

## Video: Galectins defend against wolves in sheep's clothing

January 15 2016, by Quinn Eastman

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To prevent auto-immune attack, our bodies avoid making antibodies against molecules found on our own cells. That leaves gaps in our immune defenses bacteria could exploit. Some of those gaps are filled by galectins, a family of proteins whose anti-bacterial properties were identified by Emory scientists.

In the accompanying video, Sean Stowell, MD, PhD and colleagues explain how galectins can be compared to sheep dogs, which are vigilant in protecting our cells (sheep) against [bacteria](#) that may try to disguise themselves (wolves).

The video was produced to showcase the breadth of research being conducted within Emory's Antibiotic Resistance Center. Because of their ability to selectively target some kinds of bacteria, galectins could potentially be used as antibiotics to treat infections without wiping out all the bacteria in the body.

Stowell first discovered galectins' properties while he was a graduate student with Richard Cummings, PhD, former chair of the Department of Biochemistry. They found that some galectins can recognize bacteria that express the human blood group B antigen, a carbohydrate structure found on type B and AB [red blood cells](#).

Working with postdoctoral fellow Connie Arthur, PhD, and colleagues, Stowell expanded on those findings to show that galectins can recognize and kill several types of bacteria. Those bacteria also display

[carbohydrate structures](#) that match those found on our own cells. Galectins are thus an example of how the body deals with the problem of "[molecular mimicry](#)."

Provided by Emory University

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