Digging in the dirt may yield new class of antibiotics

It might come as a surprise to learn that dirt, that canonical cause of infection, is also a megafactory for antibiotics.

Research, published in the journal Nature Microbiology, has exploited that facility to produce a new class of antibiotics, dubbed “malacidins”, which are not only effective against that bane of modern hospitals, Golden Staph, but could pave the way for exponential increases in the rate of new antibiotic discovery.

…

They discovered a previously unknown class of antibiotic that deploys calcium in a novel way against bacterial cell walls. They named it, rather unparsimoniously, metagenomic acidic lipopeptide antibiotic-cidins—malacidins to you and me.

Applying malacidin-A to rat wounds infected with Golden Staph (more formally known as methicillin-resistant staphylococcus aureus), a bug whose presence in hospital patients generally presages the arrival of an infectious disease SWAT team, was decisive.

“At 24 and 72 [hours] post infection, malacidin-A treatment resulted in no observed bacterial burdens in the wounds,” the researchers report.

There were, however, yet further good tidings.

“Our experimental efforts to induce resistance to malacidin in the laboratory have so far been unsuccessful. Even after 20 days of exposure to sub-lethal levels of malacidin-A, we did not detect any malacidin-resistant S. Aureus,” they write.

Read full, original post: Antibiotic hunters hit pay dirt