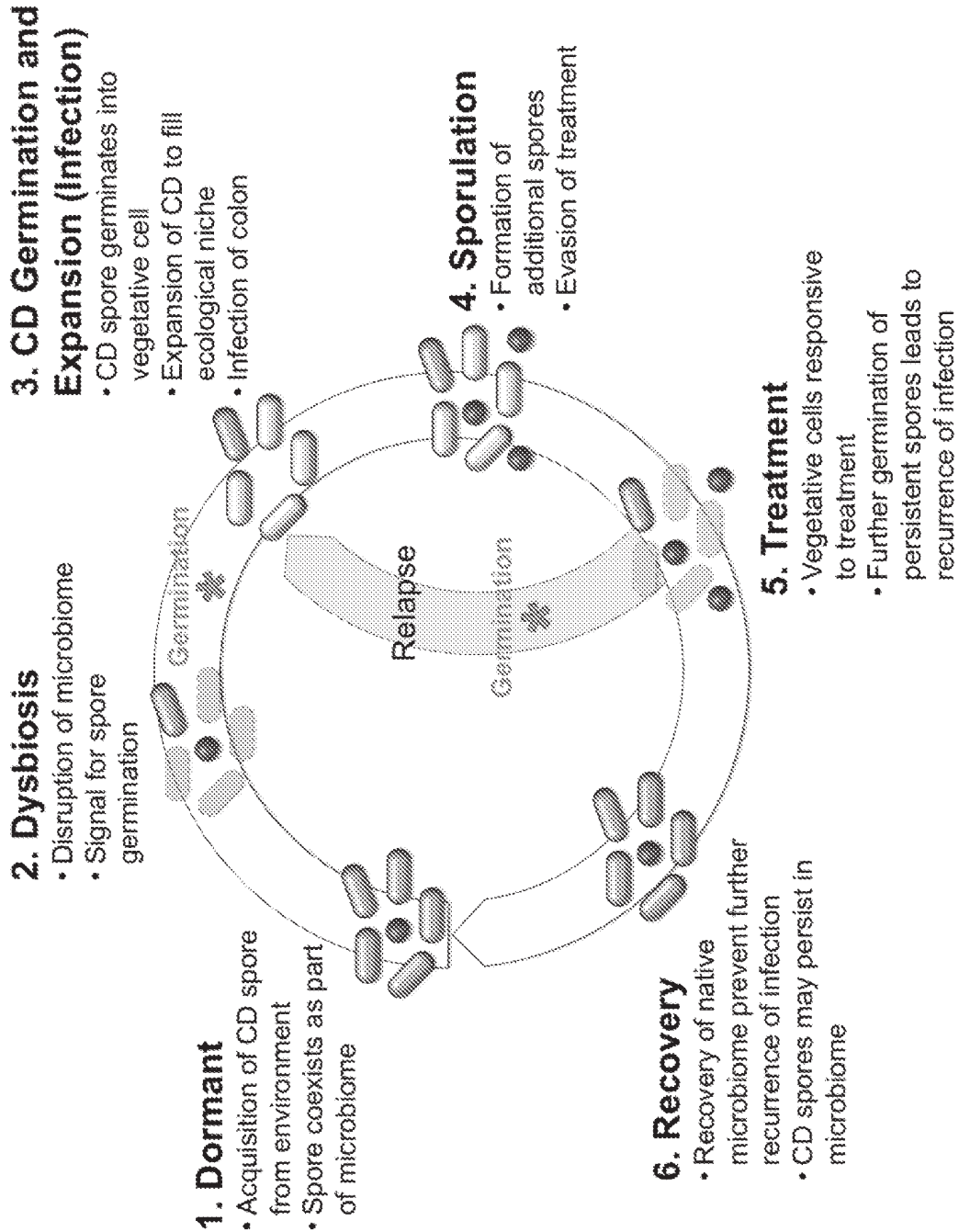


FIGURE 1

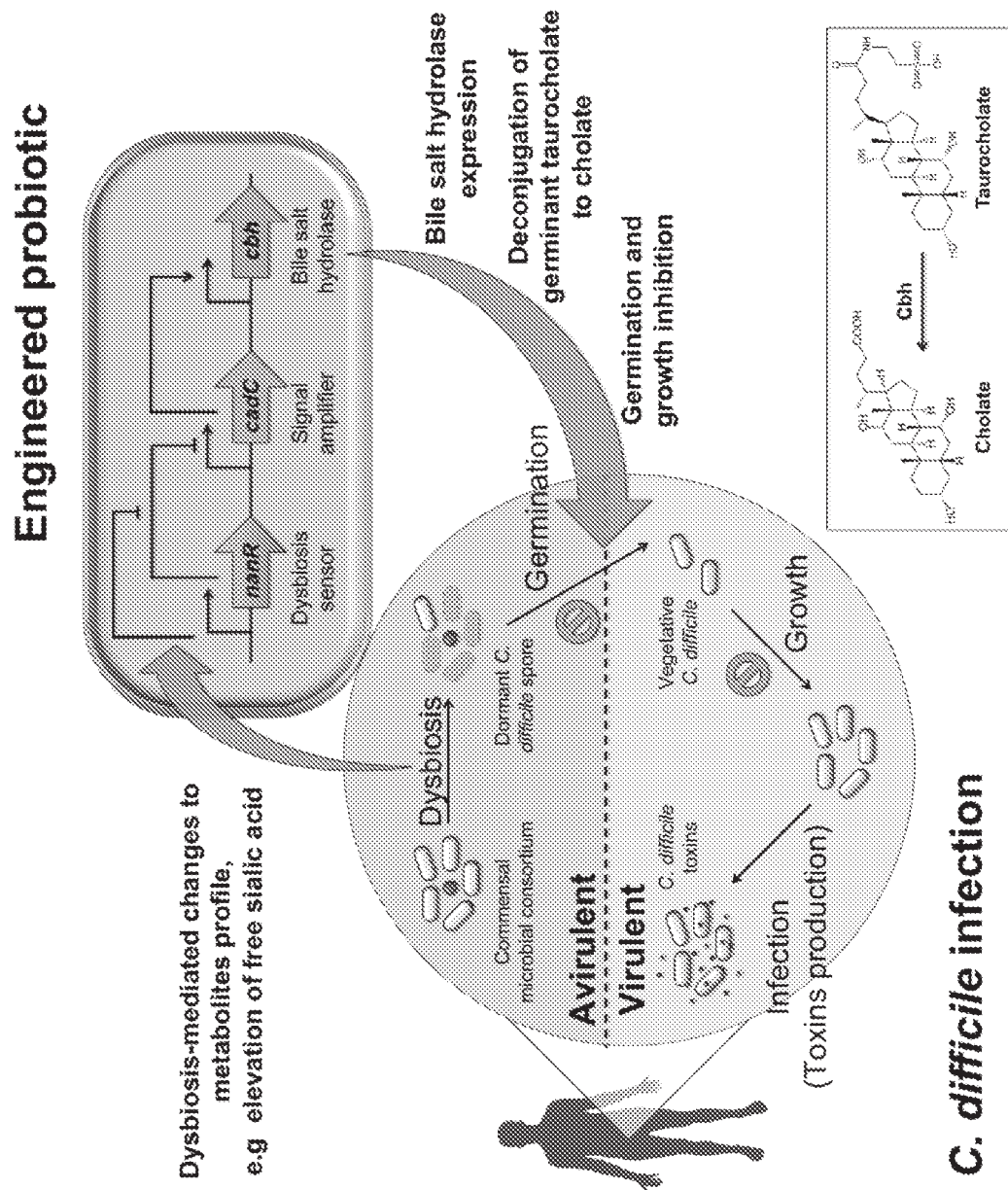


FIGURE 2

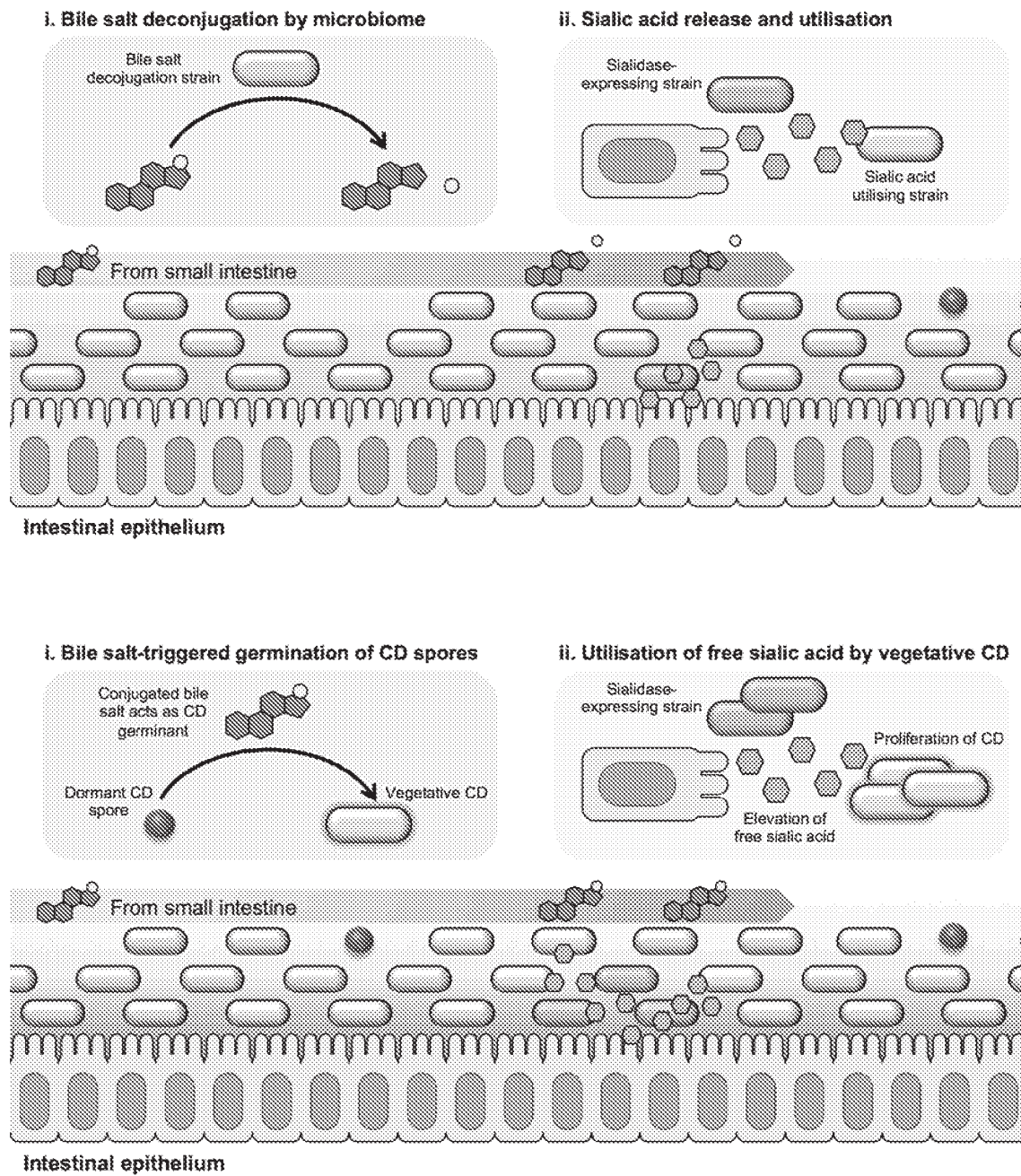
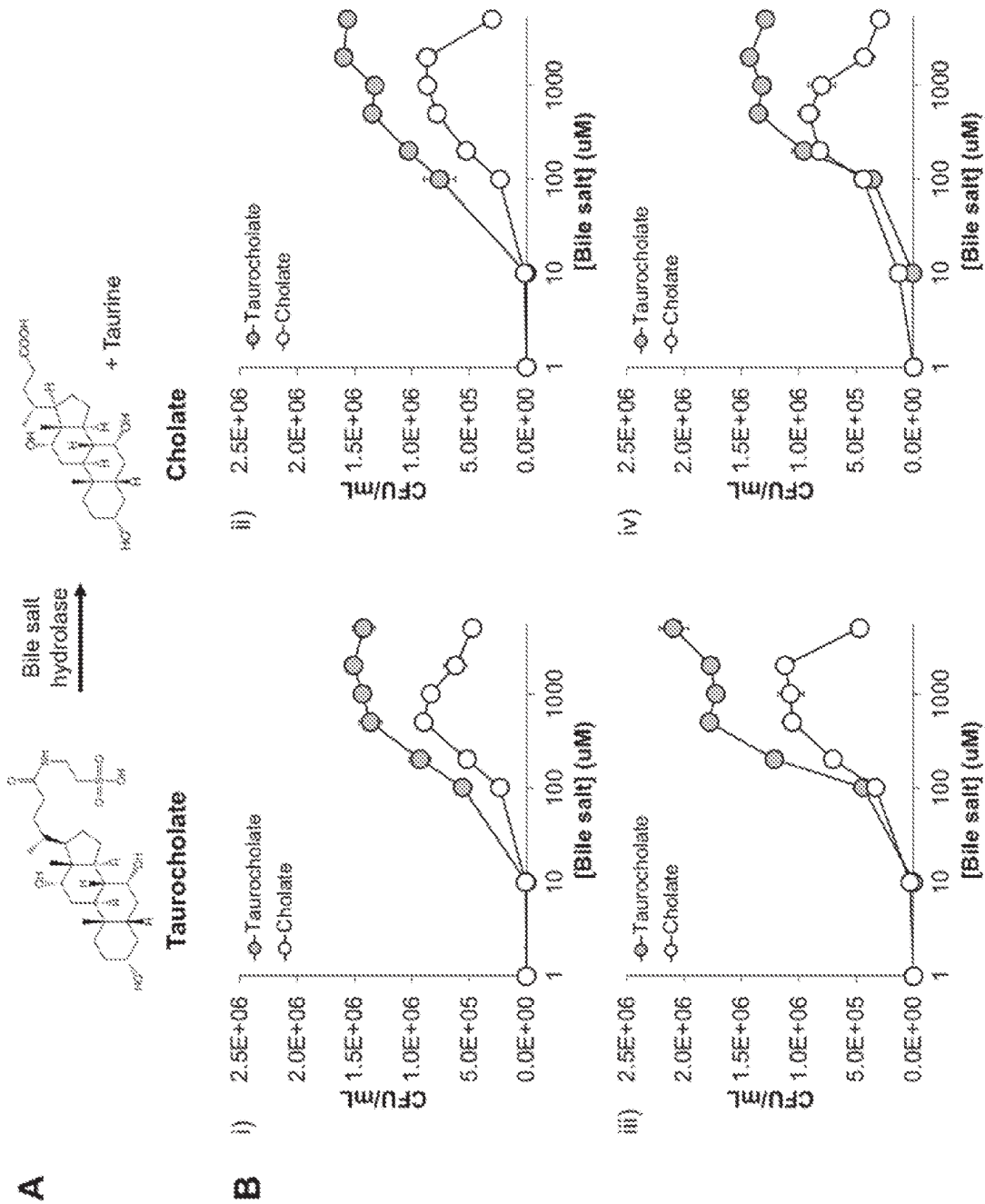


FIGURE 3



**i)**

**Taurocholate**

CFU/mL

[Bile salt] (μM)

Legend: Taurocholate (filled circles), Cholate (open circles)

| [Bile salt] (μM) | Taurocholate (CFU/mL) | Cholate (CFU/mL) |
|------------------|-----------------------|------------------|
| 1                | 0.0E+00               | 0.0E+00          |
| 10               | 0.0E+00               | 0.0E+00          |
| 100              | 1.5E+06               | 1.0E+06          |
| 1000             | 2.5E+06               | 1.5E+06          |

**ii)**

**Cholate**

CFU/mL

[Bile salt] (μM)

Legend: Taurocholate (filled circles), Cholate (open circles)

| [Bile salt] (μM) | Taurocholate (CFU/mL) | Cholate (CFU/mL) |
|------------------|-----------------------|------------------|
| 1                | 0.0E+00               | 0.0E+00          |
| 10               | 0.0E+00               | 0.0E+00          |
| 100              | 1.0E+06               | 5.0E+05          |
| 1000             | 1.5E+06               | 1.0E+06          |

**iii)**

**Taurocholate**

CFU/mL

[Bile salt] (μM)

Legend: Taurocholate (filled circles), Cholate (open circles)

| [Bile salt] (μM) | Taurocholate (CFU/mL) | Cholate (CFU/mL) |
|------------------|-----------------------|------------------|
| 1                | 0.0E+00               | 0.0E+00          |
| 10               | 0.0E+00               | 0.0E+00          |
| 100              | 1.5E+06               | 1.0E+06          |
| 1000             | 2.5E+06               | 1.5E+06          |

**iv)**

**Cholate**

CFU/mL

[Bile salt] (μM)

Legend: Taurocholate (filled circles), Cholate (open circles)

| [Bile salt] (μM) | Taurocholate (CFU/mL) | Cholate (CFU/mL) |
|------------------|-----------------------|------------------|
| 1                | 0.0E+00               | 0.0E+00          |
| 10               | 0.0E+00               | 0.0E+00          |
| 100              | 1.0E+06               | 5.0E+05          |
| 1000             | 1.5E+06               | 1.0E+06          |

FIGURE 4

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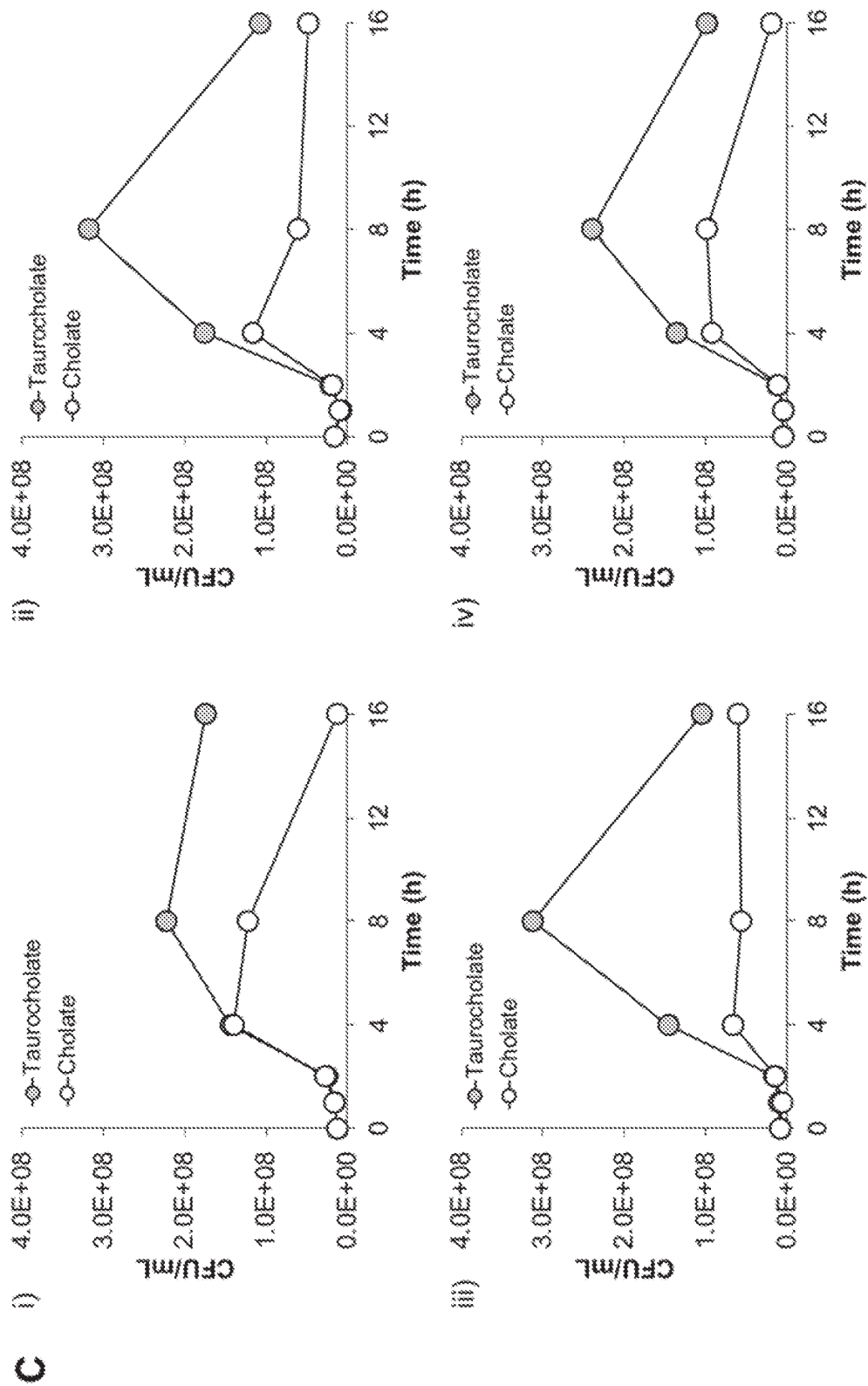


FIGURE 4 (continued)

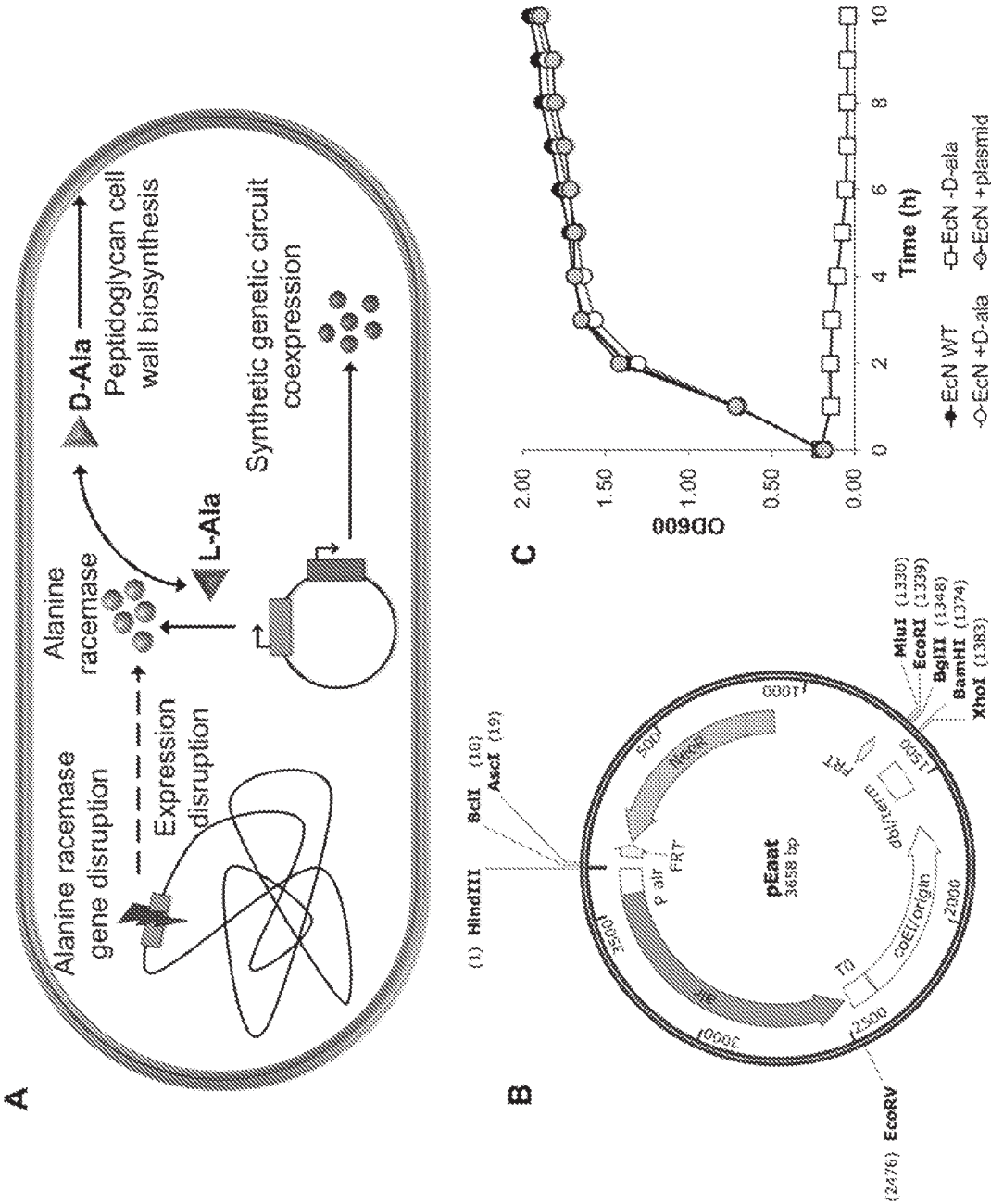


FIGURE 5

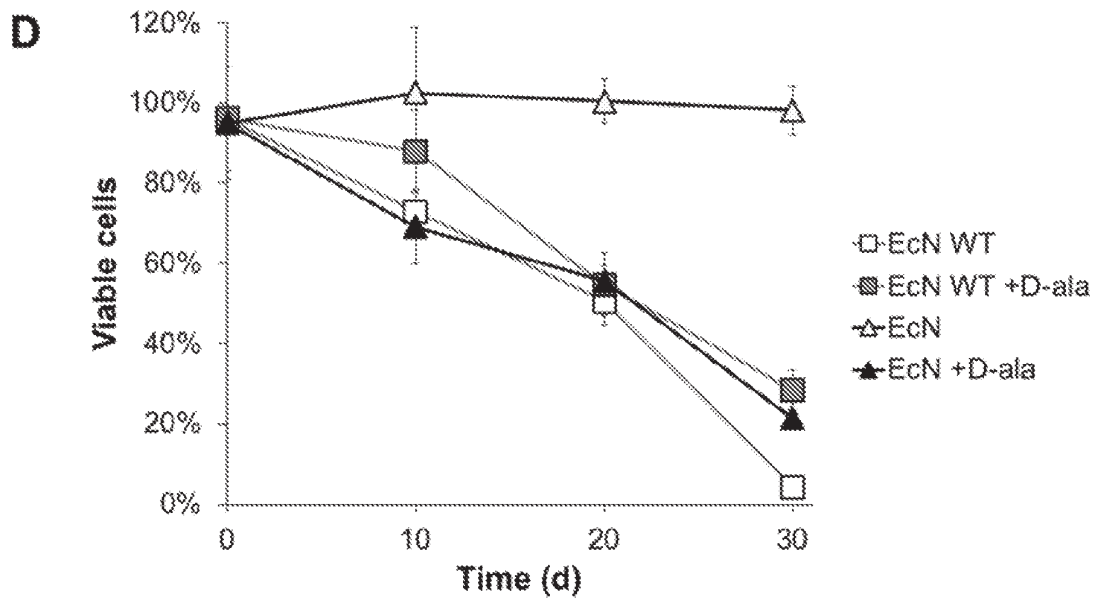
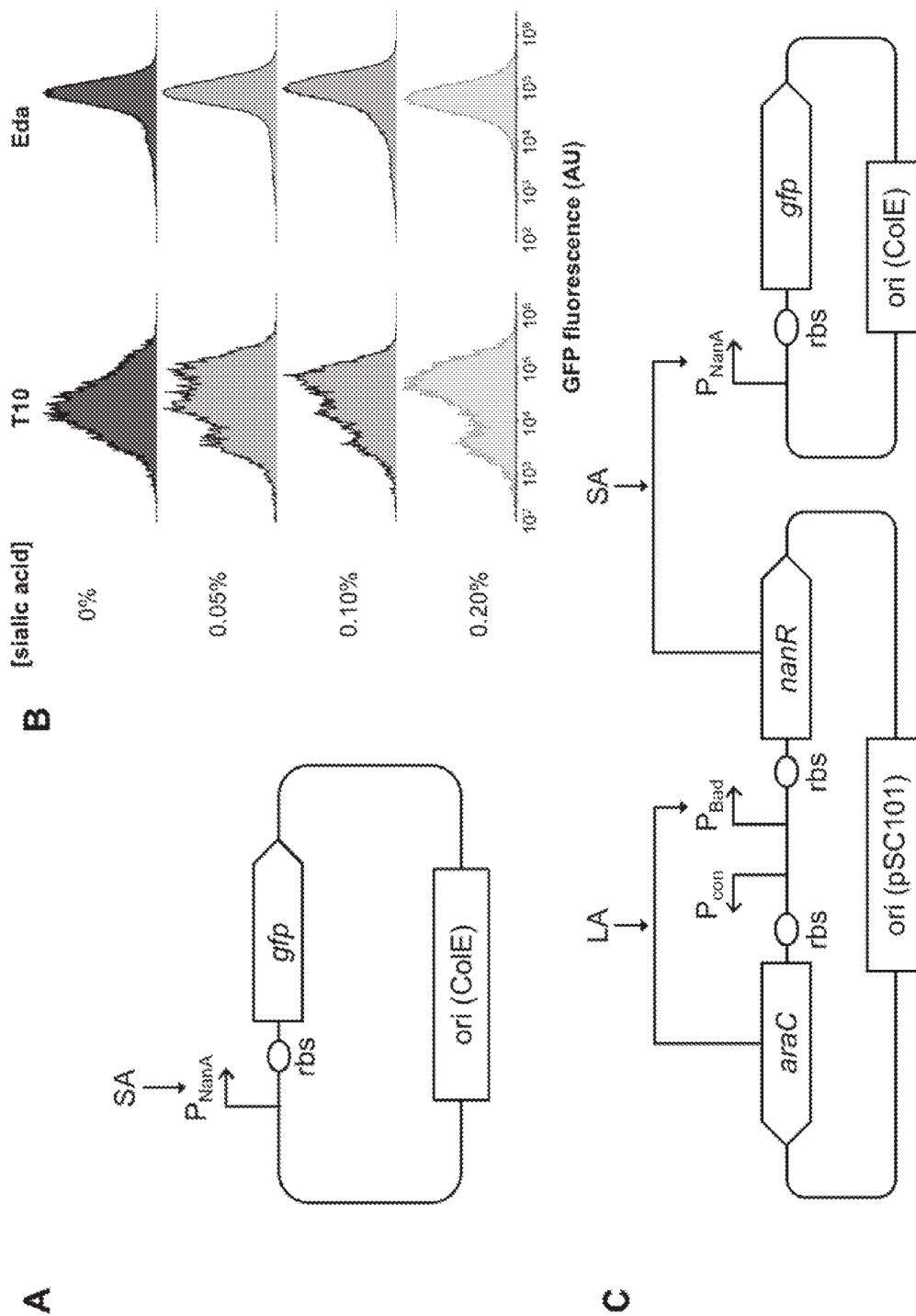


FIGURE 5 (continued)



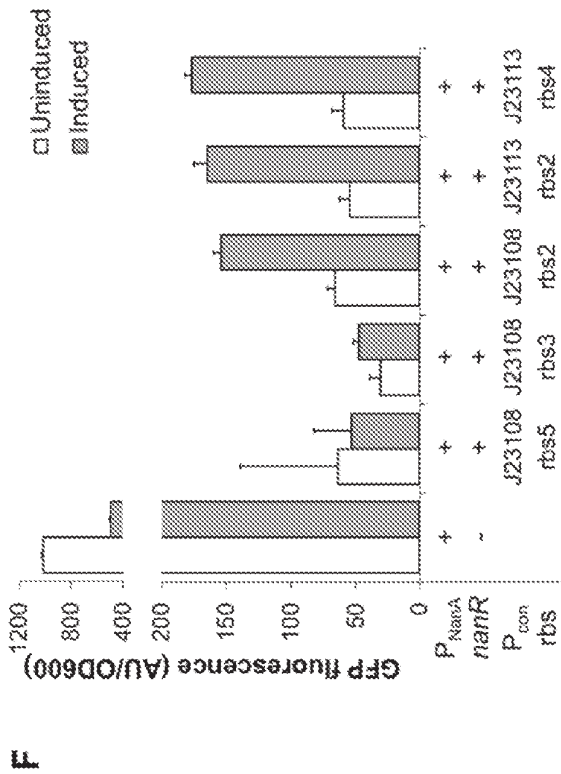
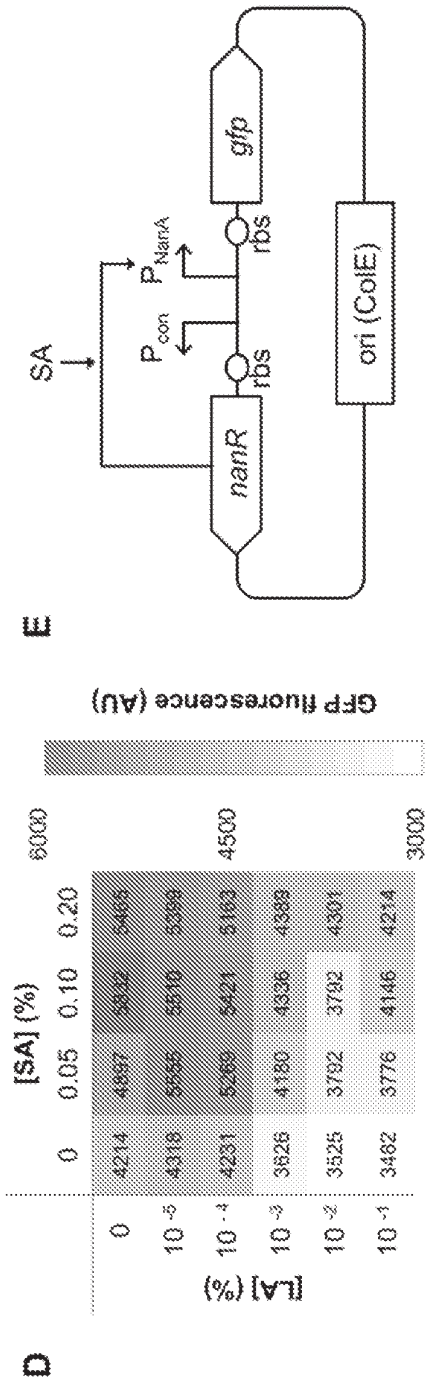


FIGURE 6 (continued)

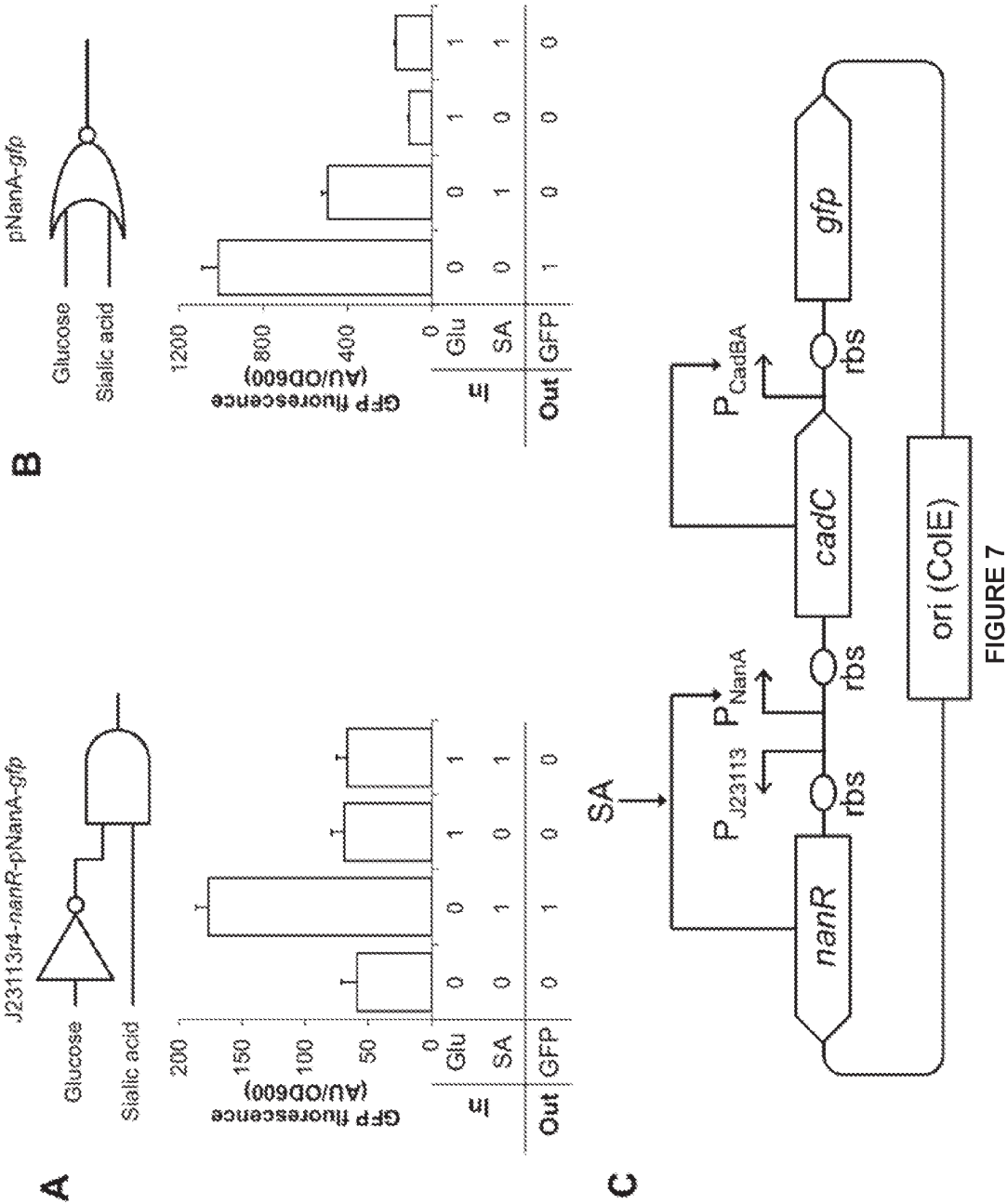


FIGURE 7

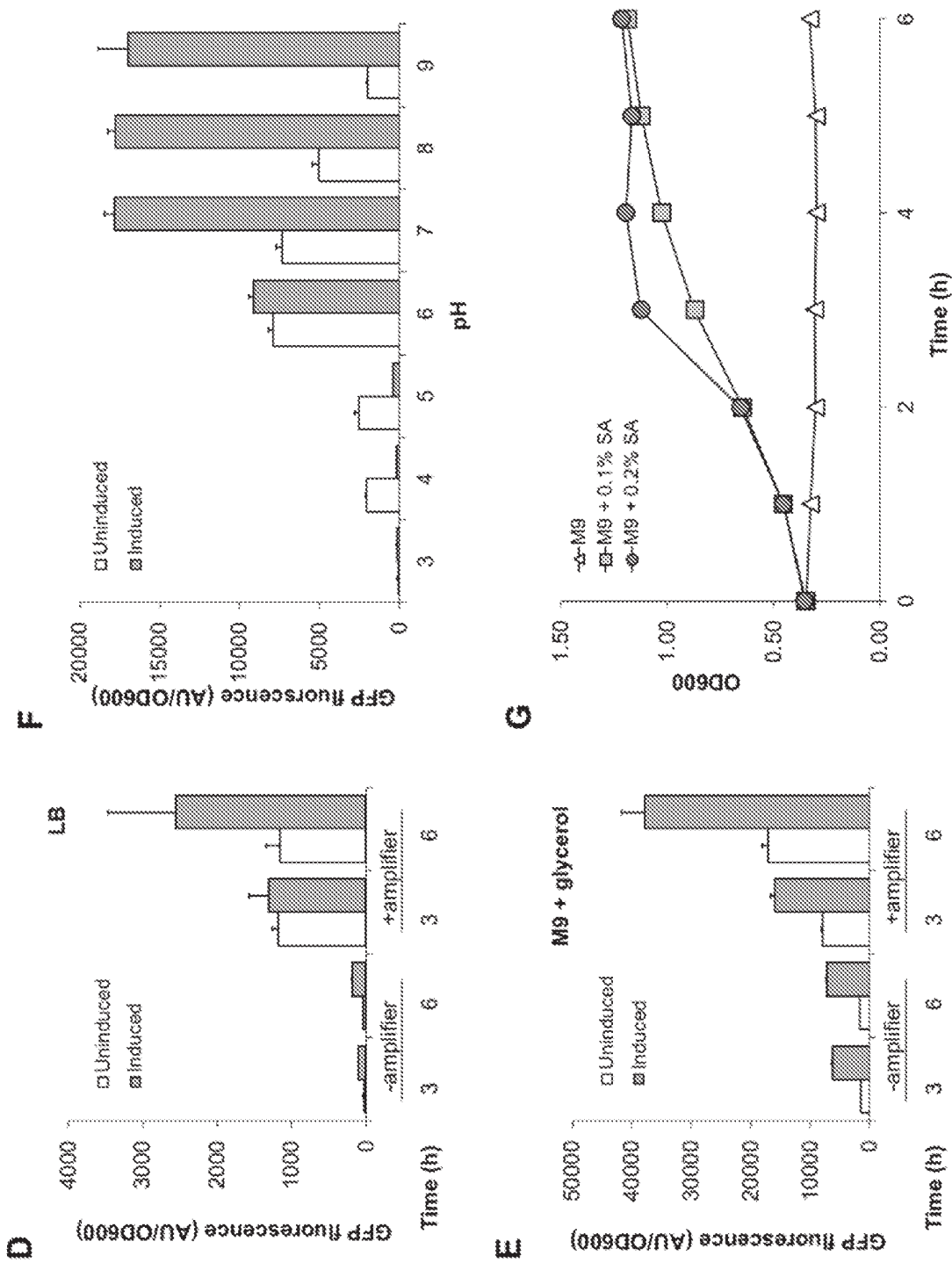


FIGURE 7 (continued)

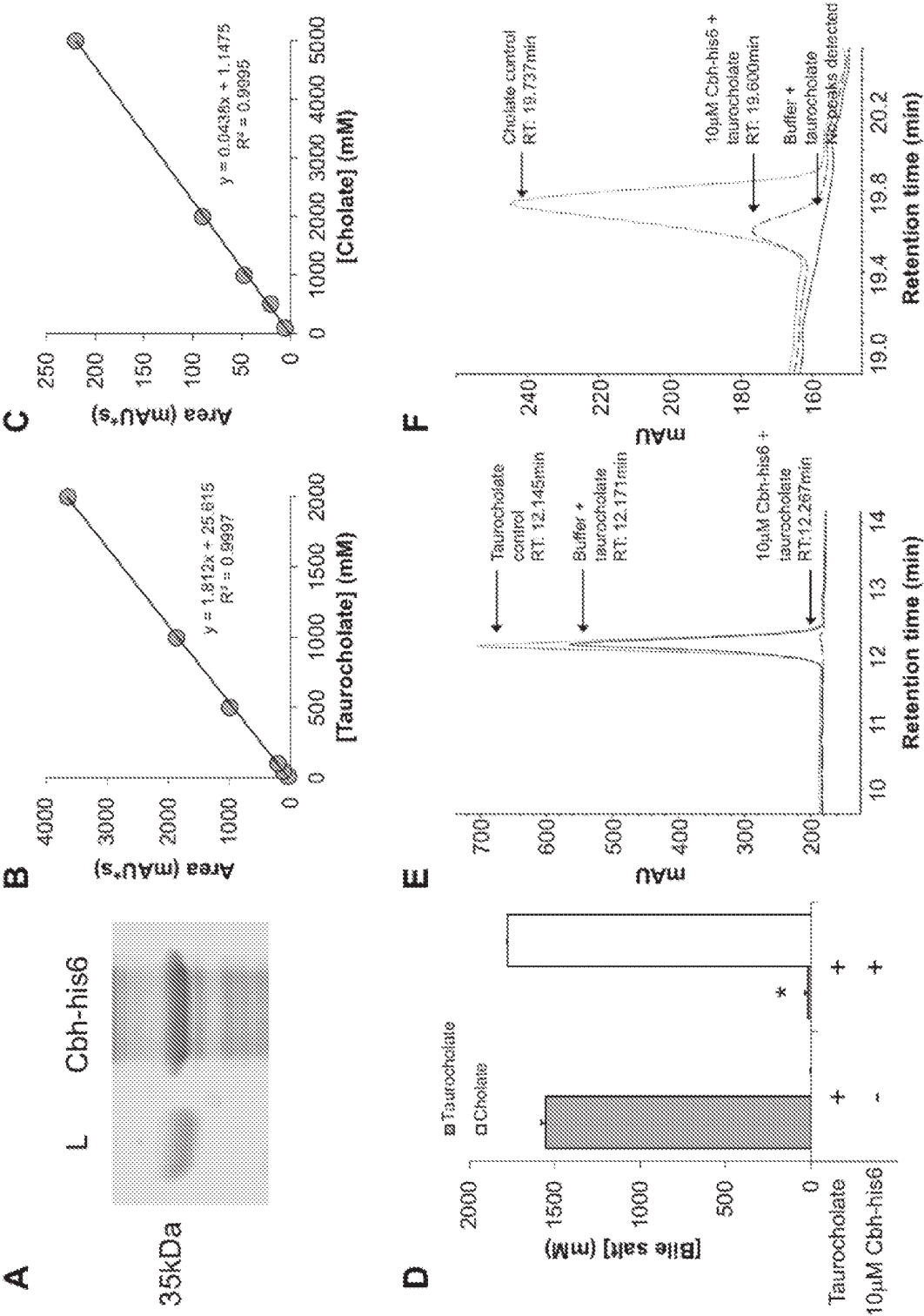


FIGURE 8

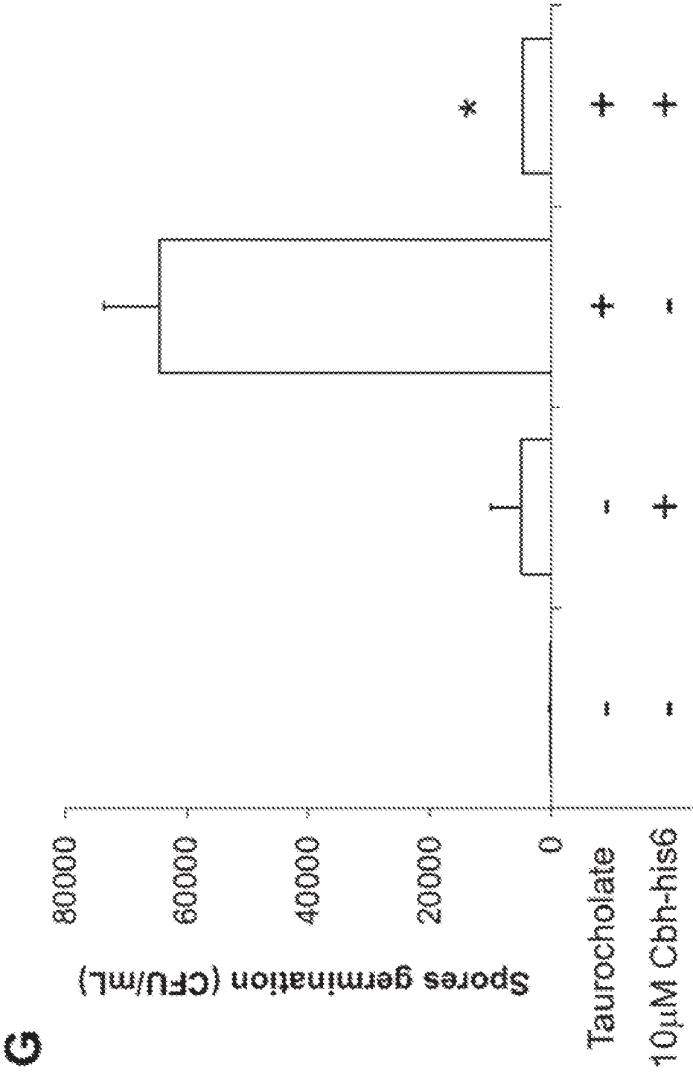


FIGURE 8 (continued)

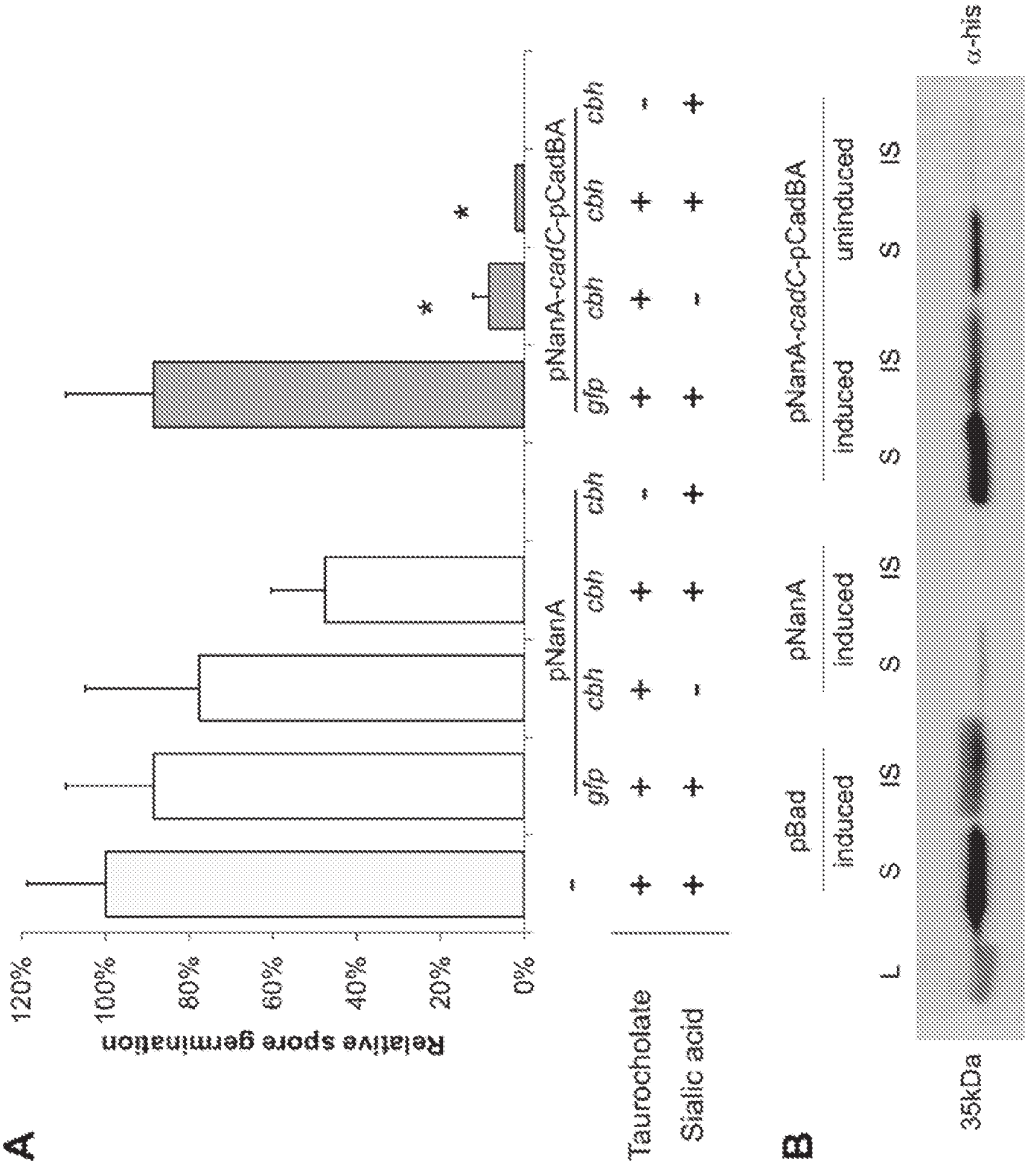


FIGURE 9

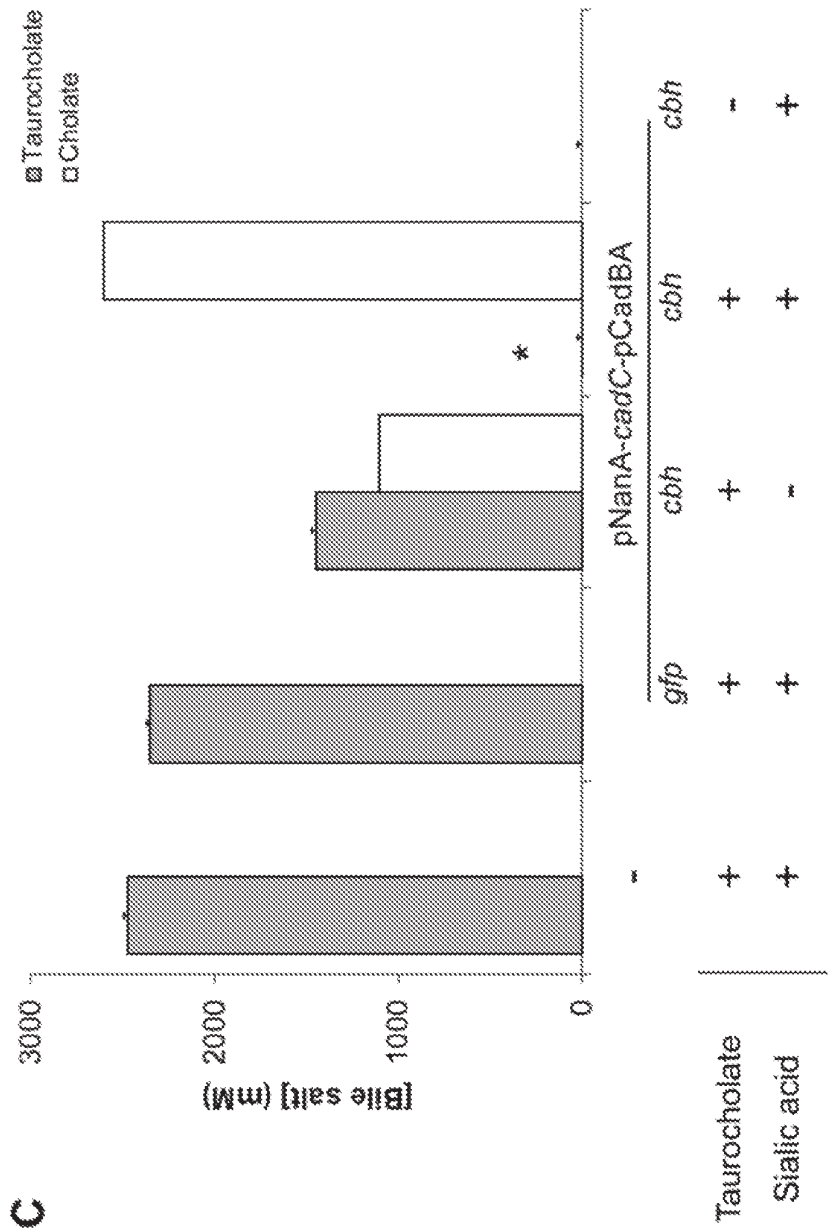
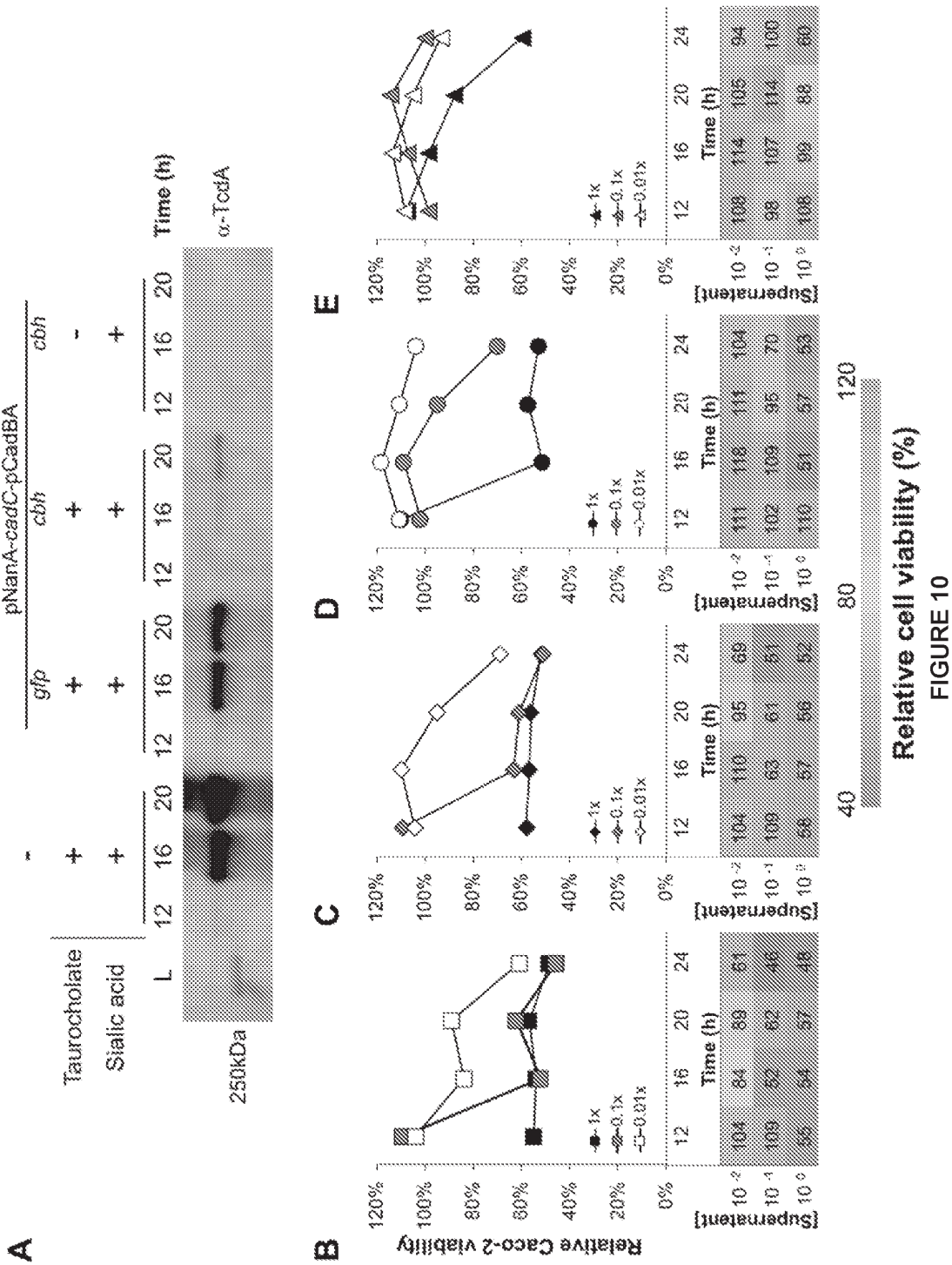


FIGURE 9 (continued)



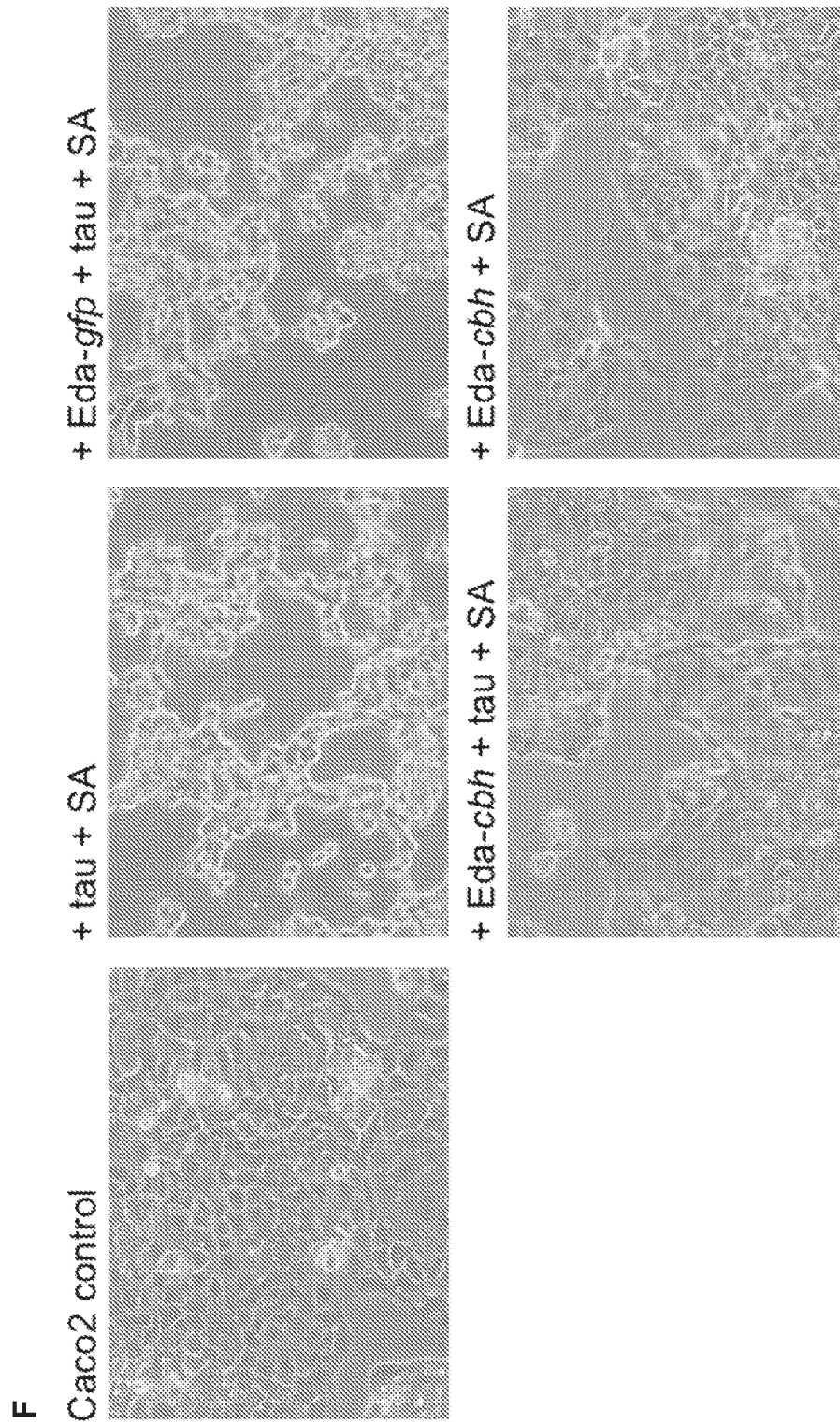
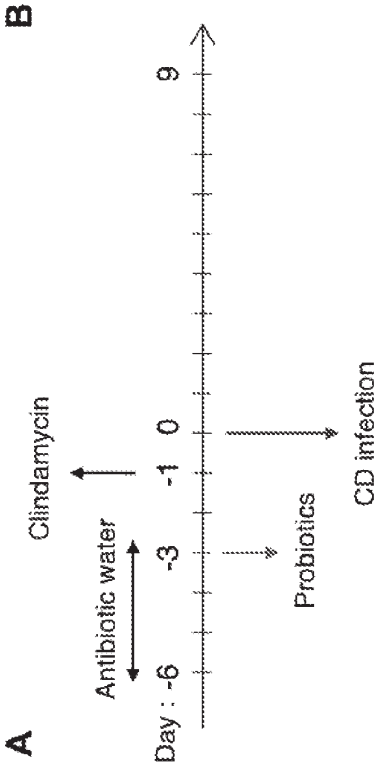


FIGURE 10 (continued)

**A**



**B**

| Group                | Description   | Probiotics Expression Construct                    |
|----------------------|---------------|----------------------------------------------------|
| Treatment            | EcN-cbh       | pEaat ~ J23113r4-nanR ~ pNanA-cadC<br>~ pCadBA-cbh |
| No-sensor control    | EcN-pCon-cbh  | pEaat ~ J23100r5-cbh                               |
| No-amplifier control | EcN-pNanA-cbh | pEaat ~ 113nanR ~ pNanA-cbh                        |
| No-actuator control  | EcN-gfp       | pEaat ~ 113nanR ~ pNanA-cadC ~<br>pCadr5-gfp       |

**C**

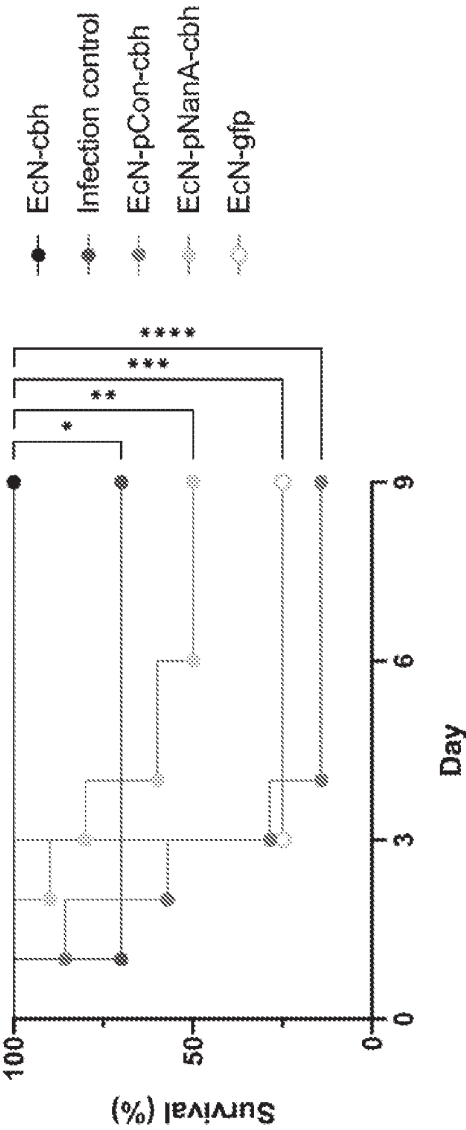


FIGURE 11

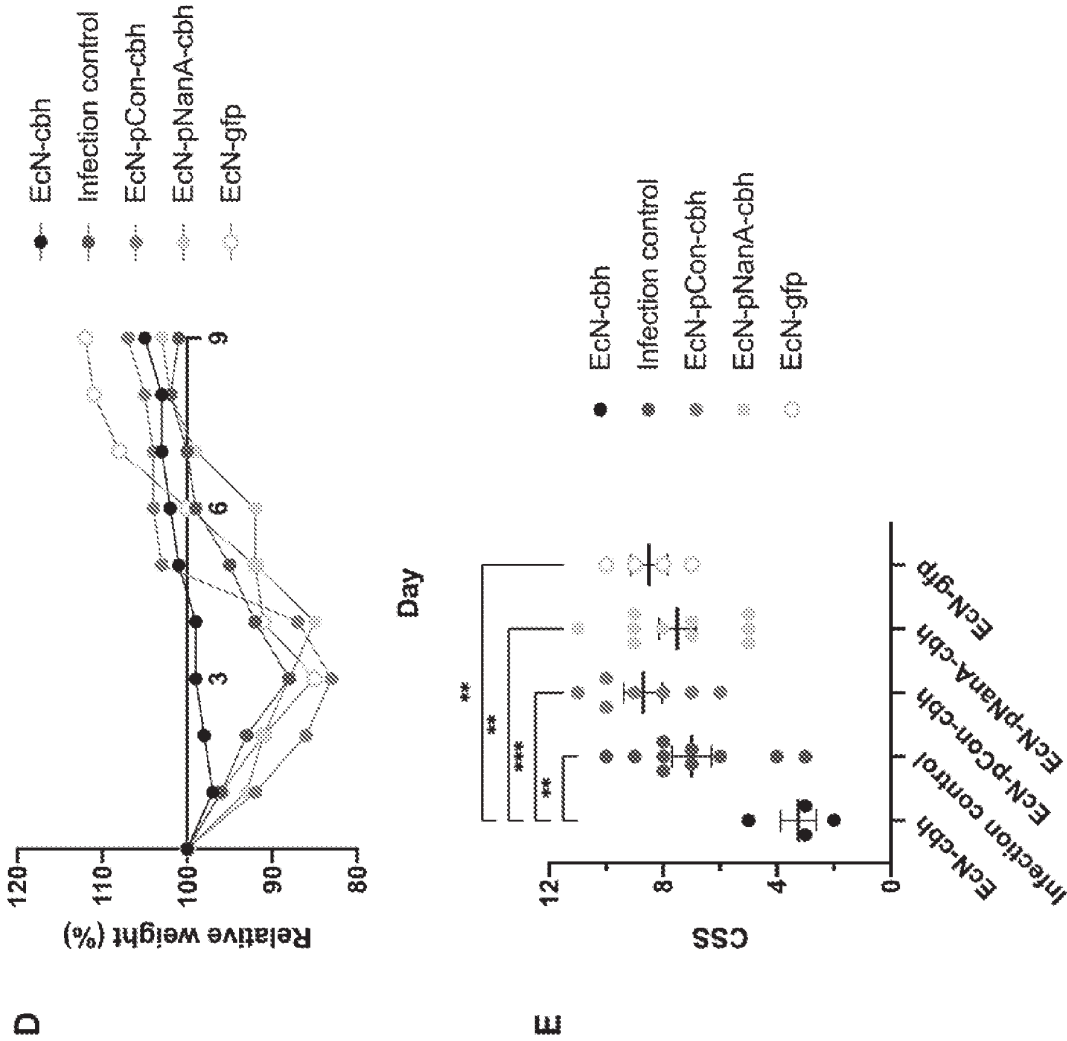


FIGURE 11 (continued)