

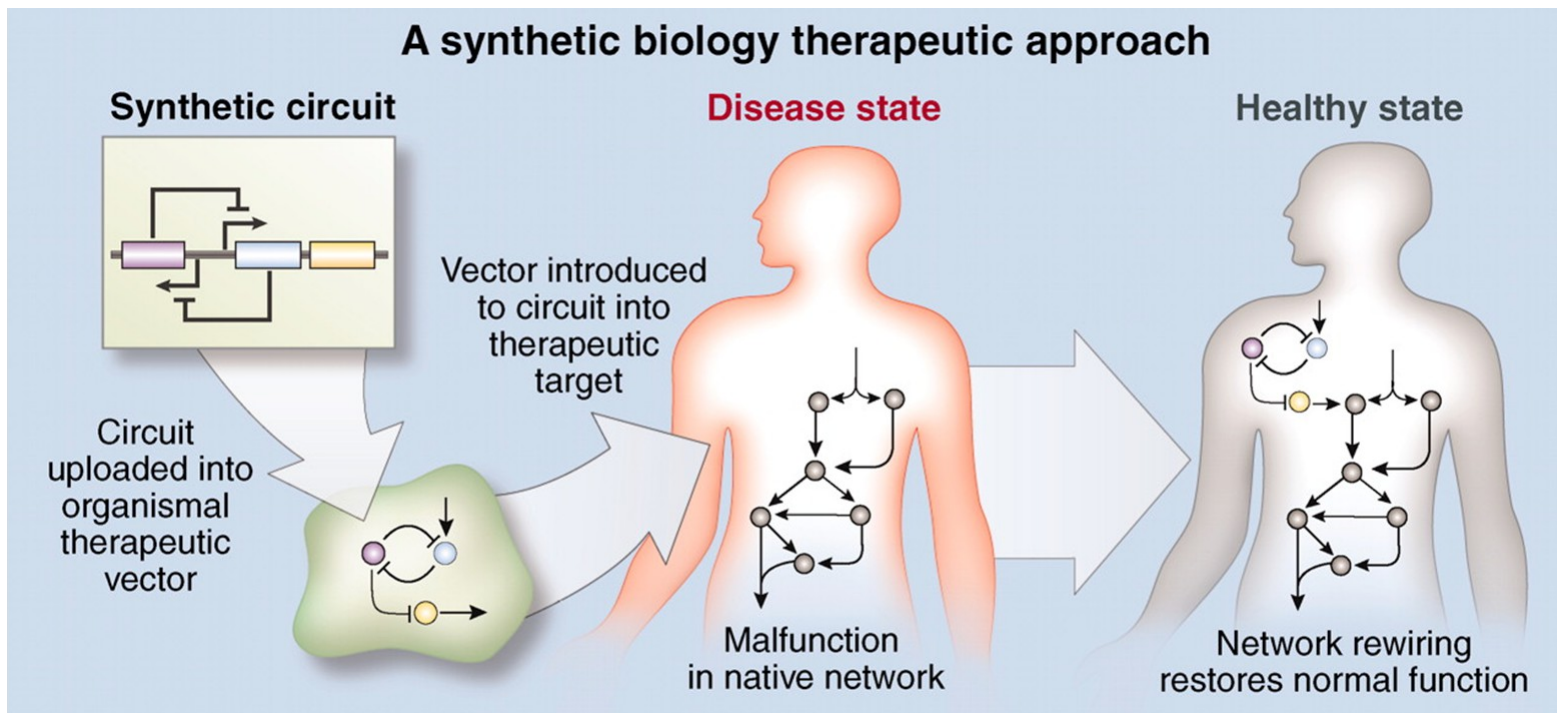
Sintezna biologija: medicina

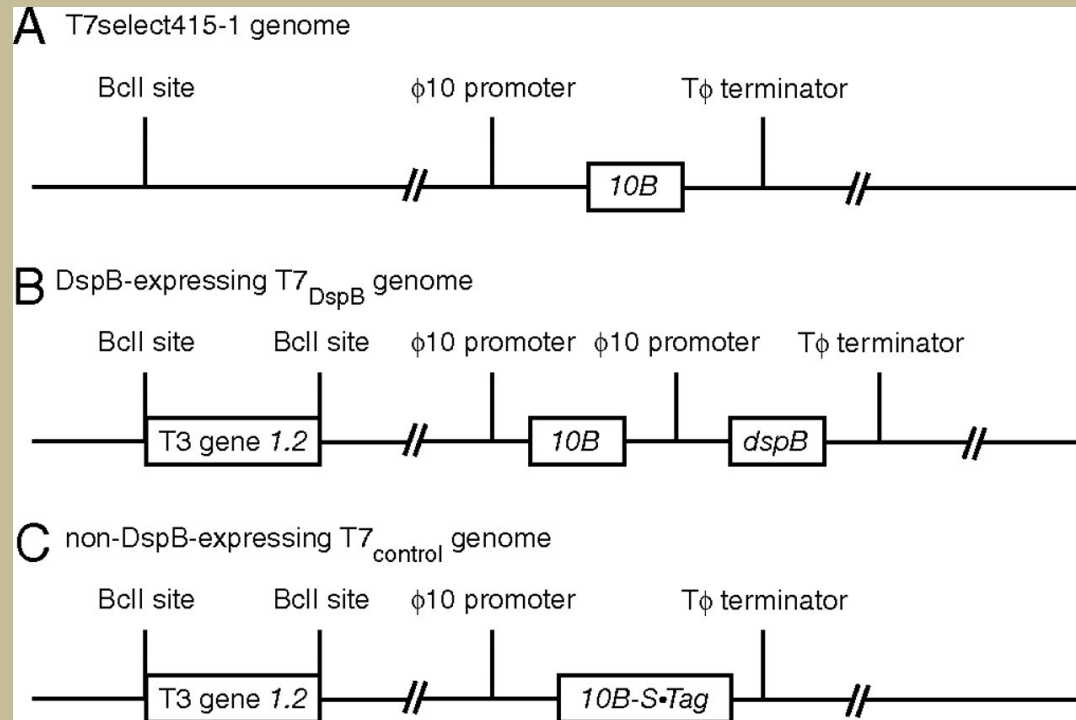
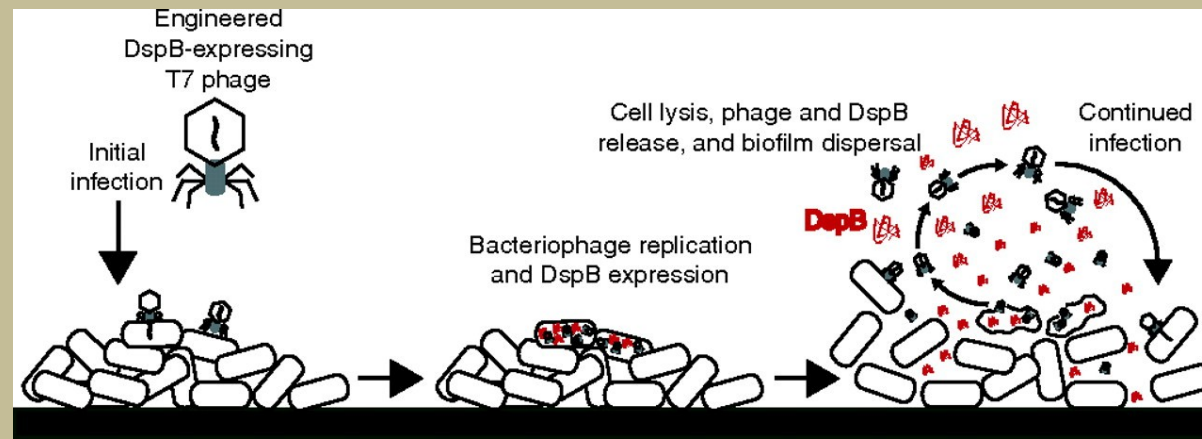


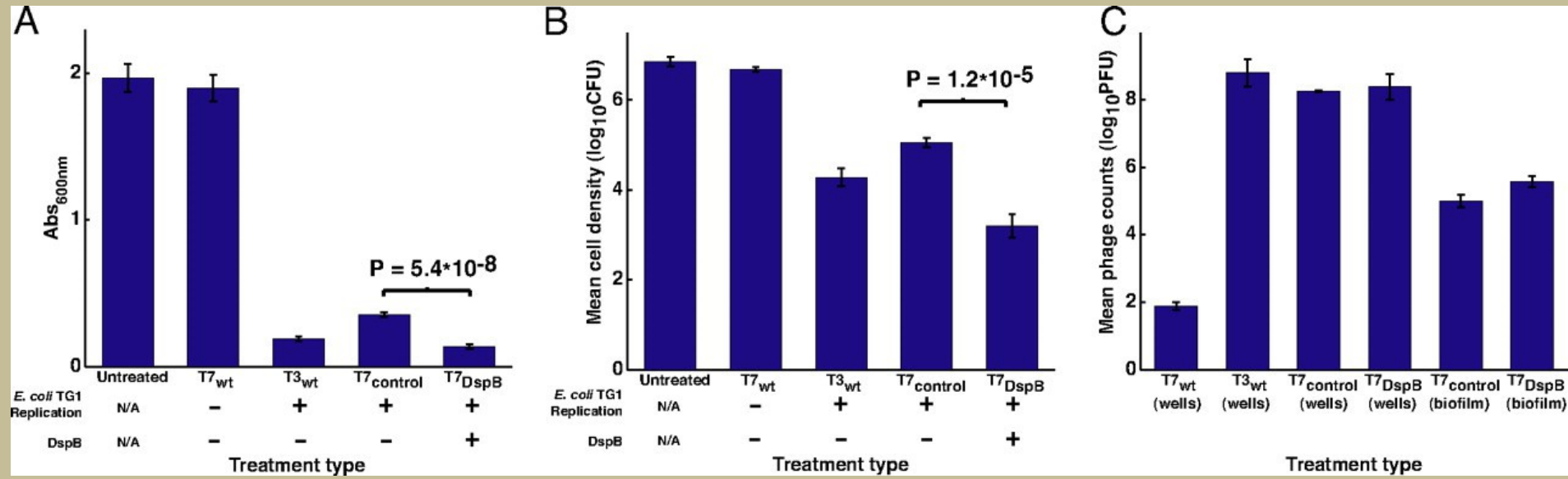
Medicinske aplikacije

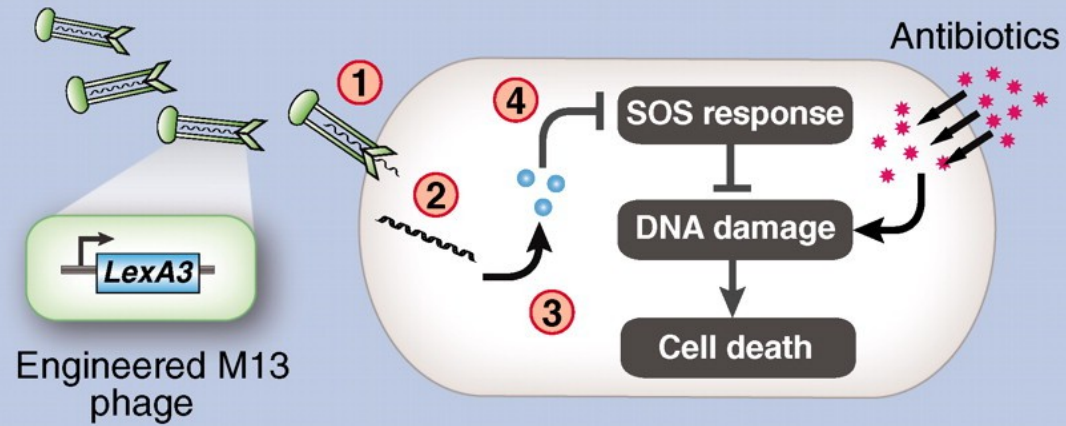
Zdravstvena industrija (*healthcare industry*) predstavlja eno najmočnejših panog in največjih svetovnih tržišč. Sintezna biologija za medicinske aplikacije deluje v smeri pridobivanja cenejših zdravil in izboljšanih materialov. Hkrati pa si prizadeva za razvoj boljših diagnostičnih sredstev, preprečevanje razvoja bolezni in zdravljenje bolezni in okvar. Področja delovanja:

- biosenzorji za prepoznavanje molekul (senzorske molekule ali mikroorganizmi),
- pametna in posebljena zdravila,
- vektorski in dostavni sistemi za zdravljenje,
- izboljšane lastnosti celic,
- tkivno inženirstvo → regenerativna medicina.

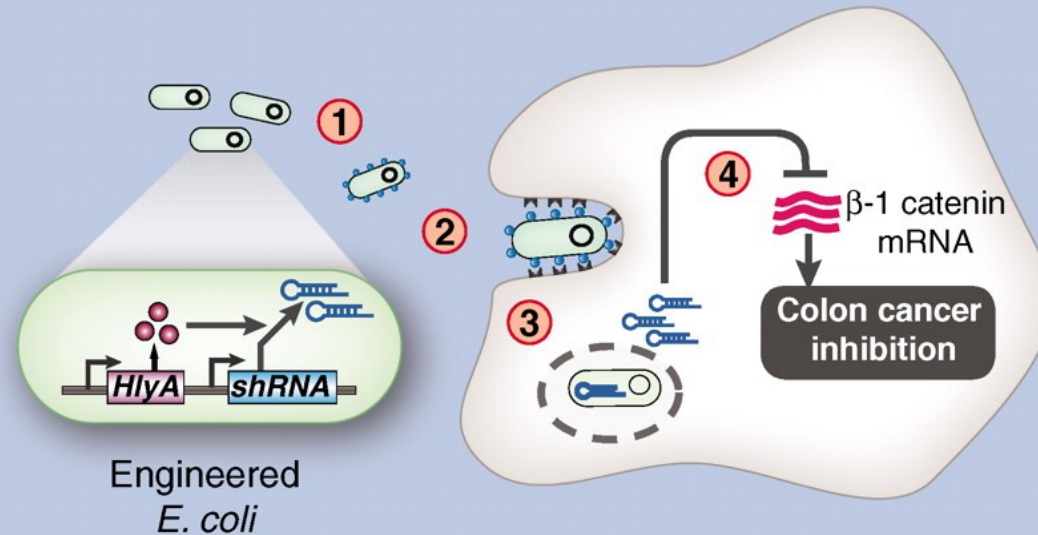






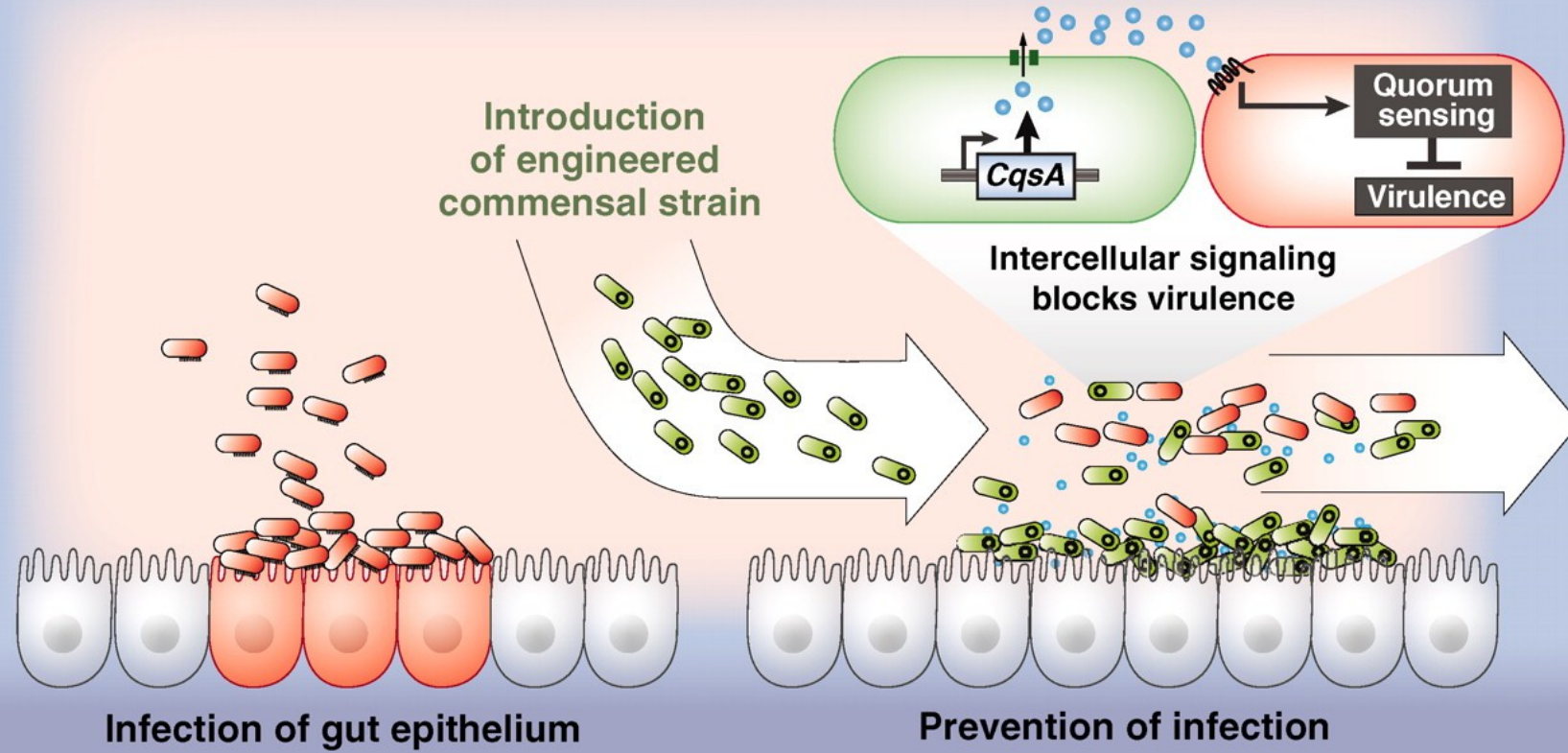
A**Engineered bacteriophage to treat infectious diseases**

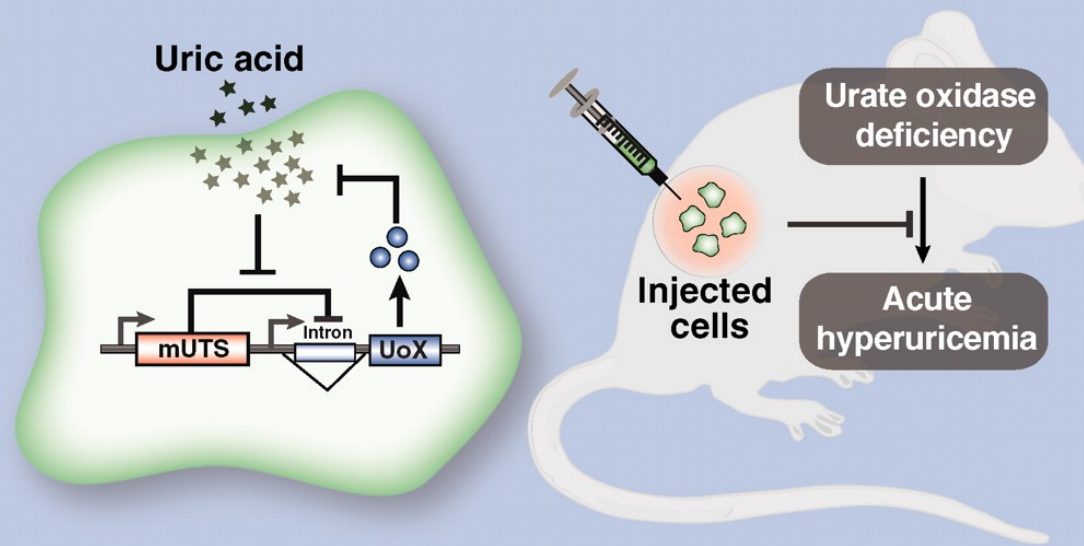
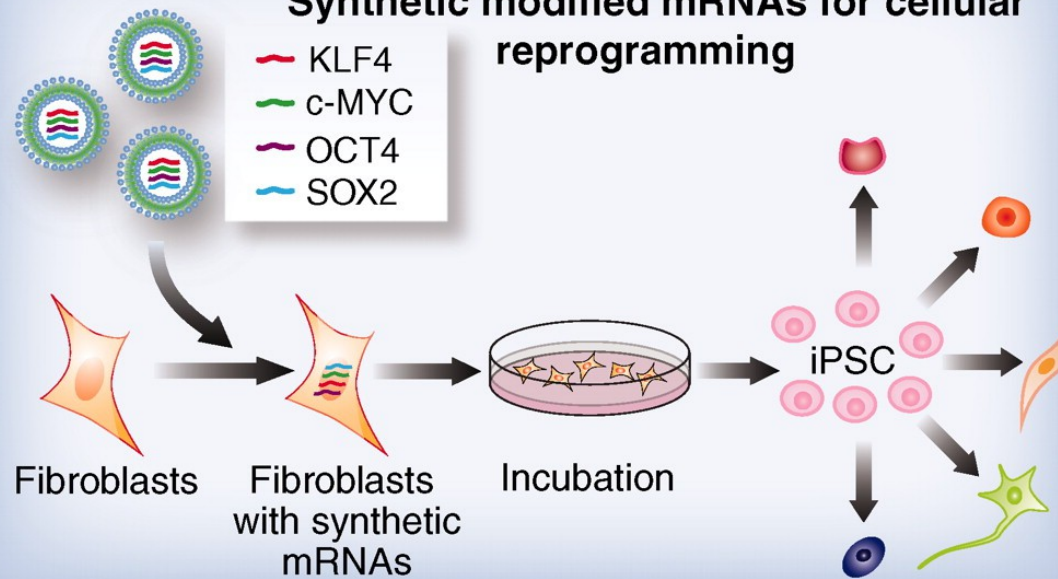
- ① Phage infection
- ② Synthetic construct delivery
- ③ LexA3 production from the delivered construct
- ④ Increased DNA damage and cell death through SOS inhibition by LexA3

B**Engineered bacteria for treatment of cancer**

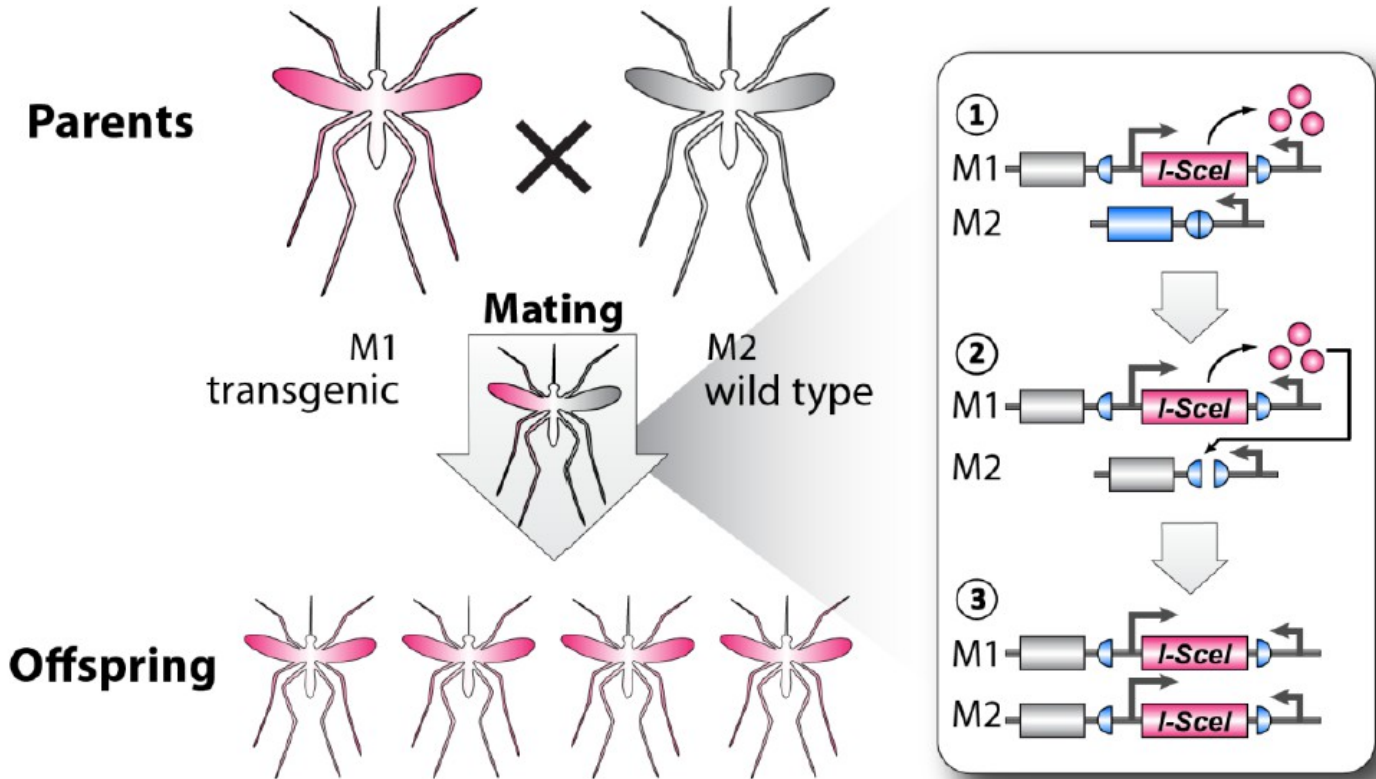
- ① Invasin production
- ② Bacterial invasion of a cancer cell
- ③ Release of shRNA
- ④ Colon cancer inhibition by gene silencing

Preventing cholera infection using engineered gut flora



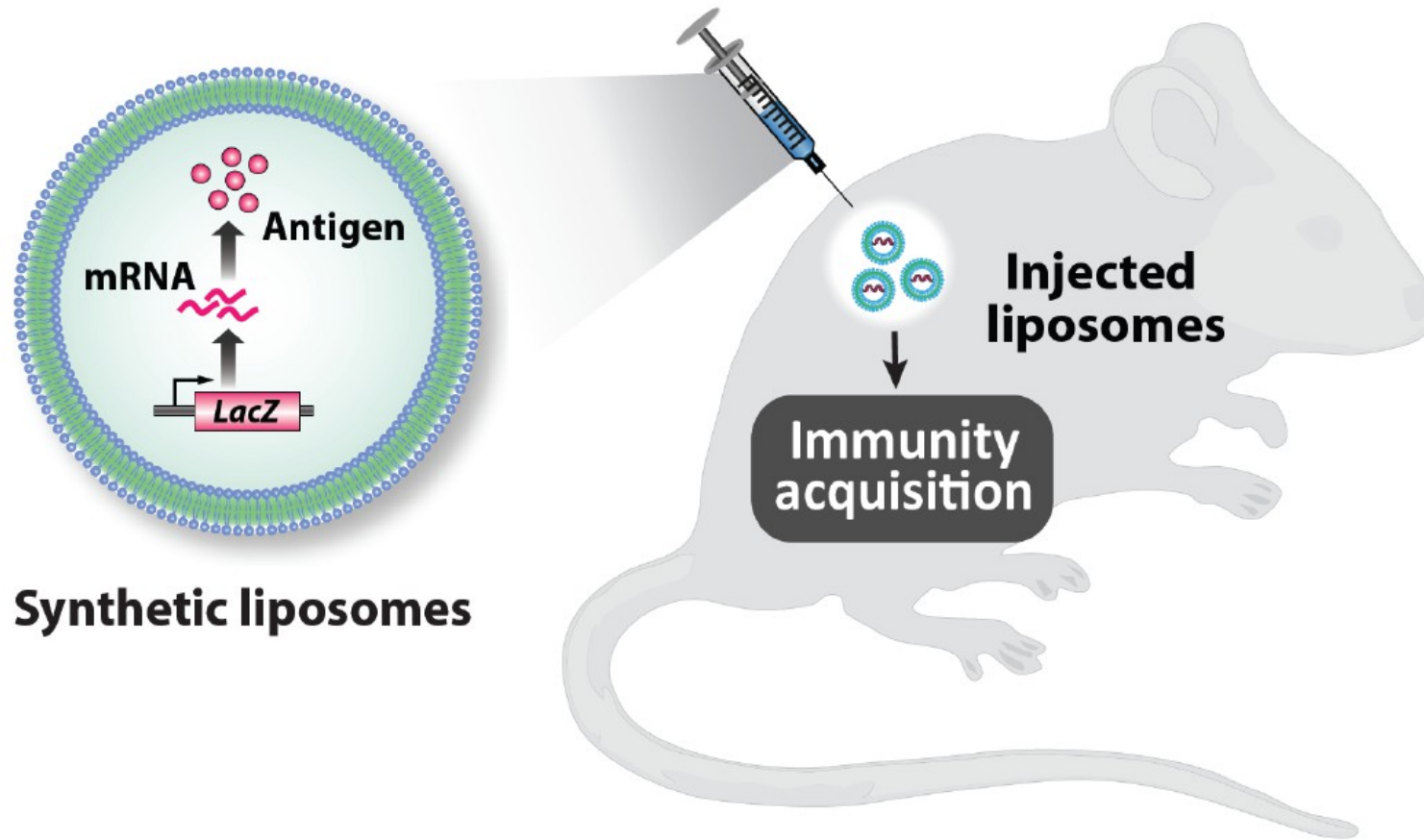
A**Mammalian cells engineered for uric acid homeostasis****B****Synthetic modified mRNAs for cellular reprogramming**

A synthetic gene drive that rapidly disseminates mosquito gene disruption

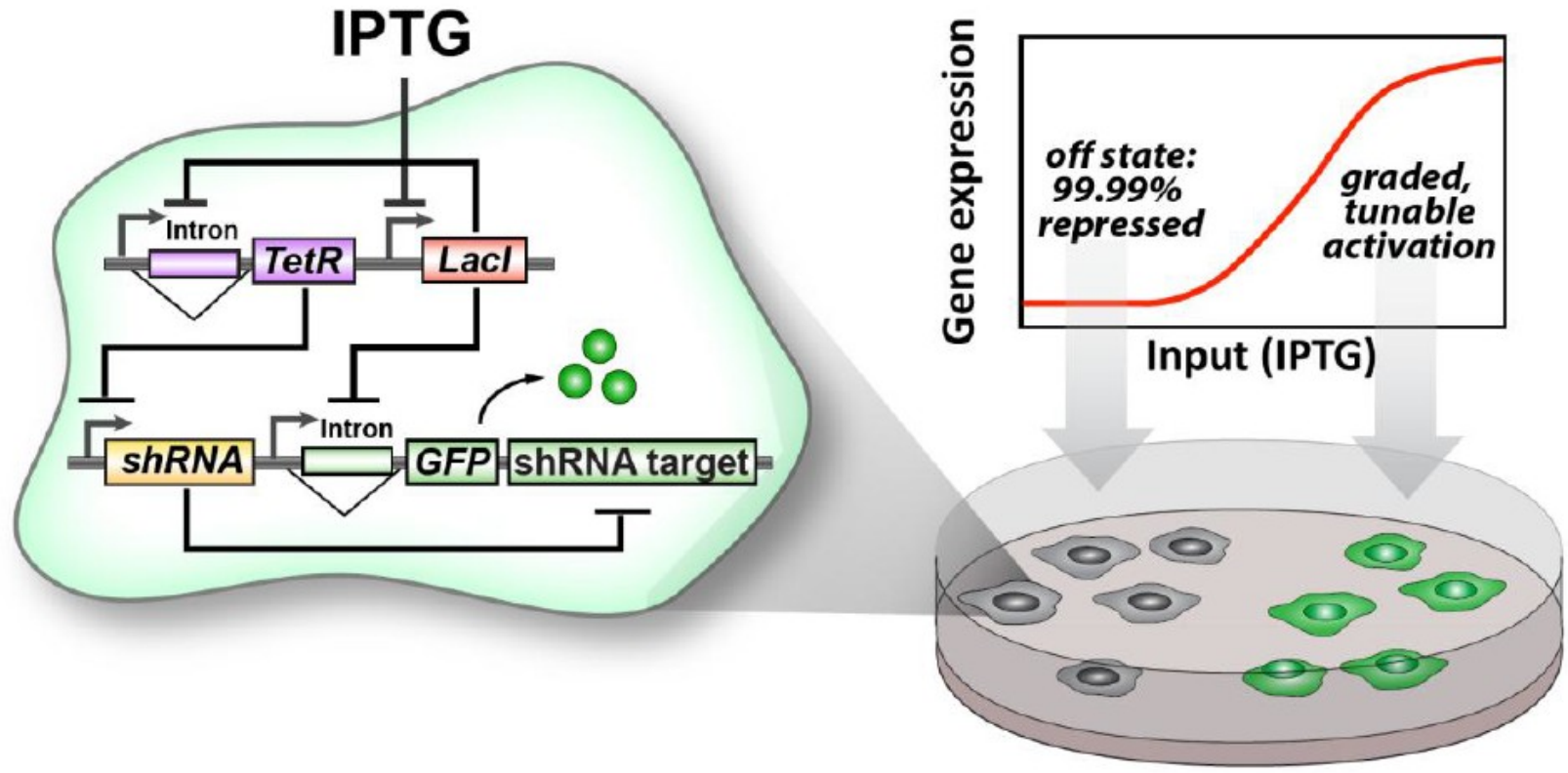


- ① I-SceI expression under the control of the male germline promoter *β2-tubulin*
- ② Double strand break (DSB) at the recognition site induced by I-SceI
- ③ I-SceI copied into the broken chromosome by DSB-activated cellular recombinational repair system

Synthetic liposomes as a genetically programmable vaccine



A modular mammalian switch for tight gene expression control



SEMINARJI

