

Proteome analysis of a novel olive waste degrading *Bacillus sp.* mutant.

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Processed olive waste water is generated seasonally at large quantities during the brining of table olives. It is rich in organic and phenolic compounds, causing environmental problems upon discarding. The biodegradation of these organic substrates is inhibited by the high concentrations of phenolic compounds. We have successfully isolated and identified strain AS-35, a *Bacillus sp.* capable of growth on 50% olive waste. Classical chemical mutagenesis performed on AS-35, using formamide, produced a hyper-resistant mutant, DF4, capable of growth on 80% olive waste. Protein profiles of mutant DF4 cultured in both in nutrient rich (LB) media and olive waste were compared to those of the wild type AS-35. AS-35 exhibits distinctive protein profiles when cultured in olive waste and LB broth respectively, while the profiles observed for DF4 appear to be similar irrespective of the culture media. Based on these findings we hypothesize that mutations occurred within the regulatory pathways involved in olive waste biodegradation, rather than to specific structural proteins or enzymes. We are currently investigating the influence of single stress responses in AS-35, in an attempt to develop a mechanistic basis for the differences in profiles observed.