

Assimilation of omega 3 and omega 6 fatty acids and removing of cholesterol from environment by *Saccharomyces cerevisiae* and *Saccharomyces boulardii* strains

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The therapeutic potential of polyunsaturated fatty acids (PUFA), especially linoleic (omega 6) and linolenic (omega 3) fatty acids against cardiovascular diseases [1], dyslipidemia [2] and neurodegenerative diseases [3] is known on the basis of reported effects of PUFAs on individual components of the metabolic syndrome. In contrast, it has been observed that the excess of saturated fatty acids is harmful, leading to the increase of the concentration of cholesterol in blood, especially the LDL fraction.

Our investigations indicate easy absorption of unsaturated fatty acids from medium supplemented with different plant oils (flax, olive) by yeast cells. Especially *S. boulardii* seems to be very active in accumulation lipids and fatty acids. On the other hand, *Saccharomyces* strains are able to remove cholesterol from the growth medium. Two pathways are examined: assimilation of cholesterol into yeast cells or metabolical degradation by specific enzymes like as cholesterol esterases.

Thus, baker's yeast *Saccharomyces cerevisiae* and probiotics yeast *S. boulardii* enriched with PUFA seems to be perfect organisms for the daily diet supplementation with essential unsaturated fatty acids and lowering cholesterol in the gastrointestinal tract.