

Scientists find way to mass produce anti-malaria drug

Scientists have developed a way to mass-produce an anti-malarial compound to bring down costs of treatment in developing countries.

William Metcalf, microbiology professor at Illinois University, set out to find how a compound, from the phosphonate group, with antibiotic properties, is synthesised by bacteria.

Recently, Metcalf and his lab successfully identified and sequenced the genes and identified the processes by which bacteria make this particular phosphonate compound (FR900098). His findings appeared in a recent issue of *Chemistry and amp; Biology*.

Metcalf said that knowing genes and understanding the pathway that bacteria use to make this anti-malarial compound means the genes can be manipulated to make the compound even more effective against the malaria parasite.

The synthesis of the compound chemically is very expensive. But it can be mass-produced cheaply by harnessing the bacterial's cellular machinery.

'Malaria is a problem in Third World countries that can least afford expensive medicines, and many antibiotics are expensive,' Metcalf said.

A WHO report estimates that 'half of the world's population is at risk of malaria, and an estimated 247 million cases led to nearly 8,81,000 deaths in 2006'.

'In my opinion malaria is the biggest single infectious disease in the world,' Metcalf said, according to a statement by University of Illinois.

Efforts are already underway by Metcalf's colleague, chemical engineering professor Huimin Zhao, to engineer *E. coli* strains to overproduce FR900098, which can then be harvested for medicine.

This effort to help treat malaria is just one facet of a major undertaking to find new antibiotics. The need for new antibiotics is at an all-time high because multi-drug resistant bacteria are appearing even outside hospital settings.

Consequently, infections that used to be easily curable have become more difficult to treat. For example, TB has become so resistant to antibiotics that soon 'they'll send you to Arizona to drier air, like they did before they had antibiotics', Metcalf said.

Making medicines more affordable increases the chances that they will be used in the most effective way possible, that is to say, in combination with one another.

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