

## ***Interrelationships between the main chemical components in the biomass of *Zymomonas mobilis* strains with different biosynthetic potentials***

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FT-IR spectroscopy was used for the quantitative determination of the principal contents of microbial cells - proteins, nucleic acids, carbohydrates and lipids [1]. Two different *Zymomonas mobilis* strains were analysed: ethanol producing *Z. mobilis* ATCC 29191 and levan producing (in sucrose medium) *Z. mobilis* 113 "S" [2]. Both strains were grown on sucrose and glucose as the sole carbon source and biomass was sampled from the logarithmic and stationary growth phases.

Data processing by multivariate statistics (multiple and partial correlations, ANOVA) demonstrated that the carbon source and strain physiological peculiarities influenced the content of the principal cell components and their interrelationships.

These findings confirm that the main differences between these *Z. mobilis* strains which have diverse biosynthetic potentials can be measured using FT-IR spectroscopy and multivariate statistics methods. This approach is a promising tool for the evaluation of the physiological status of different biotechnologically important bacterial strains.

### References

- [1] Grube M., Bekers M, Upite D., Kaminska E., *Vibrational Spectroscopy*, 28 (2002) 277-285.
- [2] Bekers M., Shvinka J., Laivenieks M., Pankova L., Mezharde I. Strain *Zymomonas mobilis* – the producer of levan, Latvian Patent Nr.5909, 1993.