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COMPILATION OF GROUPS OF MUTAGENS USED TO OBTAIN OPTIMIZED YEAST STRAINS

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Abstract – Yeasts can be used to process industrial by-products to produce products with higher added value. To optimize the technology, new yeast strains can be created through mutagenesis with improved traits of interests. To achieve this, different mutagens can be used. Mutagens can be divided into physical, chemical, and biological. Each type has its own methodology, operating mechanisms, advantages, and disadvantages. Physical mutagens are the oldest, of which UV radiation is the most used. However, others are less commonly used for yeast mutagenesis due to complicated or unwieldy instrumentation. Chemical mutagens are the most widely used to obtain improved yeast strains. The most recent mutagens to be used under laboratory conditions are biological mutagens. Using the CRISPR/Cas9 system, it is also possible to create targeted changes in previously selected regions of the genome in yeast species.

Keywords – Biological mutagenesis; chemical mutagenesis; optimized yeast strain; physical mutagenesis; UV radiation; yeast