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BAKER INSTITUTE *for* ANIMAL HEALTH

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Dr. Gerlinde Van de Walle and Research Support Specialist, Rebecca Harman discuss the findings of this new study.

Peptides From Horse Stem Cells Kill Common Wound Bacteria

July 10, 2017

The treatment of skin wounds in horses and humans can be complicated by bacterial infections that slow healing and create scarring.

A new study from Dr. Gerlinde Van de Walle, the Harry M. Zweig Assistant Professor in Equine Health and Research Support Specialist, Rebecca Harman, shows that equine stem cells secrete peptides that kill bacteria often found in equine wound infections. They are very excited to soon test whether these peptides are effective in horse wounds, too. [The work is reported in Stem Cell Research & Therapy.](#)

Researchers in the Van de Walle lab cultured two types of bacteria that cause wound infections and exposed them to mesenchymal stromal cells (MSCs), a type of stem cell collected from equine blood, an easy source. Exposure to the MSCs or just to the factors secreted from these cells inhibited bacterial growth. They went one step further, showing that the secreted factors include antimicrobial peptides (AMPs), which kill the bacteria by poking holes through their membrane.

Van de Walle will now test whether these equine MSC-AMPs can treat infections and promote wound healing in live horses. She also has plans to explore the potential "immune-boosting" properties of these and other secreted bioactive factors.

"If you can fight the bacterial infections, then you will restore normal wound healing," Van de Walle says. "We know these peptides work well in the lab, we now have to take it to next level and test whether they also work in the horse."