

# Penicilina biotecnológica

## Biotechnological penicilline

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### Resumen:

La biotecnología es tecnología basada en biología, crea procesos biomoleculares y celulares para crear tecnologías y productos que mejoren nuestra vida y la salud del planeta. La penicilina (primer antibiótico creado) está hecho a base de un hongo llamado "penicillium notatum" entonces es biotecnología farmacéutica, los efectos de este fármaco son anti bacterianos, usados en medicina. Este fue el primer antibiótico en la historia de la medicina. Para llegar a usar el antibiótico pasaron muchos años con pruebas graduales primero en animales y después en humanos.

Palabras claves: Penicillium notatum, farmaceutica, biotecnología, anti bacteriano, hongo, antibiótico, medicina, inhibitorio, penicilina, bacterias, pruebas, uso masivo, enfermedades, patógenos, intravenoso.

### Abstract in english:

Biotechnology is a technology based on biology, it's harnesses celular and biomolecular proceses to develop technologies and products that help improve our lives and the health of our planet. The penicilline (The 1st antibiotic made) it is made from a fungus called "penicillium notatum" so it is a production of biotechnology (farmaceutical biotechnology) wich effects are anti bacterian, to used in medicine. This was the firts antibiotic in the history of medicine. It was achieved after lots of years of experimental tests that were made gradually in diffent investigations, first in animals and then in humans.

Key words: Penicillium notatum, Pharmaceutical, Biotechnology, anti bacterian, fungus, antibiotic, medicine, inhibitory, penicilline, bacterias, tests, massive use, diseases, patogenous, intravenously.

### Introduction:

Biotechnology is technology based on biology, it harnesses celular and biomolecular proceses to develop technologies and products that help improve our lives and the health of our planet. biotechnology is helping the world in many ways. First, the biotechnology is helping to fuel the world in terms of decreasing the global warming, improving manufacturing, so there is more efficiency on the fuel production, drecreasing water use and decreasing waste. In addition the biotecnology is improving the feed of the world members, because it improves crops insect resistans also it improves the disminution of chemicals in crops, using more natural ways to protect the crops, in addition the biotech is

generating more crops with less chemicals, so the crops are growing faster and with less chemicals, that affect its natural composition. In health, before people were dying of different diseases one is bacterial diseases this problem was solved with "nature's own tool box" that is biotechnology. In addition its helping using our genes to cure other people and the best is that the contamination produced by the medicine procedures is being reduced. This was a briefly explanation of biotechnology and how it is useful for us.

#### Problem:

Before the medicine was able to cure people in some cases, but people was dying because of bacterial diseases, an example is that the second world war caused the dead of lots of people that had infected injuries caused of bacterias. But some years before the war, alexander fleming was studing a fungi called penicillum notatum, that was very interesting how it acted against the bacterias. After lots of studies fleming decided to not continue studing the penicillum notatum, afortunatly howard Florey and Ernst Chain continue studing the fungi and doing lots of tests. The first test on animals were really good but the problem was that the war reduced the people that work and generate that it can not be a big Factory, only little because if one is destroyed they can continue producing. When the time of trying the antibiotic in humans, it decreased the expectations in the doctors because to cure a person they need big quantities, so they made some changes in the cultivation of the fungi and all resulted good.

#### Methodology:

The peniciline is the inhibitory activity of the penicillum notatum against a bacteria called staphylococcus aureus. Fleming did his first test with a Petri dish, opening it a few seconds to plant staphylococcus aureus, this few second let that particles of penicillum notatum went into the Petri dish. This was imposible that didnt hapend becausee in downstairs laboratory someone was plantig this fungus, so Fleming laboratory was full of this particles. After this test Fleming went on vacations, he decided that instead of leaving the Petri dish at 37° celcius he leave it at room temperature, all this factors made that the fungi grow more than the bacteria. When he went back the Petri dish was contaminated with penicillum wich its colonies produce a big zone of inhibition of the growing of the bacteria. There where many factors that make posible the discover of the peniciline some are: that in the moment of the test, Fleming laboratory was full of penicillum particles, it was important that both microorganisms were planted at the same time because it would be different if the bacteria was planted before and many more factors. In first instances the peniciline was use as a topic ointment and as a liquid for the eyes. Some years after dr.Ernst Borist Chain and dr. Howard florey made lots of test in animals and finally they created the first injected intravenous antibiotic to a patient, that is powder mixed with distilled water.

#### Solution:

As told before lots of people were dying of bacterial diseases, so the peniciline that is an antibiotic made from a fungus called penicillum notatum, it is biotechnology because its

made from a living microorganism. This was a new step in the medicine because it means the invention of the first antibiotic that helps to cure certain type of bacterian diseases, because the microorganisms are diverse so in fact doesnt make affect against other patogenous.

**Conclusion:**

This new antibiotic was posible used in the final patients after lots of test in a gradually way, first in animals and after in humans, as the final tests resulted good the FDA make the aproval for the massive use.

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