Diversa was founded eleven years ago on the premise of recovering biomolecules from microorganisms residing in extreme environments. Our primary focus has been the development of recombinant, cultivation independent technologies that enable the recovery and evolution of biomolecules at ultra high throughput rates. In addition to strategies for cloning genes from uncultured microorganisms, a novel method for high throughput cultivation of microbes and fungi has been developed; this approach enables the recovery of pure cultures from a wide range of diverse microorganisms which were previously recalcitrant to cultivation. We have also been engaged in functional genomics, proteomics, metagenomics and sequence based gene discovery from extremophiles and additionally have sequenced the complete genomes of Pyrolobus fumarius, Aquifex aeolicus and more recently Nanoarchaeum equitans and its archael host, Igniococcus.

Our Biosciences division is focused on discovery of proteins and small molecules for the chemical, industrial and agricultural industries. An array of extremophile enzymes have been discovered and optimized for a number of commercial applications including xylanase for biobleaching in the paper and pulp industry; amylase for starch liquification during corn wet milling, phytase and xylanase for animal feed additives, pectate lyase for textile processing and DNA polymerase as a PCR reagent. Highlights of some of Diversa’s work on extremophiles will be discussed.


Unusual microbial xylanases from insect guts

The genome of Nanoarchaeum equitans: insights into early archael evolution and derived parasitism.