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Present Positions

Full Professor in General Pathology, Department of Oncology and Hemato-Oncology (DIPO), University of Milan.

Scientific Coordinator, Molecular Pathology Unit, Department of Experimental Oncology, European Institute of Oncology (IEO), Milan.

Group Leader, Hormone-Related Cancers and Stem Cell Pathobiology Lab, IEO, Milan, Italy

Education

1982 – 1989 M.D., *summa cum laude*, University of Bari Medical School, Bari, Italy
1989 – 1993 Ph.D., Infectious Diseases, University of Bari, Bari, Italy
1993 – 1998 Board Specialty – Microbiology and Virology, University of Bari Medical School, Bari, Italy

Employment

1989 – 1993 Ph.D., Infectious Diseases, University of Bari, Bari, Italy
1993 – 1998 Postdoctoral Fellow, University of Bari Medical School, Bari, Italy
1998 – 2001 Visiting Associate, Oral and Pharyngeal Cancer Branch, NIDCR, National Institutes of Health, Bethesda, USA
2001 – 2006 Research Assistant, IEO, Milan, Italy
2006 – 2020 Senior Staff Scientist, IEO, Milan, Italy
2016 – 2018 Deputy Director, Program of Molecular Medicine, IEO, Milan, Italy
2018 – present Deputy Director, Novel Diagnostics Program, IEO, Milan, Italy
2018 – present Scientific Coordinator, Molecular Pathology Unit, IEO, Milan, Italy
2020 – present Group Leader, Hormone-Related Cancers and Stem Cell Pathobiology Lab, IEO, Milan, Italy

Academic Positions

1996 – 2001 University Researcher, Department of General Pathology, Faculty of Medicine and Surgery, University of Bari, Bari, Italy
2001 – 2006 Assistant Professor, University of Milan, Medical School, Milan, Italy
2006 – 2019 Associate Professor in General Pathology, University of Milan, Medical School, Milan, Italy
2019 – present Full Professor in General Pathology, Department of Oncology and Hemato-Oncology, University of Milan, Milan, Italy

Committees

2008 – present Scientific Committee, Biological Protocol Working Group (BPWG), International Breast Cancer Study Group, Switzerland
2009 – present Scientific Committee, Fondazione Umberto Veronesi Foundation (FUV), Italy
2012 – present Scientific and Technical Review Board of the IEO Biobank, Italy

- 2013 – present Scientific Fellowship Committee, Italian Association for Cancer Research (AIRC), Italy
- 2013 – present Scientific Committee, Agence Nationale de la Recherche, France
- 2014 – present Scientific Committee, EU-LIFE Translational Working Group
- 2015 Member of the International Peer Review Panel, University of Copenhagen for the evaluation of Biotech Research Innovation Center (BRIC) in Copenhagen
- 2018 – present Technical-Scientific Committee, SDN Foundation for Research and Higher Education in Nuclear Diagnostics, Naples

Honors and Awards

- 1998 – 2000 Fogarty Fellowship from the Fogarty International Center of National Institutes of Health (NIH), Bethesda, USA
- 2000 Special achievement award at National Institute of Dental and Craniofacial Research (NIDCR), NIH, USA
- 2005 ‘Giancarla Vollaro’ Foundation award for the startup of a Stem Cell Biology Unit at IEO, Milan, Italy

Patents and Biotechnological Activities

- Patent EP/20.06.16/EPA16175354 “Methods and Kits comprising gene signatures for stratifying breast cancer patients”, filed at the European Patent Office (EPO) on 7/11/2016. (Licensed to Tiziana Life Sciences, PLC for the commercial development phase. Product name: StemPrintER; FDA Application Number: Q161839/A001)
- Patent application EP/20173612.1 “Methods and kits for determining the risk of breast cancer recurrence”.
- Cancer Biomarker Patent US 7901876 (B2)/WO2006037462 (A3)/EP1802971 “Methods of diagnosis and prognosis, including E1A-induced genes and Numb”. Released by USA Patent and Trademark Office
- Co-founder of the University spin-off “OncoMark” s.r.l.

Memberships

Italian Association for Cell Biology and Differentiation (ABCD)
Italian Federation of Life Sciences (FISV)
The Italian Cancer Society (SIC)

Publications (last 10 years)

1. Bertocchi A, Carloni S, Ravenda PS, Bertalot G, Spadoni I, Lo Cascio A, Gandini S, Lizier M, Braga D, Asnicar F, Segata N, Klaver C, Brescia P, Rossi E, Anselmo A, Guglietta S, Maroli A, Spaggiari P, Tarazona N, Cervantes A, Marsoni S, Lazzari L, Jodice MG, Luise C, Erreni M, **Pece S**, Di Fiore PP, Viale G, Spinelli A, Pozzi C, Penna G, Rescigno M. *Gut vascular barrier impairment leads to intestinal bacteria dissemination and colorectal cancer metastasis to liver*. Cancer Cell. 2021 Mar 30;S1535-6108(21)00162-8. doi: 10.1016/j.ccell.2021.03.004.
2. Bisi S, Marchesi S, Rizvi A, Carra D, Beznoussenko GV, Ferrara I, Deflorian G, Mironov A, Bertalot G, Pisati F, Oldani A, Cattaneo A, Saberamoli G, **Pece S**, Viale G, Bachi A, Tripodo C, Scita G, Disanza A. *IRSp53 controls plasma membrane shape and polarized transport at the nascent lumen in epithelial tubules*. Nat Commun. 2020 Jul 14;11(1):3516. doi: 10.1038/s41467-020-17091-x.
3. Napolitano G, Di Malta C, Esposito A, de Araujo MEG, **Pece S**, Bertalot G, Matarese M, Benedetti V, Zampelli A, Stasyk T, Siciliano D, Venuta A, Cesana M, Vilardo C, Nusco E, Monfregola J, Calcagni A, Di Fiore PP, Huber LA, Ballabio A. *A substrate-specific mTORC1*

- pathway underlies Birt-Hogg-Dubé syndrome*. Nature. 2020 Sep;585(7826):597-602. doi: 10.1038/s41586-020-2444-0.
4. Schiano Lomoriello I, Giangreco G, Iavarone C, Tordonato C, Caldieri G, Serio G, Confalonieri S, Freddi S, Bianchi F, Pirroni S, Bertalot G, Viale G, Disalvatore D, Tosoni D, Malabarba MG, Disanza A, Scita G, **Pece S**, Pilcher BK, Vecchi M, Sigismund S, Di Fiore PP. *A self-sustaining endocytic-based loop promotes breast cancer plasticity leading to aggressiveness and pro-metastatic behavior*. Nat Commun. 2020 Jun 15;11(1):3020. doi: 10.1038/s41467-020-16836-y.
 5. Marvaso G, Ciardo D, Corrao G, Gandini S, Fodor C, Zerini D, Rojas DP, Augugliaro M, Bonizzi G, **Pece S**, Cattani F, Mazzocco K, Mistretta FA, Musi G, Alessi S, Petralia G, Pravettoni G, De Cobelli O, Di Fiore PP, Viale G, Orecchia R, Jereczek-Fossa BA. *Radioablation +/- hormonotherapy for prostate cancer oligorecurrences (Radiosa trial): potential of imaging and biology (AIRC IG-22159)*. BMC Cancer. 2019 Sep 10;19(1):903. doi: 10.1186/s12885-019-6117-z.
 6. Confalonieri S, Colaluca IN, Basile A, **Pece S**, Di Fiore PP. *Exon 3 of the NUMB Gene Emerged in the Chordate Lineage Coopting the NUMB Protein to the Regulation of MDM2*. G3 (Bethesda). 2019 Oct 7;9(10):3359-3367. doi: 10.1534/g3.119.400494.
 7. **Pece S**, Disalvatore D, Tosoni D, Vecchi M, Confalonieri S, Bertalot G, Viale G, Colleoni M, Veronesi P, Galimberti V, Di Fiore PP. *Identification and clinical validation of a multigene assay that interrogates the biology of cancer stem cells and predicts metastasis in breast cancer: A retrospective consecutive study*. EBioMedicine. 2019 Apr;42:352-362. doi: 10.1016/j.ebiom.2019.02.036.
 8. Sicouri L, Pisati F, **Pece S**, Blasi F, Longobardi E. *Prepl (pKnox1) transcription factor contributes to pubertal mammary gland branching morphogenesis*. Int J Dev Biol. 2018;62(11-12):827-836. doi: 10.1387/ijdb.180278fb.
 9. Zobel M, Disanza A, Senic-Matuglia F, Franco M, Colaluca IN, Confalonieri S, Bisi S, Barbieri E, Caldieri G, Sigismund S, **Pece S**, Chavrier P, Di Fiore PP, Scita G. *A NUMB-EFA6B-ARF6 recycling route controls apically restricted cell protrusions and mesenchymal motility*. J Cell Biol. 2018 Sep 3;217(9):3161-3182. doi: 10.1083/jcb.201802023.
 10. Avanzato D, Pupo E, Ducano N, Isella C, Bertalot G, Luise C, **Pece S**, Bruna A, Rueda OM, Caldas C, Di Fiore PP, Sapino A, Lanzetti L. *High USP6NL Levels in Breast Cancer Sustain Chronic AKT Phosphorylation and GLUT1 Stability Fueling Aerobic Glycolysis*. Cancer Res. 2018 Jul 1;78(13):3432-3444. doi: 10.1158/0008-5472.CAN-17-3018.
 11. Corallino S, Malinverno C, Neumann B, Tischer C, Palamidessi A, Frittoli E, Panagiotakopoulou M, Disanza A, Malet-Engra G, Nastaly P, Galli C, Luise C, Bertalot G, **Pece S**, Di Fiore PP, Gauthier N, Ferrari A, Maiuri P, Scita G. *A RAB35-p85/PI3K axis controls oscillatory apical protrusions required for efficient chemotactic migration*. Nat Commun. 2018 Apr 16;9(1):1475. doi: 10.1038/s41467-018-03571-8. Erratum in: Nat Commun. 2018 May 22;9.
 12. Colaluca IN, Basile A, Freiburger L, D'Uva V, Disalvatore D, Vecchi M, Confalonieri S, Tosoni D, Cecatiello V, Malabarba MG, Yang CJ, Kainosho M, Sattler M, Mapelli M, **Pece S**, Di Fiore PP. *A Numb-Mdm2 fuzzy complex reveals an isoform-specific involvement of Numb in breast cancer*. J Cell Biol. 2018 Feb 5;217(2):745-762. doi: 10.1083/jcb.201709092.
 13. Gulluni F, Martini M, De Santis MC, Campa CC, Ghigo A, Margaria JP, Ciraolo E, Franco I, Ala U, Annaratone L, Disalvatore D, Bertalot G, Viale G, Noatynska A, Compagno M, Sigismund S, Montemurro F, Thelen M, Fan F, Meraldi P, Marchiò C, **Pece S**, Sapino A, Chiarle R, Di Fiore PP, Hirsch E. *Mitotic Spindle Assembly and Genomic Stability in Breast Cancer Require PI3K-C2 α Scaffolding Function*. Cancer Cell. 2017 Oct 9;32(4):444-459.e7. doi: 10.1016/j.ccell.2017.09.002.

14. Tosoni D, Pambianco S, Ekalle Soppo B, Zecchini S, Bertalot G, Pruneri G, Viale G, Di Fiore PP, **Pece S**. *Pre-clinical validation of a selective anti-cancer stem cell therapy for Numb-deficient human breast cancers*. *EMBO Mol Med*. 2017 May;9(5):655-671. doi: 10.15252/emmm.201606940.
15. Grasso S, Chapelle J, Salemme V, Aramu S, Russo I, Vitale N, Verdun di Cantogno L, Dallaglio K, Castellano I, Amici A, Centonze G, Sharma N, Lunardi S, Cabodi S, Cavallo F, Lamolinara A, Stramucci L, Moiso E, Provero P, Albin A, Sapino A, Staaf J, Di Fiore PP, Bertalot G, **Pece S**, Tosoni D, Confalonieri S, Iezzi M, Di Stefano P, Turco E, Defilippi P. *The scaffold protein p140Cap limits ERBB2-mediated breast cancer progression interfering with Rac GTPase-controlled circuitries*. *Nat Commun*. 2017 Mar 16;8:14797. doi: 10.1038/ncomms14797. Erratum in: *Nat Commun*. 2018 Mar 30;9:16203.
16. Calcagni A, Kors L, Verschuren E, De Cegli R, Zampelli N, Nusco E, Confalonieri S, Bertalot G, **Pece S**, Settembre C, Malouf GG, Leemans JC, de Heer E, Salvatore M, Peters DJ, Di Fiore PP, Ballabio A. *Modelling TFE renal cell carcinoma in mice reveals a critical role of WNT signaling*. *Elife*. 2016 Sep 26;5. pii: e17047. doi: 10.7554/eLife.17047.
17. Dama E, Tillhon M, Bertalot G, de Santis F, Troglio F, Pessina S, Passaro A, **Pece S**, de Marinis F, Dell'Orto P, Viale G, Spaggiari L, Di Fiore PP, Bianchi F, Barberis M, Vecchi M. *Sensitive and affordable diagnostic assay for the quantitative detection of anaplastic lymphoma kinase (ALK) alterations in patients with non-small cell lung cancer*. *Oncotarget*. 2016 Jun 14;7(24):37160-37176. doi: 10.18632/oncotarget.9471.
18. Sanchini V, Bonizzi G, Disalvatore D, Monturano M, **Pece S**, Viale G, Di Fiore PP, Boniolo G. *A Trust-Based Pact in Research Biobanks. From Theory to Practice*. *Bioethics*. 2016 May;30(4):260-71. doi: 10.1111/bioe.12184.
19. Tosoni D, Zecchini S, Coazzoli M, Colaluca I, Mazzarol G, Rubio A, Caccia M, Villa E, Zilian O, Di Fiore PP, **Pece S**. *The Numb/p53 circuitry couples replicative self-renewal and tumor suppression in mammary epithelial cells*. *J Cell Biol*. 2015 Nov 23;211(4):845-62. doi: 10.1083/jcb.201505037.
20. Chiaradonna F, Barozzi I, Miccolo C, Bucci G, Palorini R, Fornasari L, Botrugno OA, Pruneri G, Masullo M, Passafaro A, Galimberti VE, Fantin VR, Richon VM, **Pece S**, Viale G, Di Fiore PP, Draetta G, Pelicci PG, Minucci S, Chiocca S. *Redox-Mediated Suberoylanilide Hydroxamic Acid Sensitivity in Breast Cancer*. *Antioxid Redox Signal*. 2015 Jul 1;23(1):15-29. doi: 10.1089/ars.2014.6189.
21. Belloni E, Veronesi G, Rotta L, Volorio S, Sardella D, Bernard L, **Pece S**, Di Fiore PP, Fumagalli C, Barberis M, Spaggiari L, Pelicci PG, Riva L. *Whole exome sequencing identifies driver mutations in asymptomatic computed tomography-detected lung cancers with normal karyotype*. *Cancer Genet*. 2015 Apr;208(4):152-5. doi: 10.1016/j.cancergen.2015.02.004.
22. Puca F, Colamaio M, Federico A, Gemei M, Tosti N, Bastos AU, Del Vecchio L, **Pece S**, Battista S, Fusco A. *HMGAI silencing restores normal stem cell characteristics in colon cancer stem cells by increasing p53 levels*. *Oncotarget*. 2014 May 30;5(10):3234-45.
23. Rambaldi D, **Pece S**, Di Fiore PP. *flowFit: a Bioconductor package to estimate proliferation in cell-tracking dye studies*. *Bioinformatics*. 2014 Jul 15;30(14):2060-5. doi: 10.1093/bioinformatics/btu127.
24. Amson R, **Pece S**, Marine JC, Di Fiore PP, Telerman A. *TPT1/ TCTP-regulated pathways in phenotypic reprogramming*. *Trends Cell Biol*. 2013 Jan;23(1):37-46. doi: 10.1016/j.tcb.2012.10.002.
25. Tosoni D, Di Fiore PP, **Pece S**. *Functional purification of human and mouse mammary stem cells*. *Methods Mol Biol*. 2012;916:59-79. doi: 10.1007/978-1-61779-980-8_6.

26. Boniolo G, Di Fiore PP, **Pece S**. *Trusted consent and research biobanks: towards a 'new alliance' between researchers and donors*. *Bioethics*. 2012 Feb;26(2):93-100. doi: 10.1111/j.1467-8519.2010.01823.x.
27. Amson R, **Pece S**, Lespagnol A, Vyas R, Mazzarol G, Tosoni D, Colaluca I, Viale G, Rodrigues-Ferreira S, Wynendaele J, Chaloin O, Hoebeke J, Marine JC, Di Fiore PP, Telerman A. *Reciprocal repression between P53 and TCTP*. *Nat Med*. 2011 Dec 11;18(1):91-9. doi: 10.1038/nm.2546.
28. Mutti E, Magnaghi V, Veber D, Faroni A, **Pece S**, Di Fiore PP, Scalabrino G. *Cobalamin deficiency-induced changes of epidermal growth factor (EGF)-receptor expression and EGF levels in rat spinal cord*. *Brain Res*. 2011 Feb 28;1376:23-30. doi: 10.1016/j.brainres.2010.12.056.
29. Belloni E, Veronesi G, Micucci C, Javan S, Minardi SP, Venturini E, Maisonneuve P, Volorio S, Riboni M, Bellomi M, Scanagatta P, Taliento G, Pelosi G, **Pece S**, Spaggiari L, Pelicci PG. *Genomic characterization of asymptomatic CT-detected lung cancers*. *Oncogene*. 2011 Mar 3;30(9):1117-26. doi: 10.1038/onc.2010.478.
30. **Pece S**, Confalonieri S, Romano P, Di Fiore PP. *NUMB-ing down cancer by more than just a NOTCH*. *Biochim Biophys Acta*. 2011 Jan;1815(1):26-43. doi: 10.1016/j.bbcan.2010.10.001.
31. **Pece S**, Tosoni D, Confalonieri S, Mazzarol G, Vecchi M, Ronzoni S, Bernard L, Viale G, Pelicci PG, Di Fiore PP. *Biological and molecular heterogeneity of breast cancers correlates with their cancer stem cell content*. *Cell*. 2010 Jan 8;140(1):62-73. doi: 10.1016/j.cell.2009.12.007.