

PERSONAL INFORMATION

Rosangela Tozzoli

POSITION **Researcher**

WORK EXPERIENCE

10/01/2001–30/06/2008

Hired Researcher

Istituto Superiore di Sanità, Rome (Italy)

Research fellow in the field of pathogenic *Escherichia coli*.

01/07/2008–31/12/2017

Researcher (temporary staff)

Istituto Superiore di Sanità, Roma (Italy)

Area of research and activity: pathogenic *Escherichia coli* virulence genes asset. Enrolled at the European Union and National Reference Laboratory (EURL/NRL) for *Escherichia coli*.

01/01/2018–Present

Researcher (permanent staff)

Istituto Superiore di Sanità, Roma (Italy)

Working at the European Union and National Reference Laboratory for *Escherichia coli*. She carries out studies on the characterisation of virulence determinants of pathogenic *E. coli* and on the mechanisms of virulence genes acquisition, especially of Shigatoxin producing *Escherichia coli*. She is involved in several EURL activities, such as training, methods development, proficiency test organization, reference materials provision.

She is a member of the FWD network of ECDC Coordination Committee since 2014 and she is project leader of TAG 18 of CEN TC 275 WG6 on Shigatoxin producing *Escherichia coli*.

EDUCATION AND TRAINING

06/11/2018–15/11/2018

Participation in the Course on Risk-Benefit Assessment in Foods: methods for quantifying health effects

DTU, Lyngby (Copenhagen) (Denmark)

25/06/2018–29/06/2018

Participation in the BfR-Summer Academy on Risk Assessment and Risk Communication in Food Safety

BfR, Berlin (Germany)

07/2007

License for practicing Biology

Università degli Studi di Roma "La Sapienza", Rome (Italy)

15/11/2004

Mater in Microbiology and Virology, 70/70 cum laude

Università degli Studi di Roma "La Sapienza", Rome (Italy)

Titolo della tesi: Identificazione dei geni responsabili della produzione di un fattore citotossico prodotto

da ceppi di *E. coli* diarreagenici.

20/03/2000 **Graduation in Biology, 110/110 cum laude**
 Università degli Studi di Roma "Roma Tre", Rome (Italy)

PERSONAL SKILLS

Mother tongue(s) Italian

Foreign language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user
 Common European Framework of Reference for Languages

Communication skills Good communication skills obtained through the participation in Workshops, Conferences, Working Groups, Committees and project meetings.

Organisational / managerial skills - Organization of training sessions for the benefit of personnel from National Reference Laboratories, Italian Official Laboratories and public Health Laboratories operating in the field of pathogenic *E. coli*.
 - Organizzazione di Studi Inter-laboratorio per la ricerca e la caratterizzazione di *Escherichia coli* patogeni (EURL *E. coli*)
 - Organizzazione di Conferenze Scientifiche (Progetto Pathogenic *E. coli* Network) e workshop (EURL *E. coli*)

Job-related skills

- Research activities on the pathogenesis of Shigatoxin producing and other pathogenic *E. coli* infections.
- Development of methods for the detection and characterization of pathogenic *E. coli* strains.
- Scientific support to the NRLs and Italian Public Health laboratories operating in the field of pathogenic *E. coli* through training stages, advice, preparation of reference materials and organization of inter-laboratory studie
- Participation in committees and working groups related to Food Safety and Foodborne infections (SANCO, EFSA, ECDC, CEN). In detail:
 -ECDC, 2012: Working group “*Systematic Review of Public Health effectiveness of Molecular typing of Bacteria and Viruses Expert Panel Meeting*”.
 -EFSA, 2013:Working group “*Analytical methods for biological agents*”.
 -EFSA, 2013-2014: Working group“*Collection of molecular typing data from food and animal isolates*”.
 -ECDC, 2014 - to date: Coordination Committee of the ECDC “*Food- and Waterborne Diseases and Zoonoses (FWD)*”.
 -CEN 2017 – to date: leader of the TAG18 of CEN/TC275/WG6 on Shiga toxin producing *E. coli* (STEC).

ADDITIONAL INFORMATION

Publications Arancia S, Iurescia M, Lorenzetti S, Stravino F, Buccella C, Caprioli A, Franco A, Battisti A, Morabito S, **Tozzoli R**. Detection and isolation of Shiga Toxin-producing *Escherichia coli* (STEC) strains in caecal samples from pigs at slaughter in Italy. *Vet Med Sci*. 2019 May 23. doi: 10.1002/vms3.175.
 Michelacci V, Maugliani A, **Tozzoli R**, Corteselli G, Chiani P, Minelli F, Gigliucci F, Arancia S, Conedera G, Targhetta C, Pierasco A, Collini L, Parisi A, Scavia G, Morabito S. 2018. Characterization of a novel plasmid encoding F4-like fimbriae present in a Shiga-toxin producing enterotoxigenic *Escherichia coli* isolated during the investigation on a case of hemolytic-uremic syndrome. *Int J Med Microbiol*. 2018 Oct;308(7):947-955.
Tozzoli R, Maugliani A, Michelacci V, Minelli F, Caprioli A, Morabito S. 2018. Validation on milk and

sprouts of EN ISO 16654:2001 - Microbiology of food and animal feeding stuffs - Horizontal method for the detection of *Escherichia coli* O157. *Int J Food Microbiol.* 2018 May 8. pii: S0168-1605(18)30228-9.

Scavia G, Gianviti A, Labriola V, Chiani P, Maugliani A, Michelacci V, Minelli F, **Tozzoli R**, Caprioli A, Morabito S. 2018. A case of haemolytic uraemic syndrome (HUS) revealed an outbreak of Shiga toxin-2-producing *Escherichia coli* O26:H11 infection in a nursery, with long-lasting shedders and person-to-person transmission, Italy 2015. *J Med Microbiol.* 2018 Apr 23. doi: 10.1099/jmm.0.000738.

Pasqua M, Michelacci V, Di Martino ML, **Tozzoli R**, Grossi M, Colonna B, Morabito S, Prosseda G. 2017. The Intriguing Evolutionary Journey of Enteroinvasive *E. coli* (EIEC) toward Pathogenicity. *Front Microbiol.* 2017 Dec 5;8:2390.

Gigliucci F, Brambilla G, **Tozzoli R**, Michelacci V, Morabito S. Comparative analysis of metagenomes of Italian top soil improvers. *Environ Res.* 2017 May;155:108-115. doi: 10.1016/j.envres.2017.02.004. Epub 2017 Mar 10.

Tozzoli R, Di Bartolo I, Gigliucci F, Brambilla G, Monini M, Vignolo E, Caprioli A, Morabito S. Pathogenic *Escherichia coli* and enteric viruses in biosolids and related top soil improvers in Italy. *J Appl Microbiol.* 2017 Jan;122(1):239-247. doi: 10.1111/jam.13308. Epub 2016 Nov 10.

Grande L, Michelacci V, Bondi R, Gigliucci F, Franz E, Badouei MA, Schlager S, Minelli F, **Tozzoli R**, Caprioli A, Morabito S. Whole-Genome Characterization and Strain Comparison of VT2f-Producing *Escherichia coli* Causing Hemolytic Uremic Syndrome. *Emerg Infect Dis.* 2016 Dec;22(12):2078-2086. doi: 10.3201/eid2212.160017. Epub 2016 Dec 15.

Nobili G, Franconeri I, Basanisi MG, La Bella G, **Tozzoli R**, Caprioli A, La Salandra G. Short communication: Isolation of Shiga toxin-producing *Escherichia coli* in raw milk and mozzarella cheese in southern Italy. *J Dairy Sci.* 2016 Oct;99(10):7877-80. doi: 10.3168/jds.2016-11613. Epub 2016 Aug 10.

Ardissino G, Tel F, Possenti I, Testa S, Consonni D, Paglialonga F, Salardi S, Borsa-Ghiringhelli N, Salice P, Tedeschi S, Castorina P, Colombo RM, Arghittu M, Daprai L, Monzani A, **Tozzoli R**, Brigotti M, Torresani E. Early Volume Expansion and Outcomes of Hemolytic Uremic Syndrome. *Pediatrics.* 2016 Jan;137(1). doi: 10.1542/peds.2015-2153.

Michelacci V, Prosseda G, Maugliani A, **Tozzoli R**, Sanchez S, Herrera-León S, Dallman T, Jenkins C, Caprioli A, Morabito S. Characterization of an emergent clone of enteroinvasive *Escherichia coli* circulating in Europe. *Clin Microbiol Infect.* 2016 Mar;22(3):287.e11-9

Bonardi S, Alpigiani I, **Tozzoli R**, Vismarra A, Zecca V, Greppi C, Bacci C, Bruini I, Brindani F. Shiga toxin-producing *Escherichia coli* O157, O26 and O111 in cattle faeces and hides in Italy. *Vet Rec Open* 2015; 2:e000061.

Grande L, Michelacci V, **Tozzoli R**, Ranieri P, Maugliani A, Caprioli A, Morabito S. Whole genome sequence comparison of vtx2-converting phages from Enteroaggregative Haemorrhagic *Escherichia coli* strains. *BMC Genomics.* 2014 Jul 8;15:574.

Tozzoli R, Grande L, Michelacci V, Ranieri P, Maugliani A, Caprioli A, Morabito S. Shiga toxin-converting phages and the emergence of new pathogenic *Escherichia coli*: a world in motion. *Front Cell Infect Microbiol.* 2014 Jun 20;4:80.

Michelacci V, Grande L, **Tozzoli R**, Maugliani A, Caprioli A, Morabito S. Identification of two allelic variants of *toxB* gene and investigation of their distribution among Verocytotoxin-producing *Escherichia coli*. *Int J Med Microbiol.* 2014 Jul;304(5-6):730-4

Tozzoli R, Grande L, Michelacci V, Fioravanti R, Gally D, Xu X, La Ragione R, Anjum M, Wu G, Caprioli A, Morabito S. Identification and characterization of a peculiar vtx2-converting phage frequently present in verocytotoxin-producing *Escherichia coli* O157 isolated from human infections. *Infect Immun.* 2014 Jul;82(7):3023-32.

Escher M, Scavia G, Morabito S, **Tozzoli R**, Maugliani A, Cantoni S, Fracchia S, Bettati A, Casa R, Gesu GP, Torresani E, Caprioli A. A severe foodborne outbreak of diarrhoea linked to a canteen in Italy caused by enteroinvasive *Escherichia coli*, an uncommon agent. *Epidemiol Infect.* 2014 Dec;142(12):2559-66.

Anjum MF, Jones E, Morrison V, **Tozzoli R**, Morabito S, Toth I, Nagy B, Smith G, Aspan A, Nielsen EM, Fach P, Herrera-León S, Woodward MJ, La Ragione RM. Use of virulence determinants and seropathotypes to distinguish high- and low-risk *Escherichia coli* O157 and non-O157 isolates from Europe. *Epidemiol Infect.* 2014 May;142(5):1019-28.

Michelacci V, **Tozzoli R**, Caprioli A, Martínez R, Scheutz F, Grande L, Sánchez S, Morabito S. A new pathogenicity island carrying an allelic variant of the Subtilase cytotoxin is common among Shiga toxin producing *Escherichia coli* of human and ovine origin. *Clin Microbiol Infect.* 2013 Mar;19(3):E149-56.

Scheutz F, Teel LD, Beutin L, Piérard D, Buvens G, Karch H, Mellmann A, Caprioli A, **Tozzoli R**,

- Morabito S, Strockbine NA, Melton-Celsa AR, Sanchez M, Persson S, O'Brien AD. Multicenter evaluation of a sequence-based protocol for subtyping Shiga toxins and standardizing Stx nomenclature. *J Clin Microbiol.* 2012 Sep;50(9):2951-63.
- Xu X, McAteer SP, Tree JJ, Shaw DJ, Wolfson EB, Beatson SA, Roe AJ, Allison LJ, Chase-Topping ME, Mahajan A, **Tozzoli R**, Woolhouse ME, Morabito S, Gally DL. Lysogeny with Shiga toxin 2-encoding bacteriophages represses type III secretion in enterohemorrhagic *Escherichia coli*. *PLoS Pathog.* 2012;8(5):e1002672.
- Scavia G, Morabito S, **Tozzoli R**, Michelacci V, Marziano ML, Minelli F, Ferreri C, Paglialonga F, Edefonti A, Caprioli A. Similarity of Shiga toxin-producing *Escherichia coli* O104:H4 strains from Italy and Germany. *Emerg Infect Dis.* 2011 Oct;17(10):1957-8.
- Kagkli DM, Weber TP, Van den Bulcke M, Folloni S, **Tozzoli R**, Morabito S, Ermolli M, Gribaldo L, Van den Eede G. Application of the modular approach to an in-house validation study of real-time PCR methods for the detection and serogroup determination of verocytotoxigenic *Escherichia coli*. *Appl Environ Microbiol.* 2011 Oct;77(19):6954-63.
- Scheutz F, Nielsen EM, Frimodt-Møller J, Boisen N, Morabito S, **Tozzoli R**, Nataro JP, Caprioli A. Characteristics of the enteroaggregative Shiga toxin/verotoxin-producing *Escherichia coli* O104:H4 strain causing the outbreak of haemolytic uraemic syndrome in Germany, May to June 2011. *Euro Surveill.* 2011 Jun 16;16(24). pii: 19889.
- Fratamico PM, Yan X, Caprioli A, Esposito G, Needleman DS, Pepe T, **Tozzoli R**, Cortesi ML, Morabito S. The complete DNA sequence and analysis of the virulence plasmid and of five additional plasmids carried by Shiga toxin-producing *Escherichia coli* O26:H11 strain H30. *Int J Med Microbiol.* 2011 Mar;301(3):192-203.
- Lauri A, Castiglioni B, Morabito S, **Tozzoli R**, Consolandi C, Mariani P. A tool based on Ligation Detection Reaction-Universal Array (LDR-UA) for the characterization of VTEC by identification of virulence-associated and serogroup-specific genes. *Mol Cell Probes.* 2011 Feb;25(1):35-43.
- Imamovic L, **Tozzoli R**, Michelacci V, Minelli F, Marziano ML, Caprioli A, Morabito S. OI-57, a genomic island of *Escherichia coli* O157, is present in other seropathotypes of Shiga toxin-producing *E. coli* associated with severe human disease. *Infect Immun.* 2010 Nov;78(11):4697-704.
- Tozzoli R**, Caprioli A, Cappannella S, Michelacci V, Marziano ML, Morabito S. Production of the subtilase AB5 cytotoxin by Shiga toxin-negative *Escherichia coli*. *J Clin Microbiol.* 2010 Jan;48(1):178-83.
- Ogura Y, Ooka T, Whale A, Garmendia J, Beutin L, Tennant S, Krause G, Morabito S, Chinen I, Tobe T, Abe H, **Tozzoli R**, Caprioli A, Rivas M, Robins-Browne R, Hayashi T, Frankel G. TccP2 of O157:H7 and non-O157 enterohemorrhagic *Escherichia coli* (EHEC): challenging the dogma of EHEC-induced actin polymerization. *Infect Immun.* 2007 Feb;75(2):604-12. E
- Battisti A, Lovari S, Franco A, Di Egidio A, **Tozzoli R**, Caprioli A, Morabito S. Prevalence of *Escherichia coli* O157 in lambs at slaughter in Rome, central Italy. *Epidemiol Infect.* 2006 Apr;134(2):415-9.
- Tozzoli R**, Caprioli A, Morabito S. Detection of toxB, a plasmid virulence gene of *Escherichia coli* O157, in enterohemorrhagic and enteropathogenic *E. coli*. *J Clin Microbiol.* 2005 Aug;43(8):4052-6.
- Silvestro L, Caputo M, Blancato S, Decastelli L, Fioravanti A, **Tozzoli R**, Morabito S, Caprioli A. Asymptomatic carriage of verocytotoxin-producing *Escherichia coli* O157 in farm workers in Northern Italy. *Epidemiol Infect.* 2004 Oct;132(5):915-9.
- Morabito S, **Tozzoli R**, Oswald E, Caprioli A. A mosaic pathogenicity island made up of the locus of enterocyte effacement and a pathogenicity island of *Escherichia coli* O157:H7 is frequently present in attaching and effacing *E. coli*. *Infect Immun.* 2003 Jun;71(6):3343-8.
- Morabito S, **Tozzoli R**, Caprioli A, Karch H, Carattoli A. Detection and characterization of class 1 integrons in enterohemorrhagic *Escherichia coli*. *Microb Drug Resist.* 2002 Summer;8(2):85-91.