

# Saudi Arabia Extremophiles

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## ABSTRACT

Saudi Arabia is characterized by unique diverse environments, starting from marine, salt marches, saline soils, hot springs and ending with desert ecosystems. These environments are inhabited with many microbial extremophiles that would be useful in environmental and other biotechnological applications. Prokaryotic and eukaryotic extremophiles have the ability to produce high levels of thermal enzymes and other metabolites. Recent studies showed the enormous diversity of those stress resistant microorganisms in the different ecosystems of Saudi Arabia, and with the development of OMICS technologies and modern molecular biology we can study the survival of these bacterial strains in extreme conditions of space. Investigating the communities of different microbiomes from different Saudi habitats showed magnificent abilities for those creatures to produce compounds and metabolites that can serve in food production, fertilizers, animal feedings, pharmaceuticals, other environmental applications. As a conclusion, we are presenting our studies and experiments that represent the abilities, diversity and metabolomics of extremophiles in Saudi Arabia.

**Keywords:** Extremophiles, Halophiles, Thermophiles.

## How to Cite

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