The Discovery of Antibiotics

Sir Alexander Fleming, a Scottish biologist, defined new horizons for modern antibiotics with his discovery of penicillin. It was in 1928 when he observed while experimenting on influenza virus that a common fungus, Penicillium notatum had destroyed bacteria in a staphylococcus infection. Six years later; as a result of some intelligent serendipity, he stumbled on a bacteria-free zone which inhibited the growth of staphylococci. This newly discovered active substance was effective even when diluted up to 800 times. He named it penicillin.

Antibiotics can be loosely defined as the variety of substances derived from bacterial sources which can inhibit the growth of bacteria. Antibiotics can also be classified based on their chemical structure. A similar level of accomplishment is achieved in antibiotics. Bactericidal antibiotics kill the bacteria whereas bacteriostatic antibiotics halt the growth of bacteria.

### Classifications

Infections can be prevented, managed and treated through anti-bacterial group of compounds known as antibiotics. Antibiotics, usually chemically related to natural antibiotics, have since been produced that accomplish comparable tasks.

### Early History

Antibiotics can be described in two segments as under:

**MODERN HISTORY**

- During 1928 Sir Alexander Fleming discovered enzyme lysozyme and the antibiotic substance penicillin from the fungus Penicillium notatum.
- Sir John Scott Burdon-Sanderson observed that culture fluid covered with mould did not produce bacteria.
- Joseph Lister experimented with the antibacterial action on human tissue on what he called Penicillium glaucium.
- John Tyndall explained antibacterial action of the Penicillium fungus to the Royal Society.
- Louis Pasteur postulated that bacteria could kill other bacteria (anthrax bacilli).
- Ernest Duchesne healed infected guinea pigs from typhoid using mould (Penicillium glaucium).
- Sir Alexander Fleming discovered enzyme lysozyme and the antibiotic substance penicillin from the fungus Penicillium notatum.
- Gerhard Domagk discovered Sulfonamidochrysoidine (Prontosil).
- Sir John Scott Burdon-Sanderson observed that culture fluid covered with mould did not produce bacteria.

**ANCIENT HISTORY**

- Sumerian doctors gave patients beer soup mixed with turtle shells and snake skins.
- Greeks and Indians used moulds and other plants to treat infections.
- In Greece and Serbia, mouldy bread was traditionally used to treat wounds and infections.
- Babylonian doctors healed the eyes using a mixture of frog bile and sour milk.
- Sri Lankan army used oil cake (sweetmeat) to server both as desiccant and antibacterial.

### During 1940's and 50's streptomycin, chloramphenicol, and tetracycline were discovered and Selman Waksman used the term "antibiotics" to describe them (1942)

### History of Antibiotics

<table>
<thead>
<tr>
<th>Year</th>
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