

Biographical sketch

- Name and Surname: **Luigi Fattore**
- Place and date of birth : Maddaloni (CE), 12 Giugno 1985.
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Education

- **February 2015:** PhD in Experimental Medicine on Molecular and Clinical Medicine Department, "Sapienza" University of Rome. Title of the thesis: "*ErbB3 receptor in melanoma: a key player in the development of resistance to therapy*".
- **August 2011:** Certificate of attendance of English language study at Callan School of London.
- **March 2011:** Second level degree in Medical Biotechnology on University of Naples Federico II, final grade 105 /110. Title of the thesis: "*The interaction between the transcriptional factors WT1 and ZNF224 modulates the expression of apoptotic genes in erythroleukemia K562 cells*".
- **March 2007:** First level degree in Biotechnology on the Second University of Studies of Naples (Caserta), final grade 102/110. Title of the thesis: "*Pathogenesis of prion diseases: current knowledge and future prospects*".

Research Experience

- **January 2015 at the present:** Post Doc fellow "FIRC Fondazione Italiana per la ricerca sul Cancro" at IRCCS "Fondazione G. Pascale", Naples. Research interest: new miRNAs involved in resistance to BRAF/ MEK inhibitors in melanoma. Supervisor: Prof. Paolo Antonio Ascierto, the Director in the unit of Melanoma-Cancer Immunotherapy and Innovative Therapy, has been involved in several experimental clinical trials involving BRAF mutated melanoma patients treated with kinase inhibitors.
- **May 2014 to November 2014:** PhD student training in the laboratories of Prof. C. Croce, Department of Molecular Virology, Immunology, and Medical Genetics at the Ohio State University in Columbus (Ohio, USA). Research interest: new miRNAs involved in resistance to BRAF/ MEK inhibitors in melanoma. Identification of mechanisms of resistance to BRAF/ MEK inhibitors in melanoma.
- **November 2011 to February November 2014:** PhD student of Experimental Medicine on Molecular and Clinical Medicine Department, "Sapienza" University of Rome, under the supervision of Prof. Rita Mancini with expertise in setting up of vitro bioassays and drug testing using also primary and 3D cultures of tumor cells. Research interest: Identification of mechanisms of resistance to BRAF/ MEK inhibitors in melanoma. Assessment of "*in vitro*" and "*in vivo*" activity of anti-ErbB3 receptor mAbs on primary lung cancer cells, also in combination with chemotherapy. Study of the role of monoclonal antibodies directed against ErbB3 receptor in inhibition of growth and migration of melanoma cells. Identification of the molecular mechanism involved in anti-ErbB3 mAbs-induced internalization and degradation of ErbB3 receptor.
- **September 2009 to March 2011:** Undergraduated student on University of Naples Federico II under the supervision of Prof Paola Costanzo. Research interest: Study the role of WT1/ ZNF224 interaction in the modulation of the expression of apoptotic genes in erythroleukemia cells.

Technical skills and competences.

- Human tumor xenografts in mouse models. Setting up of primary cultures from biological fluids.
- Adherent and in suspension different cell cultures; methods of stable and transient transfections, functional assays of activity of reporter genes; luciferease assays; apoptosis tests. Migration assays through porous membrane and colorimetric proliferation assays. Immunofluorescence assays to assess cell proliferation and use of specific markers for endocytic compartments
- Cell lysates, immunoprecipitation techniques of endogenous and overexpressed proteins, western blot. Bacterial cultures, cloning. Methods of RNA interference, chromatin immunoprecipitation, RT-PCR, Real Time PCR, electrophoretic techniques.
- Basis of bioinformatic tools to discover new miRNAs and their predicted target genes.
- Isolation and evaluation of miRNAs from cell cultures and formalin-fixed paraffin embedded (FFPE) samples.

Publications

- 1) Belleudi F, Marra E, Mazzetta F, **Fattore L**, Giovagnoli MR, Mancini R, Aurisicchio L, Torrissi MR, Ciliberto G. "*Monoclonal antibody-induced ErbB3 receptor internalization and degradation inhibits growth and migration of human melanoma cells*". Cell Cycle 2012 Apr 1; 11(7): 1455-67.
- 2) Montano G., Cesaro E., **Fattore L**, Vidovic K., Palladino C., Crescitelli R., Izzo P., Turco M.C., Costanzo P. "*Role of WT1-ZNF224 interaction in the expression of apoptosis-regulating*". Hum Mol Genetics 2013 Feb 7. [Epub ahead of print]
- 3) Ricci A, De Vitis C, Noto A, **Fattore L**, Mariotta S, Cherubini E, Roscilli G, Liguori G, Scognamiglio G, Rocco G, Botti G, Giarnieri E, Giovagnoli MR, De Toma G, Ciliberto G, Mancini R. "TrkB is responsible for EMT transition in malignant pleural effusions derived cultures from adenocarcinoma of the lung". Cell Cycle 2013 Jun 1; 12(11): 1696-703.
- 4) **Fattore L**, Marra E, Pisanu ME, Noto A, De Vitis C, Belleudi F, Aurisicchio L, Mancini R, Torrissi MR, Ascierto PA, Ciliberto G. "Activation of an early feedback survival loop involving phospho-ErbB3 is a general response of melanoma cells to RAF/MEK inhibition and is abrogated by anti-ErbB3 antibodies". J Transl Med. 2013 Jul 27;11:180.
- 5) Noto A, De Vitis C, Roscilli G, **Fattore L**, Malpicci D, Marra E, Luberto L, D'Andrilli A, Coluccia P, Giovagnoli MR, Normanno N, Ruco L, Aurisicchio L, Mancini R, Ciliberto G. Combination therapy with anti-ErbB3 monoclonal antibodies and EGFR TKIs potently inhibits non-small cell lung cancer. Oncotarget. 2013 Aug 4(8): 1253-65.
- 6) Costanzo P, Santini A, **Fattore L**, Novellino E. Ritiene A. Toxicity of aflatoxin B1 towards the vitamin D receptor (VDR). Food Chem Toxicol. 2015 Feb; 76: 77-9.
- 7) **Fattore L**, Malpicci D, Marra E, Belleudi F, Noto A, De Vitis C, Pisanu ME, Coluccia P, Camerlingo R, Roscilli G, Ribas A, Di Napoli A, Torrissi MR, Aurisicchio L, Ascierto PA, Mancini R, Ciliberto G. Combination of antibodies directed against different ErbB3 surface epitopes prevents the establishment of resistance to BRAF/MEK inhibitors in melanoma. 2015 Oncotarget in press.

Congresses and meetings

- *“Activation of an early feedback survival loop involving phospho-ErbB3 is a general response of melanoma cells to RAF/MEK inhibition and is abrogated by anti-ErbB3 antibodies”*.
Luigi Fattore, Emanuele Marra, Maria Elena Pisanu, Alessia Noto, Claudia De Vitis, Francesca Belleudi, Luigi Aurisicchio, Rita Mancini, Maria Rosaria Torrisi, Paolo Antonio Ascierto, Gennaro Ciliberto. 55th Annual Meeting of the Italian Cancer Society, Università degli Studi Magna Graecia, Catanzaro 23-26 September, 2013 pag. 93. *Oral Communication*.
- *“Activation of the ErbB3-AKT axis promotes melanoma cell survival and proliferation in response to RAF/MEK inhibition”*.
Luigi Fattore, Emanuele Marra, Maria Elena Pisanu, Alessia Noto, Claudia De Vitis, Francesca Belleudi, Luigi Aurisicchio, Rita Mancini, Maria Rosaria Torrisi, Paolo Antonio Ascierto, Gennaro Ciliberto.
Melanoma Bridge, Hotel Royal Continental, Napoli 5-8 December 2013. *Oral Communication*
- *“ErbB3 plays a key role in the early phase of establishment of resistance to BRAF and/or MEK inhibitors”*.
Luigi Fattore, Debora Malpicci, Emanuele Marra, Rosalba Camerlingo, Giuseppe Roscilli, Francesca Belleudi, Antoni Ribas, Rita Mancini, Maria Rosaria Torrisi, Luigi Aurisicchio, Paolo Antonio Ascierto, Gennaro Ciliberto. Melanoma Bridge, Hotel Royal Continental, Napoli 3-6 December 2014. Poster Presentation.
- *“ErbB3 receptor plays a fundamental role in the early and long time exposure to BRAF/MEK inhibitors in melanoma”*.
Luigi Fattore, Debora Malpicci, Emanuele Marra, Alessia Noto, Claudia De Vitis, Maria Elena Pisanu, Giuseppe Roscilli, Maria Rosaria Torrisi, Luigi Aurisicchio, Paolo Antonio Ascierto, Rita Mancini, Gennaro Ciliberto. EACR-AACR-SIC 2015 Special Conference, Firenze 20-23 Giugno 2015, Poster Presentation.