The CCG Natural Product Extract library comes from a collection of sediments, cyanobacteria and sponges from all over the world (Papua New Guinea, Costa Rica, USVI, Panama, Lake Erie, Lake Huron and Antarctica). The sediments collected are full of bacterial cells and spores which when placed on Petri dishes under carefully monitored conditions will allow the cells to grow. It takes two weeks to several months for the microbes to appear. Once a potentially promising organism is detected, it is streaked onto rich media plates in order to obtain a pure culture. The subsequent inoculated liquid cultures grow the newly discovered bacteria to suitable cell mass so that the new natural product molecules can be extracted and analyzed for biological activity in HTS screening. The extracts often contain more than one compound, so when activity is found in an extract there is still more work to be done to isolate and characterize the natural product responsible for the activity. Once a hit is identified, the active fraction can be purified to obtain enough for structural characterization. Then the bacteria used to prepare the samples are phylogenetically characterized using 16S rRNA gene sequence analysis, cell wall composition and fatty acid analysis, menaquinone characterization and genome fingerprinting (RFLP analysis).

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