Genomic diversity of *Oenococcus oeni* from different winemaking regions of Portugal

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**Summary.** *Oenococcus oeni* is an alcohol-tolerant, acidophilic lactic acid bacterium that plays an important role in the elaboration of wine. It is often added as a starter culture to carry out malolactic conversion. Given the economic importance of this reaction, the taxonomic structure of this species has been studied in detail. In the present work, phenotypic and molecular approaches were used to identify 121 lactic acid bacteria strains isolated from the wines of three winemaking regions of Portugal. The strains were differentiated at the genomic level by M13-PCR fingerprinting. Twenty-seven genomic clusters represented by two or more isolates and 21 single-member clusters, based on an 85% similarity level, were recognized by hierarchic numerical analysis. M13-PCR fingerprinting patterns revealed a high level of intraspecific genomic diversity in *O. oeni*. Moreover, this diversity could be partitioned according to the geographical origin of the isolates. Thus, M13-PCR fingerprint analysis may be an appropriate methodology to study the *O. oeni* ecology of wine during malolactic fermentation as well as to trace new malolactic starter cultures and evaluate their dominance over the native microbiota. [Int Microbiol 2011; 14(3):155-162]

**Keywords:** *Oenococcus oeni* · lactic acid bacteria (LAB) · Portuguese winemaking regions · genomic diversity · M13-PCR fingerprinting

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