'Golden bullet' shows promise for killing common parasite

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Researchers in Australia report development of a new type of gold nanoparticle that destroys the parasite responsible for toxoplasmosis, a potentially serious disease acquired by handling the feces of infected cats or eating undercooked meat. Their so-called “golden bullet” could provide a safer, more effective alternative for treating the disease than conventional drug therapy, they say. The study is scheduled for the Dec. issue of ACS’ *Nano Letters*, a monthly journal.

Toxoplasma gondii, the parasite that causes the disease, infects more than 60 million people in the United States alone. Although most infected people have no symptoms, it can cause serious health problems in pregnant women and individuals such as AIDS patients or organ transplant recipients who have weakened immune systems.

In the new study, Michael Cortie and colleagues attached antibodies to the parasite onto gold nanorods that are activated by laser-light. A group of Toxoplasma-infected animal cells were isolated in cell culture dishes and subsequently exposed to these “golden bullets.”

The cells were then exposed to laser-light, which heated up the “bullets” and destroyed the parasites. The treatment killed about 83 percent of the parasites containing the gold particles, the researchers say. They hope to develop a similar technique for killing the parasite in patients.

Source: American Chemical Society