

Using Nano pore sequencing technology to screen for potential marine plastic-degrading microorganisms and relevant enzyme-encoding genes

Matan Oren

Ariel University, Israel

The Nano pore Minion is a third generation high-throughput sequencing platform which is accessible to small-scale laboratories with a limited budget and/or personnel. The Nano pore technology has several advantages over other next generation sequencing technologies, including extra-long reads, high speed, data availability in real-time and mobility of the sequencing device. On the other hand, the Nano pore sequencing average error rate is still relatively high. We used the Nano pore Minion in our lab in recent years for different research purposes, including whole genome sequencing

of sea urchin single cells and testing approaches for the rapid identification of Cov-2 variants within incoming passengers at the Ben-Gurion airport. Our main research is currently focused on the identification of plastic-degrading microorganisms and enzyme-encoding genes that are related to the breakdown of different plastic polymers. Our results demonstrate that the Nano pore Minion technology is suitable for this purpose and after tuning of library preparation, sequencing and bioinformatics; it may outcompete other available sequencing platforms.

e: Matanaok@gmail.com