

‘Müllerian mimicry’: Gut microbes ‘speak the language’ of your immune system

Müllerian mimicry is a well-studied phenomenon, particularly in butterflies, in which completely unrelated species come to display the same patterns and coloration. Each species is unpalatable to eat for different reasons, but all have come to share the same visual cues to make this point known to their common predators. As a group, sending the most consistent signal to predators achieves the best result – not being eaten – for all members.

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Improbably, a [new study](#) has shown that gut bacteria have learned to speak the complex language of our immune system, mimicking and modifying a pro-inflammatory signal into a signal for immune suppression, directly protecting us from the damage caused by autoimmune disorders in which the body attacks itself.

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The dense network of interactions that exists unseen between us and our microbiome is rapidly being charted. An advantage to hosting trillions of bacteria is that they rapidly explore genetic and structural space: at the end of the day, the functions that benefit us and our microbiome, by limiting disease and restoring balance to our immune system, are the ones most likely to last. The bacteria in our microbiome have spent centuries identifying and learning to pull the levers of our immune system. For those interested in designing effective therapies for autoimmune disorders, there is plenty to learn from them.

Read full, original post: [How gut bacteria manipulates your immune system – by mimicking it](#)