



Faculty Member Profile

Kumar Venkitanarayanan

Associate Professor

Phone number 860-486-0947

Kumar.Venkitanarayanan@uconn.edu

Background:

Dr. Venkitanarayanan worked as a Veterinarian in India for a year before pursuing his M.S. in Veterinary Science. He also worked as an Assistant Professor (Veterinary Public Health) at the Kerala Agricultural University, India for a year. Before taking up his current position at the University of Connecticut, Dr. Venkitanarayanan worked at the Center for Food Safety and Quality Enhancement, University of Georgia, Griffin, Georgia as a Postdoctoral Research Associate for two years.

-Received the Gamma Sigma Delta Junior Faculty Award - 2007

Education:

- Ph.D. Animal Science (1992-1996), University of Connecticut, Storrs, CT
- M.S. Food Science & Technology (1989-1991), University of Nebraska, Lincoln, NE
- M.S. Veterinary Science (1986-1988), Tamil Nadu Agricultural University, India
- Doctor of Veterinary Medicine (1980-1985), Kerala Agricultural University, India

Research Interests:

1. Understand the molecular mechanisms by which food-borne pathogens tolerate and survive adverse environmental stresses encountered in nature, foods, and in hosts.
2. Inactivation of pathogenic microorganisms in foods using novel food-grade antimicrobials, and studying their mechanism of action.
3. Development of molecular methods for rapid detection of food-borne microorganisms.

Courses Taught:

ANSC 224 Food Microbiology and Safety
ANSC 227 Food Microbiology Laboratory

Recent Publications:

Manoj Kumar Mohan Nair and Kumar Venkitanarayanan. 2007. Role of bacterial OmpA and host cytoskeleton in the invasion of human intestinal cells by *Enterobacter sakazakii*. Submitted to *Pediatric Research*.

Anup Kollanoor, Pradeep Vasudevan, Manoj Kumar Mohan Nair, Hoagland, T.A. and Kumar Venkitanarayanan. 2007. Inactivation of bacterial fish pathogens by caprylic acid, monocaprylin and sodium caprylate. *Aquaculture Research*. Revised manuscript submitted after review and waiting for decision from the Editor.

Marilyn Garcia, Mary Anne Roshni Amalaradjou, Manoj Kumar Mohan Nair, Thirunavukkarasu Annamalai, Suman Surendranath, Seok Lee, Thomas Hoagland, Cameron Faustman, and Kumar Venkitanarayanan. 2007. Inactivation *Listeria monocytogenes* on frankfurters by monocaprylin alone or in combination with acetic acid. *J. Food Protection* (in press).

Dharod J., R Pérez-Escamilla, S. Paciello, A Bermúdez-Millán, K. Venkitanarayanan , G. Damio. Comparison between Self-reported and Observed Food Handling Behaviors among Latinas. 2007. *J Food Protection* (in press).

Dharod J., R Pérez-Escamilla, S. Paciello, Kumar Venkitanarayanan, Angela Bermúdez-Millán; and Grace Damio. 2007. *Trends in Food Protection* (in press).

Mary Anne Roshni Amalaradjou, Thirunavukkarasu Annamalai, Patrick Marek, Pedram Rezamand, David Schreiber, Thomas Hoagland, and Kumar Venkitanarayanan. 2006. Inactivation of *Escherichia coli* O157:H7 in cattle drinking water by sodium caprylate. *J. Food Protection*, 69 (9), 2248-2252.

Pradeep Vasudevan and Kumar Venkitanarayanan. 2006. Role of *rpoS* gene in the survival of *Vibrio parahaemolyticus* in fish and seawater. *J. Food Protection*, 69 (6), 438–1442.

Mohan Nair, M.K. and Venkitanarayanan K.S. 2006. Cloning and Sequencing of the Major Outer Membrane Protein Gene *ompA* and Development of A Specific PCR for Rapid Detection of *Enterobacter sakazakii* in Infant Formula. *Appl. Environ. Microbiol.* 72 (4): 2539-2546.

Mary Anne Roshni Amalaradjou, Thirunavukkarasu Annamalai, Patrick Marek, Pedram Rezamand, David Schreiber, Thomas Hoagland, and Kumar Venkitanarayanan. 2006. Inactivation of *Escherichia coli* O157:H7 by sodium caprylate in cattle drinking water. Accepted in *J. Food Prot.* (proof of acceptance attached).

Pradeep Vasudevan and Kumar Venkitanarayanan. 2006. Role of *rpoS* gene in the survival of *Vibrio parahemolyticus* in fish and seawater. Accepted in *J. Food Prot* (proof of acceptance attached)

Manoj Kumar Mohan Nair, Pradeep Vasudevan, and Kumar Venkitanarayanan. 2005 (October). Antibacterial Effect of Caprylic Acid and Monocaprylin on Major Bacterial Mastitis Pathogens. *J. Dairy Sci.* 88:3488-3495.

Patrick Marek, Thirunavukkarasu Annamalai and Kumar Venkitanarayanan. 2005 (September). Inactivation of *Escherichia coli* O157:H7 on apples by caprylic acid. *J. Food Technol.* 3: 464-468.

Thirunavukkarasu Annamalai and Kumar Venkitanarayanan. 2005. Expression of major cold shock proteins and genes by *Yersinia enterocolitica* in synthetic medium and foods. *J. Food Prot.* 68(11): 2454-2458.

Manoj Kumar Mohan Nair, Pradeep Vasudevan, Thomas Hoagland and Kumar Venkitanarayanan. 2005. Antibacterial Effect of Caprylic Acid and Monocaprylin on Major Bacterial Mastitis Pathogens. Accepted in the *J. Dairy Sci.*

Manoj Kumar Mohan Nair, Thomas Hoagland and Kumar Venkitanarayanan. 2005. Antibacterial effect of monocaprylin on *Escherichia coli* O157:H7 in apple juice. Accepted in *Journal of Food Protection.*

Pradeep Vasudevan, Patrick Marek, Mohan Nair, Thirunavukkarasu Annamalai, Michael Darre, Mazhar Khan, and Kumar Venkitanarayanan. 2005. In vitro inactivation of *Salmonella* Enteritidis in chicken cecal contents by caprylic acid. *Journal of Applied Poultry Research.* *J of Appl. Poultry Res.* 14:122-125.

Manoj Kumar Mohan Nair, Pradeep Vasudevan, and Kumar Venkitanarayanan. 2005. Antibacterial effect of blackseed oil on *Listeria monocytogenes*. *Food Control.* 16:395-398.

Suman S.P., Faustman C., Lee S., Tang J., Sepe H.A., Vasudevan P., Annamalai T., Manojkumar M., Marek P., Venkitanarayanan K.S. 2005. Effect of erythorbate, storage and high-oxygen packaging on premature browning in ground beef, *Meat Sci* 69: 363-369.

Sepe H.A., Faustman C., Lee S., Tang J., Suman S.P., Venkitanarayanan K.S. 2005. Effects of reducing agents on premature browning in ground beef. *Food Chemistry.* In press.

Thirunavukkarasu Annamalai, Manoj Kumar Mohan Nair, Patrick Marek, Pradeep Vasudevan, David Schreiber, Randall Knight, Thomas Hoagland, and Kumar Venkitanarayanan. 2004. In vitro inactivation of enterohemorrhagic *Escherichia coli* O157:H7 in bovine rumen fluid by caprylic acid. *Journal of Food Protection* 67:884-888.

Manoj Kumar Mohan Nair, Pradeep Vasudevan, Thomas Hoagland, and Kumar Venkitanarayanan. 2004. Inactivation of *E. coli* O157:H7 and *L. monocytogenes* in milk by caprylic and monocaprylin. *Food Microbiology.* 21: 611-616.

Manoj Kumar Mohan Nair and Kumar Venkitanarayanan. 2004. Inactivation of *Enterobacter sakazakii* in reconstituted infant formula by monocaprylin. Accepted in *Journal of Food Protection.*

Pradeep Vasudevan, Patrick Marek, Mohan Nair, Thirunavukkarasu Annamalai, Michael Darre, Mazhar Khan, and Kumar Venkitanarayanan. 2004. In vitro inactivation of *Salmonella* Enteritidis in chicken cecal contents by caprylic acid. Accepted in *Journal of Applied Poultry Research.*

Manoj Kumar Mohan Nair, Pradeep Vasudevan, and Kumar Venkitanarayanan. 2004.

Antibacterial effect of blackseed oil on *Listeria monocytogenes*. Accepted in Food Control.

S. P. Suman, C. Faustman, S. Lee, J. Tang, H. A. Sepe, P. Vasudevan, T. Annamalai, M. Manojkumar, P. Marek, M. Decesare, and K. S. Venkitanarayanan. 2003. Effects of muscle source on premature browning in ground beef. Accepted in Meat Science.

H. A. Sepe, C. Faustman, S. Lee, J. Tang, S. P. Suman, and K. S. Venkitanarayanan. 2003. Effects of reducing agents on premature browning in ground beef. Accepted in Food Chemistry.

S. P. Suman, C. Faustman, S. Lee, J. Tang, H. A. Sepe, P. Vasudevan, T. Annamalai, M. Manojkumar, P. Marek, and K. S. Venkitanarayanan. 2003. Effect of erythorbate, storage and high-oxygen packaging on premature browning in ground beef. Submitted the revised paper to Meat Science .

Thirunavukkarasu, A., P. Vasudevan, P. Marek, T. Hoagland, K. Venkitanarayanan. 2003. Heat Inactivation of *Escherichia coli* O157:H7 in Apple Cider in the presence of Glycerol Monolaurate and a Synthetic Antimicrobial Peptide, PR-26. Journal of Food Processing and Preservation, 27(1)-37-49.

Marek, P., M.K.M. Nair, T. Hoagland, K. Venkitanarayanan. 2003. Survival and growth characteristics of *Escherichia Coli*O157:H7 in pasteurized and unpasteurized Cheddar cheese whey. Accepted in the International Journal of Food Microbiology.

Marek, P., A. Thirunavukkarasu, K. Venkitanarayanan. 2003. Detection of *Penicillium expansum* by polymerase chain reaction. International Journal of Food Microbiology (in press).

Khan, M.I., Amin Fadl, K. Venkitanarayanan. 2003. Reducing colonization of *Salmonella* Enteritidis in chicken by targeting outer membrane proteins. Journal of Applied Microbiology, 94:1-4.

Vasudevan, P., M.K.M. Nair, A. Thirunavukkarasu, K.S. Venkitanarayanan. 2003. Phenotypic and genotypic characterization of mastitis isolates of *Staphylococcus aureus* for biofilm formation. Veterinary Microbiology, 92, 179-185.

Vasudevan, P., A. Thirunavukkarasu, L. Satori, T. Hoagland, K. Venkitanarayanan. 2003. Behavior of enteroaggregative *Escherichia coli* in bottled mineral and spring water. Journal of Food Protection, 66, 497-500.

Vasudevan, P., P. Marek, T. Hoagland, K. Venkitanarayanan. 2003. Effect of chilling and freezing on survival of *Vibrio parahemolyticus* on fish fillets.

Venkitanarayanan, K., C. Lin, H. Bailey, and M. P. Doyle. 2002. Inactivation of *Escherichia coli* O157:H7, *Salmonella* Enteritidis, and *Listeria monocytogenes* on apples, oranges, and tomatoes by lactic acid with hydrogen peroxide. Journal of Food Protection, 65(1), 100-105.

Amin Fadl, K. Venkitanarayanan, and M. I. Khan. 2002. Identification of *Salmonella* Enteritidis outer membrane proteins expressed during attachment to human intestinal epithelial cells. Journal of Applied Microbiology, 92, 180-186.

McWaters, K. H., M. P. Doyle, S. L. Walker, A. P. Rimal, and K. Venkitanarayanan. 2002. Consumer acceptance of raw apples treated with an antibacterial solution designed for home use. Accepted in Journal of Food Protection, 65(1), 106-110.

Thirunavukkarasu, A., K. Venkitanarayanan, T. Hoagland, and M. I. Khan. 2001. Inactivation of Escherichia coli O157:H7 and Listeria monocytogenes by PR-26, a synthetic antibacterial peptide. Journal of Food Protection, 64(12), 1929-1934.

Book Chapters:

Venkitanarayanan, K., and M. P. Doyle. 2003. Escherichia coli. In Encyclopedia of Food Sciences and Nutrition, p. 2149-2153. Academic Press, England.

Venkitanarayanan, K. and M. P. Doyle. 2003. Escherichia coli: Detection. In Encyclopedia of Food Sciences and Nutrition, p. 2153-2157. Academic Press, England.

Venkitanarayanan, K. and M. P. Doyle. 2003. Food poisoning by Escherichia coli. In Encyclopedia of Food Sciences and Nutrition, p. 2157-2162. Academic Press, England.

Venkitanarayanan, K. and M. P. Doyle. 2001. Foodborne infections and infestations. In Hand Book of Nutrition and Food. CRC Press, Florida, USA.

Hobbies:

Reading <http://www.lib.uconn.edu>

Basketball <http://www.nba.com>

Favorite Links:

My native place in India: Kerala <http://Kerala.com>

My news source: CNN <http://www.cnn.com>

News from India: <http://www.rediff.com>

Food Safety Links:

Center for Food Safety and Applied Nutrition: FDA <http://vm.cfsan.fda.gov>

Centers for Disease Control and Prevention: CDC <http://www.cdc.gov>

American Society for Microbiology: ASM <http://asm.org>

United States Department of Agriculture: USDA <http://www.usda.gov>

Institute of Food Technologists: IFT <http://www.ift.org>

National Food Safety Database <http://www.foodsafety.org>