

PROF ALESSANDRA CARATTOLI

Personal Information

Name/ Surname

Alessandra Carattoli

Departement Address

Molecular Medicine
Sapienza University of Rome
Faculty of Pharmacy and Medicine
Laboratory of Microbiology
Viale di Porta Tiburtina n. 28,
00185 Rome, Italy
Email: alessandra.carattoli@uniroma1.it

Nationality

Italian

Occupational Field

Molecular microbiology, antimicrobial resistance

Work experience

From 2019
(March)-until now
2013-2019

Full Professor of Microbiology, Dept. of Molecular Medicine, Sapienza University of Rome
Research Director, Department of Infectious Diseases, Istituto Superiore di Sanità, Rome

1997-2013

Senior Scientist, Department of Infectious Diseases, Istituto Superiore di Sanità, Rome

Education

1989-1992
1985

PhD in Molecular and Cellular Biology, University of Rome La Sapienza
Laurea cum Laude in Biological Sciences, University of Rome La Sapienza

Awards

2018

Highly Cited Researcher, Top 1% by citation per field and year by Clarivate Analytics Web of Science, Cross-Field Category

2018

Top Italian Woman Scientist, Fondazione Onda (Osservatorio nazionale sulla salute della donna e di genere)

2017

Highly Cited Researcher, Top 1% by citation per field and year by Clarivate Analytics Web of Science, Pharmacology & Toxicology Category

2017

Commendatore Ordine di Merito della Repubblica Italiana, honour conferred on 9 Jan 2017 by the Italian President of Republic Sergio Mattarella

2016

Highly Cited Researcher, Top 1% by citation per field and year by Clarivate Analytics Web of Science, Pharmacology & Toxicology Category

2015

World's Most Influential Scientific Minds, by ISI-Thompson Reuters Pharmacology and Toxicology Category

2014

Honorary Membership of the Hungarian Society of Microbiology by the Hungarian Academy of Science, Budapest Hungary

2013

Program Committee Award in the area Resistance: Mechanisms and Consequences, 53rd International Conference on Antimicrobial Agents and Chemotherapy, Denver, USA

2011

Program Committee Award in the area Resistance: Mechanisms and Consequences, 51th International Conference on Antimicrobial Agents and Chemotherapy, Chicago, USA

Index (Google Scholar at 5/3/2019)	<p>Authored 154 papers in Pub-Med https://www.ncbi.nlm.nih.gov/pubmed/orcid.org/0000-0002-6120-6526</p> <p>H-index 62 i10-index 133 Total citations 14700 https://scholar.google.it/citations?user=f4v5mlgAAAAJ&hl=en</p>
Main research interests	<p>Prof. Carattoli is dedicated to innovation in the field of bacterial genomics, producing advanced diagnostics and bioinformatics tools, useful for antimicrobial resistance identification, detection of novel mechanisms of resistance, identification of trafficking of antibiotic resistance among bacteria of clinical relevance for human health. In 2005, she proposed a molecular method useful for the rapid identification of plasmids within enterobacterial hosts (PBRT, PCR-Based Replicon Typing). PBRT was worldwide adopted and the paper describing the method has currently more than 1800 citations. In 2008, she designed the plasmid Multi Locus Sequence Typing (pMLST) and the pMLST database is currently the most publicly consulted data source for plasmid epidemiology, tracing antimicrobial resistance spread in bacterial pathogens but also in commensals of human, animal and environmental origin.</p> <p>In 2014, she wrote the PlasmidFinder database in collaboration with the Center for Genomic Epidemiology of the Technical University of Denmark for a quick in silico-based identification of plasmids within raw data of whole genome sequences of the bacterial hosts. These methods and tools substantially impacted and changed the standard methodology used for bacterial typing, allowing to collect plasmid information on a large number of strains. Her studies updated the characterization of high risk and multi-drug resistant bacterial pathogens, but also contributed to increase knowledge on the horizontal transmission of genes in bacteria, identifying successful and epidemic plasmids spreading in the world. She studied plasmids and genomes of bacteria isolated in all the world, collaborating with the most influential research groups of Europe and USA, but also collaborating with China, Russia, Canada, and South America, acting as reference laboratory for plasmid characterization and providing training to numerous foreigner students from all the world.</p> <p>In 2014-2016 she has been Visiting Scientist at the Universität Bern, Institut für Infektionskrankheiten, Switzerland.</p>
Top 10 most cited papers (with Carattoli as first or last name)	<p>Carattoli A, Bertini A, Villa L, Falbo V, Hopkins KL, Threlfall EJ. 2005. Identification of plasmids by PCR-based replicon typing. <i>J Microbiol Meth</i> 63:219-28 [1807 citations]</p> <p>Carattoli A. 2009. Resistance plasmid families in Enterobacteriaceae. <i>Antimicrob Agents Chemother</i> 53:2227-38 [821 citations]</p> <p>Carattoli A, Zankari E, García-Fernández A, Voldby Larsen M, Lund O, Villa L, Møller Aarestrup F, Hasman H. 2014. <i>In silico</i> detection and typing of plasmids using PlasmidFinder and plasmid multilocus sequence typing. <i>Antimicrob Agents Chemother</i> 58:3895-903 [687 citations]</p> <p>Carattoli A. 2013. Plasmids and the spread of resistance. <i>Int J Med Microbiol</i> 303:298-30 [403 citations]</p> <p>Villa L, García-Fernández A, Fortini D, Carattoli A. 2010. Replicon sequence typing of IncF plasmids carrying virulence and resistance determinants <i>J Antimicrob Chemother</i></p>

65:2518-29 [367 citations]

Carattoli A. 2008. Animal reservoirs for extended spectrum β -lactamase producers. *Clinical Microb Infect* 14:117-23 [338 citations]

Iacono M, Villa L, Fortini D, Bordoni R, Imperi F, Bonnal RJ, Sicheritz-Ponten T, De Bellis G, Visca P, Cassone A, **Carattoli A.** 2008. Whole-genome pyrosequencing of an epidemic multidrug-resistant *Acinetobacter baumannii* strain belonging to the European clone II group. *Antimicrob Agents Chemother* 52:2616-25 [265 citations]

García-Fernández A, Fortini D, Veldman K, Mevius D, **Carattoli A.** 2008. Characterization of plasmids harbouring *qnrS1*, *qnrB2* and *qnrB19* genes in *Salmonella*. *J Antimicrob Chemother* 63:274-28 [214 citations]

García-Fernández A, Chiaretto G, Bertini A, Villa L, Fortini D, Ricci A, **Carattoli A.** 2008. Multilocus sequence typing of IncI1 plasmids carrying extended-spectrum β -lactamases in *Escherichia coli* and *Salmonella* of human and animal origin. *J Antimicrob Chemother* 61:1229-33 [210 citations]

Hopkins KL, Liebana E, Villa L, Batchelor M, Threlfall EJ, **Carattoli A.** 2006. Replicon typing of plasmids carrying CTX-M or CMY β -lactamases circulating among *Salmonella* and *Escherichia coli* isolates *Antimicrob Agents Chemother* 50:3203-6 [195 citations]

Signed by Alessandra Carattoli