

Marine Biotechnology and research on marine natural products in the Kieler Wirkstoff-Zentrum KiWiZ

Johannes F. Imhoff, Kieler Wirkstoff-Zentrum am Helmholtz Zentrum für Ozeanforschung GEOMAR, Am Kiel-Kanal 44, 24106 Kiel, Germany

The oceans cover more than 70% of the earth's surface and contain almost 80% of species on earth. They oceans bear most of biodiversity on earth, the greatest part of which is still unknown. The remarkably high hit rates of marine compounds in screening for drug leads makes the search in marine microorganisms highly attractive. The Kiel Center for Marine Natural Products KiWiZ is a platform for natural product research on the biology and chemistry of natural products specifically from marine bacteria and fungi. Studies of the KiWiZ include all aspects from sampling, isolation and identification of the microorganisms, their preservation in culture collections, the extraction, purification, structure elucidation and characterization of natural products from the cultured bacteria and fungi, optimisation of production conditions and scale up to pilot scale for biotechnological production of bioactive natural products. Important aspects include the growing panel of biological assay systems, in which suitability for specific applications is tested, and the establishment of a substance library of pure marine natural products. The research strategy of KiWiZ as well as the structure and bioactivities of selected new compounds will be presented.

The KiWiZ offers the spectrum of available methods including bioassays, chemical analysis, identification of microorganisms, and fermentation as service to academia and industry.

Imhoff, J.F., Labes, A. & Wiese, J.: Biomining the microbial treasures of the ocean: new natural products. *Biotechnol Advances* 29, 468-482 (2011).