Bacteria detection based on lysosomal response in *Saccharomyces cerevisiae*

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This study provided the bacteria detection based on lysosomal response in the yeast *S. cerevisiae*. Lysosomes are known as a factor for activate the immune system in the presense of foreign substances. Here, various bacteria strains were exposed with the yeast to analyze the alteration of lysosomal enzymes. The detection ability was evaluated by confocal microscope after exposing and staining lysosomes with LysoTracker. The results showed that treatment of yeast with these bacteria increased the number of red lysosome-like organelles surrounding yeast nucleic. That means lysosome alteration can be used as biomarker for bacteria detection. After that, the expression of lysosomal enzymes under the effects of these bacteria were examined using 2-DE method for screening some specific biomarkers for each bacterium. This work was supported by "Cooperative Research Program for agriculture Science&Technology Development (Project: Development of Target-specific Antimicrobial and Neutralizing Agents for Livestock Biological Hazardous Factors, Project No.PJ01052701)" Rural Development Administration, Republic of Korea.