

CURRICULUM VITAE (Short form) for Moshe Shemesh, Ph.D.

Area of expertise

Food microbiology, microbial quality and safety of milk products, probiotics, *Bacillus* species.

Positions Held

2015 Promoted to Rank B (equivalent to "Senior Lecturer")

2011-to date Research Scientist at Agricultural Research Organization The Volcani Center.

2009-2010 Postdoctoral fellow at Harvard University, Department of Molecular and Cellular Biology, Cambridge, MA, USA.

Higher Education

2008 Ph.D. at The Hebrew University of Jerusalem.

2001 M.Sc. in Biotechnology at The Hebrew University of Jerusalem.

1997 B.Sc. in Life Sciences at The Hebrew University of Jerusalem.

Teaching Experience

2013-to date Lecturer in "Biofilms in the Food Industry" course at The Hebrew University of Jerusalem, The Robert H. Smith Faculty of Agriculture, Food and Environment, Rehovot.

2014-2016 Lecturer in "Microbiology and Sanitation of Food" course at The Hebrew University of Jerusalem, The Robert H. Smith Faculty of Agriculture, Food and Environment, Rehovot.

Recent selected publications

Duanis-Assaf D, Duanis-Assaf T, Zeng G, Meyer RL, Reches M, Steinberg D, **Shemesh M.** (2018). Cell wall associated protein TasA provides an initial binding component to extracellular polysaccharides in dual-species biofilm. *Sci. Rep.* 8:9350.

Yahav S, Berkovich Z, Ostrov I, Reifen R, **Shemesh M.** (2018). Encapsulation of beneficial probiotic bacteria in extracellular matrix from biofilm-forming *Bacillus subtilis*. *Artif. Cells Nanomed. Biotechnol.* 27:1-9.

Ben-Ishay N., Oknin H., Steinberg D., Berkovich Z., Reifen R., **Shemesh M.** (2017). Enrichment of milk with magnesium provides healthier and safer dairy products. *npj Biofilms and Microbiomes.* 3:24.

Gingichashvili S., Duanis-Assaf D., **Shemesh M.**, Featherstone J., Feuerstein O., Steinberg D. (2017). *Bacillus subtilis* Biofilm Development – a Computerized Study of Morphology and Kinetics. *Front. Microbiol.* 8:2072.

Habib C., Yu Y., Gozzi K., Ching C., **Shemesh M.**, Chai Y. (2017). Characterization of the regulation of a plant polysaccharide utilization operon and its role in biofilm formation in *Bacillus subtilis*. *PLoS One.* 12(6):e0179761.

Duanis-Assaf D., Steinberg D., Chai Y., **Shemesh M.** (2016). The LuxS based quorum sensing governs lactose induced biofilm formation by *Bacillus subtilis*. *Front. Microbiol.* 6:1517.

Ostrov I., Harel A., Bernstein S., Steinberg D., **Shemesh M.** (2016). Development of a method to determine the effectiveness of cleaning agents in removal of biofilm derived spores in milking system. *Front. Microbiol.* 7:1498.

Ogiy S., Chen Y., Pasvolsky R., Weinberg Z.G., **Shemesh M.** (2016). High resolution melt analysis to confirm the establishment of *Lactobacillus plantarum* and *Enterococcus faecium* from silage inoculants during ensiling of wheat. *Grassl. Sci.* 62:23-36.

Ostrov I., Sela N., Freed M., Khateb N., Kott-Gutkowski M., Inbar D., **Shemesh M.** (2015). Draft genome sequence of *Bacillus licheniformis* S127 isolated from sheep udder clinical infection. *Genome Announc.* 3(5).

Oknin H., Steinberg D., **Shemesh M.** (2015). Magnesium ions mitigate biofilm formation of *Bacillus* species via downregulation of matrix genes expression. *Front. Microbiol.* 6:907.

Assaf D., Steinberg D., **Shemesh M.** (2015). Lactose triggers biofilm formation by *Streptococcus mutans*. *Int. Dairy J.* 42:51-57.

Pechook S., Sudakov K., Polishchuk I., Ostrov I., Zakin V., Pokroy B., **Shemesh M.** (2015). Bioinspired passive anti-biofouling surfaces preventing biofilm formation. *J. Materials Chem. B.* 3:1371-1378.

Shemesh M., Pasvolsky R., Zakin V. (2014). External pH is a cue for the behavioral switch that determines surface motility and biofilm formation of *Alicyclobacillus acidoterrestris*. *J. Food Prot.* 8:1252-1440.

Pasvolsky R., Zakin V., Ostrova I., **Shemesh M.** (2014). Butyric acid released during milk lipolysis triggers biofilm formation of *Bacillus* species. *Int. J. Food Microbiol.* 181C:19-27.

Shemesh M., Chai Y. (2013). A combination of glycerol and manganese promotes biofilm formation in *Bacillus subtilis* via the histidine kinase KinD signaling. *J. Bacteriol.* 195:2747-2754.

Shemesh, M., Kolter, R., Losick, R. (2010). The Biocide Chlorine Dioxide Stimulates Biofilm Formation in *Bacillus subtilis* by Activation of the Histidine Kinase KinC. *J. Bacteriol.* 192:6352-6356.

Inventions or patents

Pokroy B., Pechook S. **Shemesh M.**, (2015). HYDROPHOBIC AND OLEOPHOBIC SURFACES AND USES THEREOF. Patent ID 4175. Phase: National.

Shemesh M., Reifen R., Steinberg D. (2016). MAGNESIUM ION AS ANTIBACTERIAL AGENT. Patent ID 4298. Phase: PCT.

Shemesh M., Reifen R. (2017). METHOD OF GENERATING BACTERIAL COMPOSITIONS. Patent ID 4314. Phase: PCT.