Fictional bacterial profile

**Background**: After some twists and turns, you have just successfully invade the host's body. As the leader of the bacteria population, we need you to make the right choice to help us to survive and grow in the treacherous environment around. Now you can choose three virulence factor to equip your population.

After that, you will lead your bacteria population to face three hard events. If you pass the event with required virulence factor, your population will grow peacefully to a quadratic number. Otherwise, your population will be halved.

Initial bacteria population：100， pass the event : 二次方，fail to pass the event : /2

**1. choose 3 virulence factors from 6 cards**

Cards: **type 1**: resistance to penicillin or oxacillin；**type 2**: biofilm, β toxin；**type 3** α toxin, δ toxin, bacterial infection ability.

**Event 1**: evade from human immune system (inflammation).

Introduction: bacteria need the ability to escapes from the first defence of human body, immune system.

**具体事件**：you meet the immune cell who find you and want to kill you!

Required: biofilm or Beta toxin.

Biofilm protect bacteria from the attack from immune cell.

Beta toxin kill the immune cell to disrupt immune system.

Event outcome:

**FAIL:** The reproduction of the bacteria population was inhibited in this event. Bacteria population is divided by two.

or

**PASS**: The reproduction of the bacterial population was not inhibited in this event, and the bacterial population quadratic.

event之后加上一句提示语：

(tips: immune cells will find and kill most of the invading bacteria, only a small precise of bacteria with special resistance can survival from immune system)

Transformation event: As the Bonus for survival from this event you “eat” the external DNA and get 1 more virulence factor

**Event 2**: escape from antibiotic.

Introduction: The use of external antibiotics will kill the bacteria in the patient's body. The resistance to antibiotics can help bacteria to survival from this event.

具体事件1：the host find he have the infectious symptoms, he went to hospital and took the antibiotics (penicillin) from the doctor.

Required: resistance to penicillin.

具体事件2：the host find he have the infectious symptoms, he went to hospital and took the antibiotics (oxacillin) from the doctor.

Required: resistance to oxacillin.

Event outcome:

**FAIL:** The reproduction of the bacteria population was inhibited in this event. Bacteria population is divided by two.

or

**PASS**: The reproduction of the bacterial population was not inhibited in this event, and the bacterial population quadratic.

event之后加上一句提示语：

(tips: antibiotics is a helpful tools used in the treatment of bacterial infection. However the abuse of antibiotics will enrich the bacteria with antibiotic resistance, which cause the failure of certain antibiotics. This phenomenon should be concerned in clinical treatment.)

Conjugation event: As the Bonus for survival from this event you meet some special and attractive guys. After the having sex with them, you find you got the special abilities from them: get 1 more virulence factor

**Event 3**: host dying due to severe bacteraemia (inflection disease).

Introduction: too severe infection disease will cause the death of host, which also lead to the extinct of parasitic bacteria.

Required: cannot have alpha toxin and delta toxin at the same time, while required the bacterial infection ability.

* 具体事件1：the immune system and drug treatment for this host are all have no effect on you. However, the disorderly expansion within the host almost killed him! Stop! what good would happen to you if you killed the host that you depend on to survive? Run! Don't waste any time to infect the next host

Event outcome:

1: with both α toxin and δ toxin, without bacterial infection ability

the death of host Led to the destruction of the bacterial dynasty. Bacteria population is 0.

2: with both α toxin and δ toxin, with bacterial infection ability

the death of host Led to the destruction of the bacterial dynasty. However, some of your offspring survival in the secondary host and the new journey begin.

3: don’t have α toxin and δ toxin at the same time, without bacterial infection ability.

The host do not dead from these infection, your population can survival in this host for a while…

Reproduction of the bacterial population was not inhibited in this event, and the bacterial population quadratic.

event之后加上一句提示语：

4: don’t have α toxin and δ toxin at the same time, with bacterial infection ability.

The host do not dead from these infection, your population can survival in this host for a while…

Reproduction of the bacterial population was not inhibited in this event, and the bacterial population quadratic. Moreover, some of your offspring survival in the secondary host and the new journey begin.

event之后加上一句提示语：

(tips: It is not in bacteria’s best interest to cause disease, they are just struggle for survival and proliferation.)

*END: to be or not to be (to survive or to destroy)*

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Description automatically generated,

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