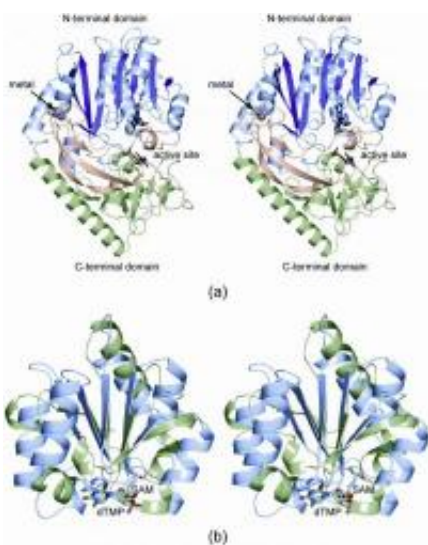


Middle school students co-author research on enzyme for activating promising disease-fighters

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These computerized images show the innermost structure of a key bacterial enzyme that helps activate certain antibiotics and anti-cancer agents. Credit: American Chemical Society

Grown-ups aren't the only ones making exciting scientific discoveries these days. Two middle school students from Wisconsin joined a team of scientists who are reporting the first glimpse of the innermost structure of a key bacterial enzyme. It helps activate certain antibiotics and anti-cancer agents so that those substances do their job.

Their study appears in ACS' weekly journal *Biochemistry*. The student co-authors of the study are from Edgewood Campus Middle School in Madison and participated in Project CRYSTAL, a special program that provides middle school students with hands-on laboratory experience.

In the report, study leader Hazel Holden and colleagues note intense scientific interest in a chemical process called methylation, which increases the activity of DNA, proteins, and other substances in the body by transferring [methyl](#) (CH₃) groups to them. Special enzymes called methyltransferases make methylation possible, and these proteins are very important in a myriad of key biological processes.

Holden and colleagues studied a bacterial [methyltransferase](#) involved in the production of tetronitrose, a component of the promising anti-cancer agent, tetrocarcin, and the antibiotic kijanimicin. The methyltransferase seems to play a key role in activating these disease-fighters. The scientists identified the 3D structure of this methyltransferase, a key step in determining how it works and how it might be modified for potential use in medicine.

More information: "Molecular Architecture of a C-3'-Methyltransferase Involved in the Biosynthesis of D-Tetronitrose, *Biochemistry*."

Provided by American Chemical Society

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