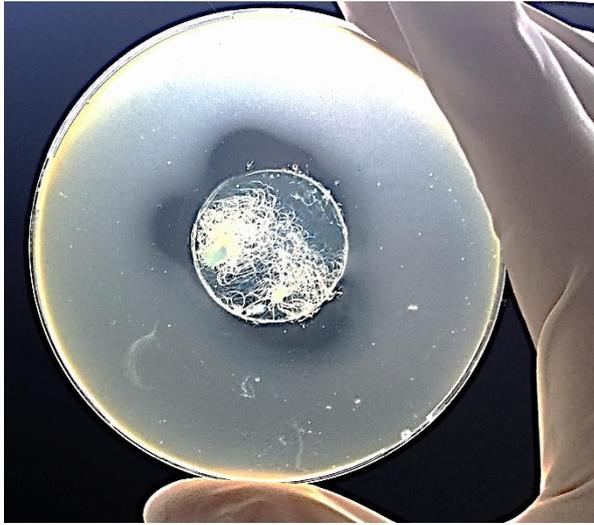


Discovering novel antibiotics



Antibiotic resistance kills 700.000 people every year. Furthermore, resistances are spreading meaning that 10 Mn people will die by 2050. >80% of all clinically used antibiotics were discovered by screening the 1% of soil bacteria that grow in the laboratory. These culturable soil bacteria have now been exhausted as a bioresource. The remaining 99% unculturable bacteria form part of interactive communities, where the bacteria depend on each other when breaking down nutrients. As a result, these bacteria have lost the ability to grow outside their immediate environment. We are collaborating with the startup *BACCUICO*, which has developed a proprietary cultivation platform

that combines directed evolution, next generation sequencing, and machine learning to transform unculturable bacteria into culturable bacteria that can grow in the laboratory. The newly domesticated bacteria are then screened for antibiotic production. So far, *BACCUICO* have discovered >50 new species and 8 novel antibiotic producing species.

Master students with a strong background in life sciences (preferentially microbiology) who are interested in the project are welcome to join our group for a Master thesis. Interested students should contact Dr. Daniel Hansen (either by dropping by the first floor at the LMU Gene center or via email (daniel.hansen@baccuico.com)).