

# Drug prevents dangerous tick diseases

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Lyme disease is the blight of countryside users but it may be prevented with a single injection, according to research published in the *Journal of Medical Microbiology*.

The US saw nearly 20,000 cases of Lyme disease in 2006 and there are up to 2,000 cases a year in the UK, a figure that is increasing steadily. Now scientists at the Centers for Disease Control and Prevention in Fort Collins, Colorado, USA, have developed an injection that protects against two severe diseases transmitted by tick bites: Lyme disease and Anaplasmosis.

“Along the North-eastern seaboard of the US, ticks are often co-infected with the bacteria that cause Lyme disease and Anaplasmosis,” says Dr Nordin Zeidner. “Currently there is no vaccine to protect against either organism. We have shown that a single injection of sustained-release antibiotics can prevent both diseases in mice.”

A single dose of doxycycline given orally is only 20-30% effective at preventing these diseases in mice. The researchers found that a new formulation of doxycycline hyclate that is programmed to release the drug over a 20 day period is 100% effective.

“The underlying copolymer formulation has been in use for over 20 years. It has no adverse effect on humans and it can be programmed to release a drug over several weeks to several months,” says Dr Zeidner. “We plan to test the doxycycline formulation to develop different release kinetics and delivery methods. For example, a slow release patch could

be used in conjunction with current recommended protection against ticks, such as repellents and personal tick checks.”

Source: Society for General Microbiology

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