African sleeping sickness may be treated with epigenetic modification

The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion and analysis.

Parasitic infections are particularly difficult diseases to fight and have always represented a quandary to researchers, as these small, seemingly simple organisms are actually quite complex. Many parasites have multiple hosts with complex lifecycles, are extremely adept at immune system evasion, and all are eukaryotic—which presents a particular problem when trying to uncover new therapeutic targets, as they are evolutionarily similar to their mammalian hosts.

African sleeping sickness, which is caused by the parasite *Trypanosoma brucei* and transmitted by the tsetse fly, is an example of a parasitic infection that has been notoriously problematic to treat due to the organism's exceptional ability to dodge immune system bullets.

Yet now, researchers from Rockefeller University have developed a method to manipulate trypanosomes in the mammalian bloodstream causing them to change their characteristics so that it is easier for the host immune system to eliminate the insidious invader. The research team found that inhibiting specific proteins that interact with chromatin can "trick" the parasite into differentiating to a different stage of its lifecycle.

"By blocking these chromatin-interacting proteins, we have found a way to make the parasite visible to the immune system," explained co-senior author Nina Papavasiliou, Ph.D., head of the laboratory of lymphocyte biology at Rockefeller University. "The bloodstream form of the parasite is constantly switching protein coats, so the immune system can't recognize and eliminate it. This new method makes the parasite think it's in the fly, where it doesn't need to worry about the immune system attacking it."

Read full, original post: Altering Epigenetic Expression May Help Immune System Battle African Sleeping Sickness