SZEGED MICROBIOLOGICAL COLLECTION: A HUNGARIAN MICROBIAL GENE BANK

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The Szeged Microbiological Collection (SZMC) holds membership in the World Federation of Culture Collections (http://www.wfcc.info/ccinfo/index.php/collection/by_id/987), underscoring its commitment to the rigorous stewardship of microbial resources. Central to its mission is the acquisition, preservation, taxonomy, and elucidation of bacterial, yeast, and mould strains. Presently, SZMC curates an extensive inventory exceeding 12,000 isolates spanning over 120 microbial genera, comprising approximately 2,000 bacterial and 10,000 yeast and filamentous fungal strains. This repository encompasses a diverse array of microorganisms, including those sourced from specialized ecological niches such as mycotoxin producers, plant pathogens, agents of postharvest decay, and organisms integral to biocontrol, bioremediation, and bioaugmentation endeavors. Notably, SZMC boasts substantial sub-collections particularly rich in taxa such as *Aspergillus*, *Fusarium*, *Mucor*, *Mortierella*, *Penicillium*, *Rhizopus*, *Rhizomucor*, *Trichoderma*, *Cryptococcus*, *Saccharomyces*, and *Candida*. Within the bacterial cohort, SZMC prioritizes strains cultivated for their roles in soil enhancement, bioaugmentation strategies, and biocontrol applications, exemplified by representatives from genera *Bacillus*, *Pseudomonas*, and *Streptomyces*. Preservation methodologies encompass state-of-the-art cryogenic techniques, utilizing both deep (-80 °C) and ultra-deep (-140 °C) freezers, as well as liquid nitrogen repositories to ensure long-term viability. Beyond mere archival stewardship, SZMC conducts molecular identification and comprehensive phenotypic characterization, including assessments of metabolite production and enzymatic activity. Over successive decades, this collection has evolved into an invaluable genetic reservoir, poised to support a wide spectrum of biotechnological, agricultural, and food industrial research endeavors.