



Marzia Del Re

Date of birth: 09/03/1984 | **Nationality:** Italian | **Gender:** Female |

Email address: marzia.delre@unicamillus.org | **Email address:** marzia.delre@gmail.com |

Address: Saint Camillus International University of Health and Medical Sciences, Via di Sant'Alessandro, 8, 00131, Rome, Italy (Work)

● EDUCATION AND TRAINING

10/06/2009 Pisa, Italy

DEGREE OF DOCTOR OF PHARMACY (PHARMD) University of Pisa

Thesis title: Pharmacogenetic analysis of thymidylate synthetase in patients with colorectal cancer under treatment with capecitabine: development of a new method of genotyping and clinical application

31/07/2014 Pisa, Italy

DIPLOMA OF SPECIALIZATION IN BIOCHEMISTRY University of Pisa

Thesis title: Development and clinical application of genetic analysis methods for the diagnosis of fluoropyrimidine toxicity and resistance to tyrosine kinase inhibitors in oncology

04/12/2015 Pisa, Italy

MASTER'S DEGREE (II LEVEL) IN CLINICAL TRIALS IN INTERNAL MEDICINE, HEMATOLOGY AND ONCOLOGY University of Pisa

Thesis title: Clinical trials in prostate cancer: the role of pharmacogenetic biomarkers

20/04/2018 Pisa, Italy

RESEARCH DOCTORATE DEGREE (PHD) University of Pisa

Thesis title: Development of a pharmacogenetic-based approach for prevention of fluoropyrimidine-related toxicities and diagnosis of resistance to targeted treatments in cancer patients

09/2009 – 01/2012 Pisa, Italy

RESEARCH FELLOWSHIP University of Pisa

Research project: Evaluation of toxicity and resistance to oncological treatments

Address Department of Clinical and Experimental Medicine, Pisa, Italy

02/2012 – 07/2012 Milano, Italy

RESEARCH FELLOWSHIP Umberto Veronesi Foundation

Research project: Pharmacogenetic approach for the optimization of hormone treatment in patients with estrogen positive breast cancer

05/2013 – 05/2015 Pisa, Italy

RESEARCH GRANT University of Pisa

Research project: Evaluation of toxicity and resistance to oncological treatments

Address Department of Clinical and Experimental Medicine, Pisa, Italy

05/2015 – 04/2016 Milano, Italy

RESEARCH FELLOWSHIP Italian Society of Pharmacology

Research project: Monitoring of treatment resistance in NSCLC patients by liquid biopsy

05/2016 – 12/2016 Pisa, Italy

RESEARCH GRANT University of Pisa

Research project: Evaluation of toxicity and resistance to oncological treatments

Address Department of Clinical and Experimental Medicine, Pisa, Italy

06/2015 – 08/2015 Rotterdam, Netherlands

RESEARCH FELLOWSHIP ERASMUS+ TRAINEESHIP Department of Clinical Chemistry, Erasmus University Medical Center

Research project: Research in patients with solid tumors to predict the response to treatments by analyzing circulating nucleic acids.

05/2016 – 07/2016 Rotterdam, Netherlands

RESEARCH FELLOWSHIP ERASMUS+ TRAINEESHIP Department of Clinical Chemistry, Erasmus University Medical Center

Research project: Research in patients with solid tumors to predict response to treatments by analyzing circulating nucleic acids

● **LANGUAGE SKILLS**

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C2	C2	C2	C2	C2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

● **DIGITAL SKILLS**

Social Media/Social Network | Use of email and shared workspace services | Database management and archival | Microsoft Office: proficient user of Word, Excel and Powerpoint | Next-generation sequencing data analysis | Online search resources

● **ORGANIZATION OF INTERNATIONAL SCIENTIFIC CONGRESSES**

15/05/2015 – 16/05/2015

I Congress "The Young Biomarkers Day - a Italian Society of Pharmacology (SIF)-Italian Association of Medical Oncology (AIOM) joint symposium"

15/06/2016 – 16/06/2016

II Congress "The Golden Helix Pharmacogenomics Day", under the patronage of Italian Society of Pharmacology (SIF)-Italian Association of Medical Oncology (AIOM) and GoldenHelix Foundation

● **INVITED SPEAKER AT NATIONAL SCIENTIFIC CONGRESSES AND CONFERENCES**

XVI National Congress of the Italian Medical Oncology Association (AIOM), Rome, October 2014

Title of presentation: Analysis of EGFR T790M mutation in circulating tumor DNA of NSCLC patients resistant to treatment with EGFR tyrosine kinase inhibitors

Conference of the Italian Medical Oncology Association (AIOM) - News and criticalities in Oncology, Milan, November 2014

Title of presentation: "Transversal" molecular biomarkers: when the mutation chooses the therapeutic strategy

XVII National Congress of the Italian Association of Medical Oncology (AIOM), Rome, October 2015

Title of presentation: The heterogeneity of prostate cancer: how the pathophysiology suggests the pharmacological approach

National Congress of the Italian Group Foundation for the Study of Cancer of the Digestive System (GISCAD), Bergamo, November 2015

Title of presentation: Biomarkers in tumors of the gastrointestinal tract: from the laboratory to the clinic

Conference on Precision Medicine and Targets in Oncology, Milan, May 2016

Title of presentation: The laboratory in precision medicine

XVIII National Congress of the Italian Medical Oncology Association (AIOM), Rome, October 2016

Title of presentation: AR-V7 Variant Detected on RNA Extracted from Exosomes Predicts Resistance to Hormone Therapy in Patients with Metastatic Prostate Cancer

Monothematic Conference of Clinical Pharmacology of the Italian Society of Pharmacology (SIF), Naples, December 2016

Title of presentation: Assessment of DPYD Deficiency as Pre-Treatment Screening in Fluoropyrimidine Candidate Patients: An Analysis of 1454 Patients

90th National Congress of the Italian Society of Urology (SIU), Naples, October 2017

Title of presentation: Advanced prostate cancer: tumor heterogeneity and clinical implications: what we need to know

XXXVIII National Congress of the Italian Society of Pharmacology (SIF), Rimini, October 2017

Title of presentation: The role of circulating and CSF DNA in the personalization of treatment

XX National Congress of the Italian Medical Oncology Association (AIOM), Rome, November 2018

Title of presentation: The molecular targets of castration-resistant prostate cancer

51st National Congress of the Italian Society of Clinical Biochemistry (SIBIOC), Milan, November 2019

Title of presentation: Circulating biomarkers to predict therapeutic resistance in patients with castration-resistant prostate cancer

National Congress of the Italian Society of Oncological Urology (SIURO), Bergamo, January 2020

Title of presentation: Role of circulating tumor DNA in monitoring patients with metastatic bladder cancer

52nd National Congress of the Italian Society of Clinical Biochemistry (SIBIOC), October 2020

Title of presentation: Molecular profiling of circulating nucleic acids: clinical recommendations

XXII National Congress of the Italian Association of Medical Oncology (AIOM), November 2020

Title of presentation: Gender Differences in Cancer Therapy

Virtual Conference of the Italian Association of Medical Oncology (AIOM) - Oncology Wednesdays, February 2021

Title of presentation: Integrated use of circulating biomarkers and radiomic profiles

40th National Congress of the Italian Society of Pharmacology (SIF), March 2021

Title of presentations:

- 1) Artificial intelligence for data analysis in biomarker research
- 2) Promises and challenges of tumor molecular boards for the efficacy and safety of treatments

Virtual Conference of the Italian Association of Medical Oncology (AIOM) - Oncology Wednesdays, May 2021

Title of presentation: Translational endpoints in clinical trials: instructions for use

Virtual Conference of the Italian Society of Clinical Biochemistry and Clinical Molecular Biology (SIBIOC) - "Liquid biopsy" as a source of potential biomarkers in the management and monitoring of cancer patients, June 2021

Title of presentation: Pros and cons of liquid biopsy for the treatment of lung cancer

XXIII National Congress of the Italian Association of Medical Oncology (AIOM), October 2021

Title of presentation: Molecular profiling of circulating nucleic acids: news from clinical research - Educational session

● **INVITED SPEAKER AT INTERNATIONAL SCIENTIFIC CONGRESSES AND CONFERENCES**

XVII Golden Helix International Congress - Pharmacogenomics Days - Rotterdam, May 2016

Title of presentation: Cell-free DNA analysis for lung and prostate cancer

Annual Congress of the European Society of Medical Oncology (ESMO), Madrid, September 2017

Title of presentation: Selecting the optimal combination partner for today's immunotherapeutic approaches

IV Congress of the European Society of Pharmacogenomics and Personalised Therapy (ESPT), Catania, October 2017

Title of presentation: Exosomal AR-V7 for early detection of prostate cancer resistance

Annual Congress of the American Association for Cancer Research (AACR), Chicago, April 2018

Title of presentation: A Key Role for Circulating Nucleic Acids as Predictive Biomarkers of Response in Immunotherapy and Targeted Treatments

Conference on Cell Free DNA: innovation for biomarkers in oncology, Utrecht, June 2018

Title of presentation: Treatment monitoring of Pancreatic and NSCLC

Conference series of the European Association for Cancer Research (EACR) - Making it Personal: Cancer Precision Medicine, Bergamo, November 2018

Title of presentation: Liquid biopsy from activating mutations to target expression: the horizon is expanding

Annual Congress of the European Society of Medical Oncology (ESMO), Madrid, September 2019

Title of presentation: Drug-food interactions

5th Congress of the European Society for Pharmacogenomics and Personalised Therapy (ESPT), Seville, October 2019

Title of presentation: Circulating predictive biomarkers of response to immunotherapy

Select Science Virtual Summit on Cancer and Immunology Research 2020, May 2020

Title of presentation: Integrating molecular analysis and radiomic features to predict immunotherapy response in NSCLC patients

Science House, Church Farm Business Park, Corston, Bath, BA2 9AP, UK - <https://www.selectscience.net/>

Train to Annual Congress of the European Society of Medical Oncology (ESMO) Clinical Case Discussion, August 2021

Title of presentation: Use of liquid biomarkers in cancer care

European Lung Cancer Congress (ELCC), March 2022

Title of presentation: Artificial intelligence to manage large set of data in thoracic oncology - Educational session

Title of presentation: Cost-effectiveness of optimized immunotherapy dosing

● NATIONAL SCIENTIFIC AWARDS

Italian Society of Pharmacology (SIF), 2011

Reason for the award: Contribution to research in pharmacogenetics

Italian Society of Pharmacology (SIF) and Assogenerici, 2014

Reason for the award: Contribution to research in Clinical Pharmacology, Pharmacovigilance, Pharmacoepidemiology and Pharmacogenesistica

Guido Berlucchi Foundation Award, 18th AIOM National Congress, 2016

Reason for the award - oral presentation: The detection of AR-V7 in plasma-derived exosomal RNA strongly predicts resistance to hormonal therapy in metastatic prostate cancer patients

Italian Society of Pharmacology (SIF) and Farmindustria for pharmacological research, 2016

Award-winning publication: Del Re M, Tiseo M, Bordi P, D'Incecco A, Camerini A, Petrini I, Lucchesi M, Inno A, Spada D, Vasile E, Citi V, Malpeli G, Testa E, Gori S, Falcone A, Amoroso D, Chella A, Cappuzzo F, Ardizzoni A, Scarpa A, Danesi R. Contribution of KRAS mutations and c.2369C > T (p.T790M) EGFR to acquired resistance to EGFR-TKIs in EGFR mutant NSCLC: a study on circulating tumor DNA. *Oncotarget*. 2017 Feb 21;8(8):13611-13619. doi: 10.18632/oncotarget.6957.

National Congress of the Italian Association of Medical Oncology (AIOM) - Lung cancer award 2018

Award-winning presentation: "The amount of activating EGFR mutation in circulating tumor DNA is a biomarker of response to osimertinib".

● INTERNATIONAL SCIENTIFIC AWARDS

American Society of Clinical Oncology (ASCO) Conquer Cancer Merit Award 2011

Awarded for research entitled: Prediction of fluoropyrimidine toxicities by screening DPYD genetic variants

The Merit Awards are awarded in a limited number on a worldwide scale (about 100 / year) to young female researchers selected for scientific merit and whose high-quality research will subsequently be presented at an ASCO Annual Meeting.

American Society of Clinical Oncology (ASCO) Conquer Cancer Merit Award 2013

Awarded for research entitled: Impact of IVS14+1G>A and 2846A>T DPYD polymorphisms on toxicity outcome of patients treated with fluoropyrimidine-containing regimens

The Merit Awards are awarded in a limited number on a worldwide scale (about 100 / year) to young female researchers selected for scientific merit and whose high-quality research will subsequently be presented at an ASCO Annual Meeting.

European Society of Medical Oncology (ESMO) Merit Award 2020

Awarded for research entitled: Ki67 expression and CDK4/6i activity: an emerging role for PIK3CA mutations in metastatic breast cancer patients

The Merit Awards are awarded in a limited number on a worldwide scale to young female researchers selected for scientific merit and whose research, of high quality, will subsequently be presented at an Annual ESMO Meeting.

● JOB POSITIONS

01/10/2024 - CURRENT

Associate Professor at Saint Camillus International University of Health and Medical Sciences

Teaching pharmacology to Med students
Research

02/09/2024 – CURRENT

Direzione Scientifica Policlinico A. Gemelli

Liquid biopsy lab for cancer patients

01/02/2022 – 31/08/2024

Senior Researcher (Pharmacology) at the Department of Clinical and Experimental Medicine - University of Pisa

Tasks and duties:

- 1) Teaching pharmacology to students in Medicine and Surgery, Schools of Specializations and Masters
- 2) Co-ordinator of Pharmacogenetics laboratory within the Unit of Clinical Pharmacology and Pharmacogenetics.
- 3) Report of molecular analyzes on germline, somatic and circulating nucleic acids performed with PCR instrumentation, Sanger sequencing, Real Time PCR, digital PCR, Next Generation Sequencing.
- 4) Evaluation of the onset of drug resistance for the treatment of oncological and haematological pathologies by means of the identification of specific primary or secondary molecular alterations related to cellular targets; identification of biomarkers for the selection of drug therapies in the context of precision medicine in oncology.
- 5) Development of innovative methods in the context of the correlation between genotype and drug response for the improvement of the risk / benefit ratio of drug therapies and the prevention of adverse reactions.
- 6) Drafting of guidelines and recommendations for the use of laboratory techniques to support clinical activities.

30/11/2022 – 30/05/2023

Visiting Researcher at the Center of Thoracic Oncology, The Tisch Cancer Institute at Mount Sinai Health System, New York, NY

Research on the use of circulating nucleic acids released free or within microvesicles by tumors as a tool for diagnosis, monitoring of response and identification of mechanisms of resistance and actionable mutations by NGS in lung cancer.

02/01/2017 – 31/01/2022

Senior staff at the University Hospital of Pisa

Tasks and duties:

- 1) Co-ordinator of Pharmacogenetics laboratory within the Unit of Clinical Pharmacology and Pharmacogenetics.
- 2) Report of molecular analyzes on germline, somatic and circulating nucleic acids performed with PCR instrumentation, Sanger sequencing, Real Time PCR, digital PCR, Next Generation Sequencing.
- 3) Evaluation of the onset of drug resistance for the treatment of oncological and haematological pathologies by means of the identification of specific primary or secondary molecular alterations related to cellular targets; identification of biomarkers for the selection of drug therapies in the context of precision medicine in oncology.
- 4) Development of innovative methods in the context of the correlation between genotype and drug response for the improvement of the risk / benefit ratio of drug therapies and the prevention of adverse reactions.
- 5) Drafting of guidelines and recommendations for the use of laboratory techniques to support clinical activities.

● **TRAINING AND RESEARCH ACTIVITIES AT QUALIFIED FOREIGN INSTITUTIONS**

2015 – 2019

Erasmus University Medical Center, Rotterdam, The Netherlands

Position: Visiting Scientist as an Erasmus + fellow at the Pharmacogenetics laboratory for carrying out research in patients with solid tumors to predict the response to treatments by analyzing circulating nucleic acids.

Tutor: Prof. Dr. Ron HN van Schaik (PhD/FACB/EuSpLM), Professor of Pharmacogenetics and Chief, Department of Clinical Chemistry

Total time: 11 months

01/08/2017 – 31/08/2017

Clinical Pharmacology Section, National Cancer Institute, National Institutes of Health, Bethesda, USA

Position: Visiting Scientist on training leave from his own institution at the Clinical Pharmacology laboratory for carrying out in vitro studies on prostate cancer to predict the response to treatments.

Tutor: William Douglas Figg Sr., PharmD, MBA, Deputy chief of the Genitourinary Malignancies Branch and Head, Molecular Pharmacology Section

● **UNIVERSITY TEACHING ACTIVITY**

2013 – CURRENT

University Master in Pharmacovigilance, Pharmacoepidemiology and Regulatory Activities at the University of Campania "Luigi Vanvitelli"

Teaching subject: pharmacogenetics

2018 – CURRENT

School of Specialization in Hospital Pharmacy at the University of Pisa

Teaching subject: pharmacogenetics and anticancer drugs

2018 – 2019

University Master in Clinical Research Associate at the University of Florence

Teaching subject: pharmacogenetics

2018 – 2019

School of Specialization in Pharmacology at the University of Verona

Teaching subject: biomarkers and clinical research in oncology

2019 – CURRENT

School of Specialization in Medical Oncology at the University of Pisa

Teaching subject: biomarkers and pharmacogenetics

2020 – CURRENT

University Master in Oncological Imaging at the University of Pisa

Teaching subject: biomarkers and evaluation of response to treatment

2017 – CURRENT

University Master in Clinical Trials of Drugs in Internal Medicine, Hematology and Oncology at the University of Pisa

Teaching subject: clinical pharmacogenetics: basic concepts and clinical applications

2021 – CURRENT

University Master in Methodologies of Pathological Anatomy for the study of predictive markers of therapeutic response at the University of Naples "Federico II"

Teaching subject: Analysis of alterations in cfDNA by digital droplet PCR

2016 – CURRENT

Supervisor, co-advisor and tutor of degree and PhD theses at the University of Pisa

Total of students tutored: 10

● **PARTICIPATION IN INTERNATIONAL RESEARCH GROUPS**

Erasmus University Medical Center, Rotterdam, The Netherlands

Research topic: study of the biological properties of exosomes and somatic and germline circulating nucleic acids as biomarkers of response and toxicity to cancer therapies in patients.

Senior Scientists:

Prof. Dr. Ron HN van Schaik, Professor of Pharmacogenetics
Prof. Dr. Guido Jenster, Professor of Experimental Urological Oncology

Selected publications:

Del Re M, Biasco E, Crucitta S, Derosa L, Rofi E, Orlandini C, Miccoli M, Galli L, Falcone A, Jenster GW, van Schaik RH, Danesi R. The Detection of Androgen Receptor Splice Variant 7 in Plasma-derived Exosomal RNA Strongly Predicts Resistance to Hormonal Therapy in Metastatic Prostate Cancer Patients. *Eur Urol.* 2017 Apr;71(4):680-687 (IF 2020: 20.096)

Steendam CMJ, Atmodimedjo P, de Jonge E, Paats MS, van der Leest C, Oomen-de Hoop E, Jansen MPH, **Del Re M**, von der Thüsen JH, Dinjens WNM, van Schaik RHN, Aerts JGJV, Dubbink HJ. Plasma Cell-Free DNA Testing of Patients With EGFR Mutant Non-Small-Cell Lung Cancer: Droplet Digital PCR Versus Next-Generation Sequencing Compared With Tissue-Based Results. *JCO Precision Oncology* 2019. DOI: 10.1200/PO.18.00401 (IF 2020: 4.853)

Del Re M, Crucitta S, Sbrana A, Rofi E, Paolieri F, Gianfilippo G, Galli L, Falcone A, Morganti R, Porta C, Efstathiou E, van Schaik R, Jenster G, Danesi R. AR-V7 and AR-FL expression is associated with clinical outcome: a translational study in patients with castrate resistant prostate cancer. *BJU Int.* 2019 May 4. doi: 10.1111/bju.14792 (IF 2020: 5.588)

Bos MK, Nasserinejad K, Jansen MPH, Angus L, Atmodimedjo PN, de Jonge E, Dinjens WNM, van Schaik RHN, **Del Re M**, Dubbink HJ, Sleijfer S, Martens JWM. Comparison of variant allele frequency and number of mutant molecules as units of measurement for circulating tumor DNA. *Mol Oncol.* 2021 Jan;15(1):57-66 (IF 2020: 6.603)

Del Re M, van Schaik RHN, Fogli S, Mathijssen RHJ, Cucchiara F, Capuano A, Scavone C, Jenster GW, Danesi R. Blood-based PD-L1 analysis in tumor-derived extracellular vesicles: Applications for optimal use of anti-PD-1/PD-L1 axis inhibitors. *Biochim Biophys Acta Rev Cancer.* 2021 Jan;1875(1):188463 (IF 2020: 10.680)

US Department of Defense Prostate Cancer Program, QIMR Berghofer Medical Research Institute, The University of Queensland, Brisbane, AU

Research topic: study of the biological properties of exosomes as biomarkers of response to oncological therapies in patients with prostate cancer.

Senior Scientist: Dr. Carolina Soekmadji, PhD

Selected publication: Martens-Uzunova ES, Kusuma GD, Crucitta S, Lim HK, Cooper C, Riches JE, Azad A, Ochiya T, Boyle GM, Southey MC, **Del Re M**, Lim R, Ramm GA, Jenster GW, Soekmadji C. Androgens alter the heterogeneity of small extracellular vesicles and the small RNA cargo in prostate cancer. *J Extracell Vesicles.* 2021, e12136. doi: 10.1002/jev2.12136 (IF 2020: 25.841)

● PARTICIPATION IN NATIONAL RESEARCH GROUPS

Head of Research Unit with the Unit of Medical Oncology (Prof. Alfredo Falcone), University Hospital of Pisa, on biomarkers predicting toxicity and resistance to cancer treatments

Selected publications:

- **Del Re M**, Di Paolo A, van Schaik RH, Bocci G, Simi P, Falcone A, Danesi R. Dihydropyrimidine dehydrogenase polymorphisms and fluoropyrimidine toxicity: ready for routine clinical application within personalized medicine? *EPMA J.* 2010;1(3):495-502. doi: 10.1007/s13167-010-0041-2

- **Del Re M**, Vivaldi C, Rofi E, Vasile E, Miccoli M, Caparello C, d'Arienzo PD, Fornaro L, Falcone A, Danesi R. Early changes in plasma DNA levels of mutant KRAS as a sensitive marker of response to chemotherapy in pancreatic cancer. *Sci Rep.* 2017;7(1):7931. doi: 10.1038/s41598-017-08297-z

- **Del Re M**, Marconcini R, Pasquini G, Rofi E, Vivaldi C, Bloise F, Restante G, Arrigoni E, Caparello C, Bianco MG, Crucitta S, Petrini I, Vasile E, Falcone A, Danesi R. PD-L1 mRNA expression in plasma-derived exosomes is associated with response to anti-PD-1 antibodies in melanoma and NSCLC. *Br J Cancer.* 2018;118(6):820-824. doi: 10.1038/bjc.2018.9

- Cremolini C, Rossini D, Dell'Aquila E, Lonardi S, Conca E, **Del Re M**, Busico A, Pietrantonio F, Danesi R, Aprile G, Tamburini E, Barone C, Masi G, Pantano F, Pucci F, Corsi DC, Pella N, Bergamo F, Rofi E, Barbara C, Falcone A, Santini D. Rechallenge for Patients With RAS and BRAF Wild-Type Metastatic Colorectal Cancer With Acquired Resistance to First-line Cetuximab and Irinotecan: A Phase 2 Single-Arm Clinical Trial. *JAMA Oncol.* 2019 Mar 1;5(3):343-350. doi: 10.1001/jamaoncol.2018.5080

- **Del Re M**, Cinieri S, Michelucci A, Salvadori S, Loupakis F, Schirripa M, Cremolini C, Crucitta S, Barbara C, Di Leo A, Latiano TP, Pietrantonio F, Di Donato S, Simi P, Passardi A, De Braud F, Altavilla G, Zamagni C, Bordonaro R, Butera A, Maiello E, Pinto C, Falcone A, Mazzotti V, Morganti R, Danesi R. DPYD*6 plays an important role in fluoropyrimidine

toxicity in addition to DPYD*2A and c.2846A>T: a comprehensive analysis in 1254 patients. *Pharmacogenomics J.* 2019;19(6):556-563. doi: 10.1038/s41397-019-0077-1

- **Del Re M**, Bertolini I, Crucitta S, Fontanelli L, Rofi E, De Angelis C, Diodati L, Cavallero D, Gianfilippo G, Salvadori B, Fogli S, Falcone A, Scatena C, Naccarato AG, Roncella M, Ghilli M, Morganti R, Fontana A, Danesi R. Overexpression of TK1 and CDK9 in plasma-derived exosomes is associated with clinical resistance to CDK4/6 inhibitors in metastatic breast cancer patients. *Breast Cancer Res Treat.* 2019;178(1):57-62. doi: 10.1007/s10549-019-05365-y

Head of Research Unit with the Unit of Medical Oncology of the University Hospital of Parma (Prof. Marcello Tiseo) on biomarkers of sensitivity / resistance of lung cancer to drug treatments

Selected publications:

- **Del Re M**, Tiseo M, Bordi P, D'Incecco A, Camerini A, Petrini I, Lucchesi M, Inno A, Spada D, Vasile E, Citi V, Malpeli G, Testa E, Gori S, Falcone A, Amoroso D, Chella A, Cappuzzo F, Ardizzoni A, Scarpa A, Danesi R. Contribution of KRAS mutations and c.2369C>T (p.T790M) EGFR to acquired resistance to EGFR-TKIs in EGFR mutant NSCLC: a study on circulating tumor DNA. *Oncotarget.* 2017;8(8):13611-13619. doi:10.18632/oncotarget.6957

- Bordi P, Tiseo M, Rofi E, Petrini I, Restante G, Danesi R, **Del Re M**. Detection of ALK and KRAS Mutations in Circulating Tumor DNA of Patients With Advanced ALK-Positive NSCLC With Disease Progression During Crizotinib Treatment. *Clin Lung Cancer.* 2017;18(6):692-697. doi: 10.1016/j.clcc.2017.04.013

- **Del Re M**, Bordi P, Petrini I, Rofi E, Mazzoni F, Belluomini L, Vasile E, Restante G, Di Costanzo F, Falcone A, Frassoldati A, van Schaik RHN, Steendam CMJ, Chella A, Tiseo M, Morganti R, Danesi R. Patients with NSCLC may display a low ratio of p.T790M vs. activating EGFR mutations in plasma at disease progression: implications for personalised treatment. *Oncotarget.* 2017;8(49):86056-86065. doi:10.18632/oncotarget.20947

- **Del Re M**, Bordi P, Rofi E, Restante G, Valleggi S, Minari R, Crucitta S, Arrigoni E, Chella A, Morganti R, Tiseo M, Petrini I, Danesi R. The amount of activating EGFR mutations in circulating cellfree DNA is a marker to monitor osimertinib response. *Br J Cancer.* 2018;119(10):1252-1258. doi: 10.1038/s41416-018-0238-z

- Bordi P*, **Del Re M***, Minari R, Rofi E, Buti S, Restante G, Squadrilli A, Crucitta S, Casartelli C, Gnetti L, Azzoni C, Bottarelli L, Petrini I, Cosenza A, Ferri L, Rapacchi E, Danesi R, Tiseo M. From the beginning to resistance: Study of plasma monitoring and resistance mechanisms in a cohort of patients treated with osimertinib for advanced T790M-positive NSCLC. *Lung Cancer.* 2019 May;131:78-85. doi: 10.1016/j.lungcan.2019.03.017 (*co-first authors)

Head of Research Unit with the Thoracic Oncology Division of the European Institute of Oncology (IEO, Milan) (Prof. Filippo De Marinis, Dr. Antonio Passaro) on biomarkers predicting response to treatment of lung cancer

Selected publications:

- **Del Re M**, Arrigoni E, Restante G, Passaro A, Rofi E, Crucitta S, De Marinis F, Di Paolo A, Danesi R. Concise Review: Resistance to Tyrosine Kinase Inhibitors in Non-Small Cell Lung Cancer: The Role of Cancer Stem Cells. *Stem Cells.* 2018;36(5):633-640. doi: 10.1002/stem.2787

- **Del Re M**, Crucitta S, Gianfilippo G, Passaro A, Petrini I, Restante G, Michelucci A, Fogli S, de Marinis F, Porta C, Chella A, Danesi R. Understanding the Mechanisms of Resistance in EGFR-Positive NSCLC: From Tissue to Liquid Biopsy to Guide Treatment Strategy. *Int J Mol Sci.* 2019;20(16):3951. doi: 10.3390/ijms20163951

- **Del Re M**, Addeo A, Passaro A, Petrini I, van Schaik RH, Danesi R. Circulating tumor DNA and the future of EGFR-mutant lung cancer treatment. *Pharmacogenomics.* 2019;20(18):1255-1257. doi: 10.2217/pgs-2019-0150

- **Del Re M**, Cucchiara F, Petrini I, Fogli S, Passaro A, Crucitta S, Attili I, De Marinis F, Chella A, Danesi R. erbb in NSCLC as a molecular target: current evidences and future directions. *ESMO Open.* 2020;5(4):e000724. doi: 10.1136/esmoopen-2020-000724

- Attili I*, **Del Re M***, Guerini-Rocco E, Crucitta S, Pisapia P, Pepe F, Barberis M, Troncone G, Danesi R, de Marinis F, Malapelle U, Passaro A. The role of molecular heterogeneity targeting resistance mechanisms to lung cancer therapies. *Expert Rev Mol Diagn.* 2021 Aug;21(8):757-766. doi: 10.1080/14737159.2021.1943365 (*co-first authors)

Head of Research Unit with the Romagna Scientific Institute for the Study and Treatment of Tumors IRST-IRCCS (Meldola) (Dr. Ugo De Giorgi) on biomarkers predicting response to treatment in prostate and breast cancer

Selected publications:

- **Del Re M**, Conteduca V, Crucitta S, Gurioli G, Casadei C, Restante G, Schepisi G, Lolli C, Cucchiara F, Danesi R, De Giorgi U. Androgen receptor gain in circulating free DNA and splicing variant 7 in exosomes predict clinical outcome in

CRPC patients treated with abiraterone and enzalutamide. Prostate Cancer Prostatic Dis. 2021 Jun;24(2):524-531. doi: 10.1038/s41391-020-00309-w

- **Del Re M**, Omarini C, Diodati L, Palleschi M, Meattini I, Crucitta S, Lorenzini G, Isca C, Fontana A, Livi L, Piacentini F, Fogli S, De Giorgi U, Danesi R. Drug-drug interactions between palbociclib and proton pump inhibitors may significantly affect clinical outcome of metastatic breast cancer patients. ESMO Open 2021. doi: 10.1016/j.esmoop.2021.100231

CO-AUTHOR OF NATIONAL RECOMMENDATIONS / GUIDELINES

2018 Recommendations for the execution of molecular tests on liquid biopsy in oncology, in collaboration with AIOM-SIF-SIAPEC-SIBIOC

Link <https://www.aiom.it/raccomandazioni-per-lesecuzione-di-test-molecolari-su-biopsia-liquida-in-oncologia-luglio-2018/>

2019 Recommendations for pharmacogenetic analyses in oncology, in collaboration with AIOM-SIF

Link <https://www.aiom.it/raccomandazioni-2019-per-analisi-farmacogenetiche/>

2019 Recommendations for the implementation of mutational analysis and the management of patients with Gastrointestinal Stromal Tumor (GIST), in collaboration with AIOM-ISG-SIAPEC-IAP-SIBIOC-SICO-SIF

Link <https://www.aiom.it/raccomandazioni-2019-per-limplementazione-dellanalisi-mutazionale-e-la-gestione-del-paziente-con-tumore-stromale-gastrointestinale-gist/>

2020 Recommendations for the execution of Molecular Tests on Liquid Biopsy in Oncology, in collaboration with AIOM-SIAPEC-IAP-SIBIOC-SIF

Link <https://www.aiom.it/raccomandazioni-2020-per-lesecuzione-di-test-molecolari-su-biopsia-liquida-in-oncologia/>

2020 Recommendations for the implementation of BRCA mutational analysis in patients with metastatic pancreatic adenocarcinoma, in collaboration with AIOM-AISP-SIAPEC-IAP-SIBIOC-SICO-SIF-SIGE-SIGU

Link <https://www.aiom.it/raccomandazioni-2020-per-limplementazione-dellanalisi-mutazionale-brca-nei-pazienti-con-adenocarcinoma-del-pancreas-metastatico/>

2020 Recommendations on Agnostic Drugs, in collaboration with AIOM-SIAPEC / IAP-SIBIOC-SIF

Link <https://www.aiom.it/raccomandazioni-2020-sui-farmaci-agnostici/>

Molecular Tumor Board 2020 Recommendations, in collaboration with AIOM-SIAPEC-IAP-SIBIOC-SICO-SIF-SIGU-SIRM

Link <https://www.aiom.it/raccomandazioni-2020-tumor-board-molecolare/>

2021 Recommendations for the implementation of BRCA mutation analysis in patients with metastatic prostate cancer, in collaboration with AIOM-SIAPEC-IAP-SIBIOC-SIF-SIGU-AURO-SIU-SIURO-UROP-AIRO-aBRCAadabra onlus

Link <https://www.aiom.it/raccomandazioni-aiom-per-limplementazione-dellanalisi-mutazionale-brca-nei-pazienti-con-carcinoma-della-prostata-metastatico/>

2021 Recommendations for the implementation of the predictive and preventive BRCA test in breast, ovarian, pancreatic and prostate cancers, in collaboration with AIOM, AIRO, AISP, ANISC, AURO, AIOM Foundation, SIAPEC-IAP, SIBIOC, SICO, SIF

Link <https://www.aiom.it/raccomandazioni-per-limplementazione-del-test-brca-predittivo-e-preventivo-nei-tumori-della-mammella-dellovaio-del-pancreas-e-della-prostata/>

Link <https://www.aiom.it/linee-guida-aiom-2020-neoplasie-del-polmone/>

2021 Cardio-Oncology Guidelines, in collaboration with AIOM-ANMCO-ARCA-ICOS-SIBIOC-SIC-SIE-SIF-SIMG-SIRM-ISS

Link <https://www.aiom.it/linee-guida-aiom-2021-cardioncologia/>

● **PARTICIPATION IN THE IMPLEMENTATION OF PROJECT ACTIVITIES**

Research Project "Prevention of severe toxicity by fluoropyrimidines by screening dihydropyrimidine dehydrogenase polymorphisms"

Granting body: Italian Association for Cancer Research (AIRC)
Reference Code: 10436 - Grant proposal 2010
PI: Prof. Romano Danesi, University of Pisa
Funding: Euro 180,000

Role in the project: responsible for pharmacogenetic analyzes

Research Project "Validation of a clinical algorithm integrating genetic and phenotypic data for the prevention and diagnosis of toxicity by fluoropyrimidines"

Granting body: Istituto Toscano Tumori (ITT)
Grant proposal: 2010
PI: Prof. Romano Danesi, University of Pisa
Funding: Euro 150,000

Role in the project: responsible for pharmacogenetic analyses

Research Project "An in vitro study to assess the cooperation of EGFR mutations in promoting actionable resistance in NSCLC and explore new therapeutic strategies"

Granting body: AstraZeneca
Reference code: NCR-17-12673 - 2017
PI: Prof. Romano Danesi, University of Pisa
Funding: Euro 40,000

Role in the project: responsible for pharmacogenetic analyses

Research Project: "Advanced computer methodologies for the analysis of biomedical data"

Granting body: University of Pisa
Reference code: PRA_2015_0058 - University Research Projects (PRA) Call 2015
PI: Prof. Roberto Grossi, University of Pisa
Funding: Euro 55,000

Role in the project: responsible for pharmacogenetic analyzes

Research Project "Program for determining the DNA of the transplanted kidney circulating in the plasma of the recipient patient as a method of monitoring the response to immunosuppressive treatment and the risk of rejection"

Granting body: Tuscany Transplant Organization (OTT) - Tuscany Region
Reference code: CL / AOUP / 07 - Call OCT-2016
PI: Prof. Romano Danesi, University of Pisa
Funding: Euro 29,424

Role in the project: responsible for pharmacogenetic analyzes

Research Project "Evaluation of free DNA circulating in plasma as a biomarker for monitoring the response to immunosuppressive treatment and the risk of rejection in patients with solid organ transplantation"

Providing body: Tuscany Transplant Organization (OTT) - Tuscany Region
Reference code: 1.14 - Call OCT-2018
PI: Prof. Romano Danesi, University of Pisa
Funding: Euro 20,000

Role in the project: responsible for pharmacogenetic analyzes

● **AFFILIATION AND ROLE IN SCIENTIFIC SOCIETIES**

2011 – CURRENT

Italian Society of Pharmacology (SIF)

Role: Member (since 2017) and secretary of the Clinical Pharmacology Section (since 2019)

Italian Association of Medical Oncology (AIOM)

Aggregate member since 2018

European Society of Medical Oncology (ESMO)

Regular member since 2020

● **RESEARCH PROJECT FUNDING**

28/10/2022 – CURRENT

Identification of a gene dialogue signature of response to immunotherapy in SCLCs patients

Granting organization: AstraZeneca
PI: Dr. Marzia Del Re, University of Pisa
Funding: Euro 450,000

28/10/2022 – CURRENT

Application of circulating free DNA to monitor response and for the early detection of resistance to gilteritinib

Granting organization: Astellas Pharma
PI: Dr. Marzia Del Re, University of Pisa
Funding: Euro 650,000