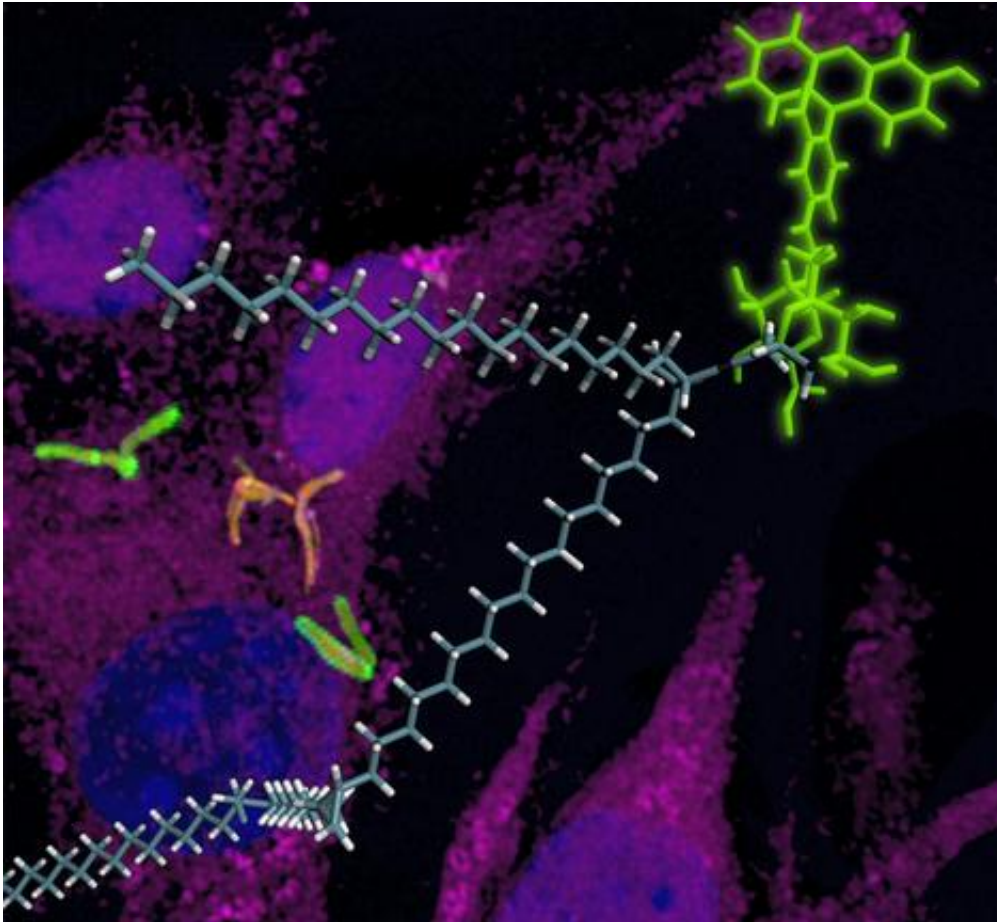


Fluorescent tail tags TB

March 9 2011, By Pete Wilton



A new way of detecting tuberculosis (TB) inside cells has been developed by scientists from Oxford University and NIH in the US.

Methods for diagnosing TB haven't changed much in a century, still

relying on the staining of tissue sections and chest X-rays.

In a recent issue of [Nature Chemical Biology](#) Ben Davis, from Oxford University's Department of Chemistry, and colleagues describe a new method which can, for the first time, detect TB inside [cells](#) using a small molecule.

"We designed and created a fluorescent sugar that we discovered is a substrate for an enzyme, Ag85, found on the surface of TB bacteria," Ben told us.

"The sugar is a variant of one that TB uses but is not used at all in mammalian biology. The Ag85 enzyme takes this and attaches a greasy lipid tail - this greasy product then becomes buried on the greasy surface of TB. The result is that the cell surface of the bug is fluorescently 'painted'."

Ben explains that the net result is a selective labelling of TB even when the bugs are found inside mammalian macrophages, where it normally lies dormant in infected hosts. Other bugs are not labelled and other sugars do not work, so it's very selective.

He adds: "We've been able to use this here to map out aspects of TB cell biology but the implications for diagnosing and monitoring TB as a disease are clearly much broader."

Provided by Oxford University

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