

Pentaphyte P-5

Increasing bacterial resistance to antimicrobials is no more an issue with emergence of Pentaphyte P-5, a well-researched herbal product from Dr. Palep's Medical Research foundation Pvt. Ltd.

Quorum-sensing refers to intercellular communication among bacteria. This property enables bacteria to multiply their colonies through biofilms and become more virulent.

The Pentaphyte P-5 formulation was investigated by Dr. Vijay Kothari at the Nirma University (Ahmedabad) for:

(a) Its ability to inhibit quorum sensing regulated violacein production in the bacterium *Chromobacterium violaceum*:

It (at 500-750 microgram/mL) was found to be capable of inhibiting violacein production upto nearly 70%. This is important in the light of the fact that virulence of many pathogenic bacteria is regulated by quorum-sensing, and hence inhibition of the latter can render the pathogen avirulent (or less virulent) without killing the bacterium. Lack of any major killing effect is important, because then the bacterium is less likely to develop resistance to the therapeutic agent used. Quorum-sensing inhibitors (QSI) are currently being intensively investigated worldwide for their possible therapeutic use, along with conventional antibiotics.

(b) Its ability to inhibit beta-lactamase activity:

This product was capable of inhibiting beta-lactamase activity (in vitro) up to 17% (at 250 microgram/mL). Beta-lactamase inhibitors are required in order to increase the utility of the already available beta-lactam antibiotics (e.g. penicillin, cephazolin, etc.).

Thus, Pentaphyte P-5 **formulation exhibited notable QSI property**, but moderate beta-lactamase inhibitory potential.

For last about more than two decades we found Pentaphyte P-5, as an effective agent to battle resistant infections clinically. We have shown clinical data of faster and better healing of post-operative wounds when combined with short course of antibiotics. With these studies the mechanisms of action of Pentaphyte P-5 formulation are well proven.

Thus, Pentaphyte P-5 provides a great promise to prevent resistance and enabling physicians to fight effectively infections.

Mechanisms of action:

1. Very significant Quorum sensing inhibition: It prevents bacterial colony multiplication.
2. Moderate Inhibition of Beta lactamase activity: Anti-microbial activity
3. Albizza lebec: Anthroquinolones disrupt the cell wall, phytosteroids aid immune apparatus to successfully combat infection. Its DSC (Di sodium cromoglycate) like action prevents histamine release from basophils prevents allergy.
4. Ficus species have high tannin content thus possess powerful anti-oxidant effect. Saponins inhibit process of sensitization.
5. It helps in debriding of inflammatory debris, formation of healthy granulation tissue and healing.