C. ELEGANS-ON-A-CHIP FOR AGING AND TOXICITY TRACKING

[1]ARVIE CAMILLE DE GUZMAN, [2]SHIN SIK CHOI

Department of Food and Nutrition, Department of Energy Science and Technology,
Myongji University, Yongin 17058, South Korea
E-mail: sschoi@mju.ac.kr

Abstract - We developed a microfluidic channel-based chip platform for tracking an individual soil nematode, *Caenorhabditis elegans* that displays phenotypic changes, causative factors, genetic mechanisms and stress-related illness and diseases. The specific goals of this study include design, fabrication and inspection of microfluidic channel chips; determination of nanoparticles' toxicity and aging-related diseases' indexes on the C. elegans-on-a-chip; elucidation of factors influencing on nanotoxicity and diet-dependent aging; illumination of genetic markers about nanotoxicity and aging-related diseases; construction of chip platform based on genetic regulatory mechanism and markers; materialization of high-throughput system (HTS) system using the C. elegans-on-a-chip. This work is supported by National Research Foundation of Korea (NRF-2016R1A2B4007684).