



Università degli Studi di Napoli Federico II

PhD in Biotechnology - 36th cycle

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**Extremophiles as microbial tools to face
environmental problems associated to
anthropogenic activities**

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In the last century, anthropogenic activities caused depletion of non-renewable resources and production of non-recyclable and even toxic compounds. The improvement of biotechnological strategies provides alternative technological tools to traditional industrial processes(1). In this perspective, thermophilic microorganisms are useful for biotechnological application for their resistance features and are a source of stable biomolecules and biocatalysts(2). A thermophilic model organism, *Thermus thermophilus* HB27(3), is available and it is a potential platform for biotechnological purposes. Its intrinsic features and the hyperthermoactive-Cas9 genome editing tool (optimized in this bacterium) allow employing *T. thermophilus* as a platform to develop biosensors and engineered strains optimized for biomass degradation, in order to face environmental pollution and resources depletion.

References

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