

3rd February 2022

Dear members of the search committee,

I am writing in reference to the Postdoctoral project “Piattaforma transfrontaliera per una efficiente gestione delle biobanche”, for which I would like to forward my candidacy. I have recently completed my PhD in Medical Sciences and Biotechnology under the supervision of Professor Mario Pirisi (Internal medicine laboratory, department of translational medicine, University of Eastern Piedmont, Italy).

Over the years, I have increasingly gained specialised competences in virology and hepatology. My doctoral work concerned the characterisation of the 17, β -estradiol antiviral activity in an hepatitis C virus cell culture system. In the first part I focused on the evaluation of the 17, β -estradiol-mediated activation of innate immunity in hepatocytes (the respective paper is currently under submission with first-name authorship). In the second part of the study I focused on the interplay between 17, β -estradiol and HCV infection under a pseudohypoxic condition. The main methods adopted included: viral culture systems (HCVcc, HCV replicon, HCVpp and HCVtcp), RT-qPCR, IHC/microscopy. I am fascinated by the interacting mechanisms that have brought both hosts and viruses to adapt evolutionarily. Which is what has driven the research I have been conducting in the field. In the last months of my doctoral studies, I have also started studying the effects of oestrogen on SARS-CoV-2 infection using the recombinant virus rVSV-eGFP-SARS-CoV-2-S.

During my PhD programme I have dealt with several side projects, and I have trained and supervised bachelor’s and master’s students during their internship and thesis periods. Additional side projects pertained to the research of liquid biopsy-based biomarkers, mainly implicated in liver diseases, and potentially related to HCC risk development. In these studies, I worked on the experimental set-up of single nucleotide polymorphisms (SNPs) analysis, and of serological marker quantification through ELISA. A further project focused on HCV infection and cognitive impairment. In this context, I worked on the in vitro evaluation of HCV infection effects on some central-nervous-system cell lines. From January 2019 to June 2021, I have actively participated in the organisation of a multicentric study in collaboration with “Università degli studi Milano - Bicocca”, “Ospedale San Gerardo” (Monza), and “ASST Grande Ospedale Metropolitano Niguarda” (Milan) named “Finding the seed of recurrence: the role of the liquid biopsy to detect circulating tumor cells as markers of advanced disease and prognosis in hepatocarcinoma”. I have worked on the experimental procedures of circulating tumor cell isolation and characterisation (FACS analysis). I have additionally organised the logistics of data and sampling collection, dealt with the overall laboratory database organisation as well as handled clinical samples. This project has improved my ability to deal with multiple simultaneous tasks as well as my problem-solving skills. Besides giving me the opportunity to refine my technical skills, this experience has taught me how to start a project from scratch collaborating with multiple research centres and how important it is to develop translational research.

My current goal is to apply my acquired experience in Postdoctoral research. I am especially interested in the idea to do so in an international laboratory, as I would love to work side by side with fellow researchers that share different backgrounds, which is always a good starting point for academic discussions in the optic of research innovation.

Based on my background and the potential for skills-sharing, I would consider myself to be a good addition to your team, therefore I would be extremely grateful should you decide to consider my candidacy.

Hoping to hear from you soon,
I send you my kindest regards,

Matteo N. Barbaglia



MATTEO N. BARBAGLIA
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Education

09/2012 - 10/2015	<p>Master's degree in medical biotechnology University of Eastern Piedmont (UPO)</p> <ul style="list-style-type: none"> Thesis title: "HCV and sex hormones: analysis of antiviral activity in an in vitro system"
09/2008 - 03/2012	<p>Bachelor's degree in biotechnology UPO</p> <ul style="list-style-type: none"> Thesis title: "Production and purification of recombinant proteins of osteopontin and stable cell clones expressing these proteins"
09/2003 - 06/2008	<p>Scientific high school Scientific High School "G. Galilei" - Borgomanero (NO)</p>
Attended courses	<p>EASL Basic School of Hepatology: Liver cell isolation and characterisation (16-18 January 2019, Duesseldorf, Germany)</p> <p>Abeschool (American Business English School): Scientific English Writing (2019, Novara, Italy)</p>



Work experience

- 11/2017 - 06/2021 ● **PhD in Medical Sciences and Biotechnology**
 Laboratory of Internal Medicine, Department of Translational Medicine (DiMET, UPO)
 - Main project: "Sex differences in hepatitis C virus infection: characterisation of 17,β-estradiol-modulated antiviral defences in an HCV cell culture system" (Paper under submission)
 - Side project: "Finding the seed of recurrence: the role of the liquid biopsy to detect circulating tumor cells as markers of advanced disease and prognosis in hepatocarcinoma"
- 03/2018 - 05/2018 ● **Cell culture laboratory assistant professor**
 UPO
- 11/2017 - 01/2018 ● **Fellowship**
 Laboratory of Internal Medicine, (DiMET, UPO)
 - Project title: "Role of Gas6/TAM receptors system in the pathogenesis of pulmonary arterial scleroderma hypertension"
- 10/2016 - 10/2017 ● **Internship**
 Laboratory of Internal Medicine, (DiMET, UPO)
- 03/2013 - 10/2015 ● **Internship**
 Laboratory of Internal Medicine, (DiMET, UPO)
- 03/2011 - 01/2012 ● **Internship**
 Laboratory of Immunology, Department of Health Sciences (DiSS, UPO)



Laboratory skills



- Viral culture
- Antiviral agents testing



- Cell culture
- Blood cells isolation
- Toxicity and proliferation assay








- RNA/DNA extraction
- Gene expression analysis
- RFLP-PCR
- Cloning



- ELISA
- FACS
- IHC and IFS
- Western Blot
- Protein purification




Computer skills

- GraphPad Prism 
- Benchling 
- Vector NTI 
- Microsoft Office 
- Database management 



Languages






 Italian: Native speaker

 English:

Listening	Reading	Writing	Speaking
B2	B2	B2	B1



Management skills

- Teamworking 
- Planning 
- Students' supervision 
- Attention to details 
- Problem-solving 



Hobbies



Hiking



Non-fiction
science books



Multiplayer
teamwork
videogames



Publications

- Magri A., **Barbaglia M.N.** *et al.* 17, β -estradiol inhibits hepatitis C virus mainly by interference with the release phase of its life cycle. *LIVER INTERNATIONAL*, 2016, 37, 669-677, doi: 10.1111/liv.13303.
- Carissimi F., **Barbaglia M.N.** *et al.* Finding the seed of recurrence: Hepatocellular carcinoma circulating tumor cells and their potential to drive the surgical treatment. *World J Gastrointest Surg.* 2021, 13(9), 967-978, 10.4240/wjgs.v13.i9.967.
- Salmi L., **Barbaglia M.N.** *et al.* Detrimental Impact of Interferon-Based Regimens for Chronic Hepatitis C on Vitamin D/parathyroid Hormone Homeostasis. *Open Rheumatol. J.* 2018, 12, doi:10.2174/187431290181201.
- Bellan M., Colletta C., **Barbaglia M.N.** *et al.* Severity of nonalcoholic fatty liver disease in type 2 diabetes mellitus: Relationship between nongenetic factors and PNPLA3/HSD17B13 polymorphisms. *Diabetes Metab. J.* 2019, 43, 700–710, doi:10.4093/dmj.2018.0201.
- Bellan M., Sainaghi P.P., Minh M.T., Minisini R., Molinari L., Baldrighi M., Salmi L., **Barbaglia M.N.** *et al.* Gas6 as a predictor of esophageal varices in patients affected by hepatitis C virus related-chronic liver disease. *Biomark. Med.* 2018, 12, doi:10.2217/bmm-2017-0171.
- Bellan M., Dimagli A., Piccinino C.; Giubertoni A., Ianniello A., Grimoldi F., Sguazzotti M., Nerviani A., Barini M., Carriero A., Smirne C., Burlone M.E., Rigamonti C., Minisini R., Salmi L., **Barbaglia M.N.** *et al.* Role of Gas6 and TAM Receptors in the Identification of Cardiopulmonary Involvement in Systemic Sclerosis and Scleroderma Spectrum Disorders. *Dis. Markers* 2020, 1–8, doi:10.1155/2020/2696173.
- Smirne C., Mulas V., **Barbaglia M.N.** *et al.* Periostin Circulating Levels and Genetic Variants in Patients with Non-Alcoholic Fatty Liver Disease. *Diagnostics* 2020, 10, 1003, doi:10.3390/diagnostics10121003.
- De Benedittis C., Bellan M., Crevola M., Boin E, **Barbaglia M.N.** *et al.* Interplay of PNPLA3 and HSD17B13 Variants in Modulating the Risk of Hepatocellular Carcinoma among Hepatitis C Patients. *Gastroenterol. Res. Pract.* 2020, 1–8, doi:10.1155/2020/4216451.
- Vaghi G., Gori B., Strigaro G., Burlone M., Minisini R., **Barbaglia M.N.** *et al.* Direct antivirals and cognitive impairment in hepatitis C: a clinical-neurophysiologic study. *J. Neurovirol* 2020, 26, 870–879, doi:10.1007/s13365-020-00904-6.

- Burlone M.E., Bellan M., **Barbaglia M.N.** *et al.* *HSD17B13* and other liver fat-modulating genes predict development of hepatocellular carcinoma among HCV-positive cirrhotics with and without viral clearance after DAA treatment. *Clinical Journal of Gastroenterology*, 2022, doi: 10.1007/s12328-021-01578-1.



Oral communications

- **Barbaglia M.N.** *et al.* Liver cancer, not etiology, steatosis or fibrosis, is the only independent predictor of elevated serum periostin concentration among Caucasian patients with liver disease. SIMI - annual meeting of the Italian Association of Internal Medicine (27-29 October 2017, Rome, Italy).



Abstract and poster presentations

- **Barbaglia M.N.** *et al.* Liver cancer, not etiology or steatosis or fibrosis, is the only independent predictor of elevated periostin concentration among Caucasian patients with liver disease. European Association for the study of the Liver (EASL) HCC summit 2018 (01-03 March 2018, Geneva, Switzerland).
- **Barbaglia M.N.** *et al.* Severity of non-alcoholic fatty liver disease in type 2 diabetes mellitus: relationship with genetic and non-genetic factors. Interdisciplinary Research Center of Autoimmune Diseases (IRCAD) (10 November 2018 Novara, Italy).
- **Barbaglia M.N.** *et al.* Dual effects of DMOG-mediated hypoxia on hcv life cycle depending on timing of exposure. 2nd National Congress of the Italian Society for Virology (SIV) (28-30 November 2018, Rome, Italy).
- **Barbaglia M.N.** *et al.* Timing of exposure to dimethylxalylglycine-mediated hypoxia determines opposite effects in an experimental model of hepatitis C virus infection. European Association for the study of the Liver (EASL) The international liver congress (10-14 April 2019, Vienna, Austria).
- Magri A., **Barbaglia M.N.** *et al.* 17, β -estradiol impairs HCV infection interfering with virus assembly/release. European Association for the study of the Liver (EASL) The international liver congress (13-17 April 2016, Barcelona, Spain)
- Guaschino G., Soddu D., Minh M.T., Bellan M., Minisini R., **Barbaglia M.N.** *et al.* Liver stiffness decreases in parallel to serum IP-10 concentration following treatment of hepatitis c with direct antiviral agents. SIMI - annual meeting of the Italian Association of Internal Medicine (27-29 October 2017, Rome, Italy).
- Salmi L., Camatta D., **Barbaglia M.N.** *et al.* Factors associated with occurrence/recurrence of hepatocellular carcinoma early after treatment of hepatitis C with direct antiviral agents (27-29 October 2017, Rome, Italy).
- Daffara F., Salmi L., **Barbaglia M.N.** *et al.* Clinical correlates of the genetic variability of the CD274 gene (programmed cell death-ligand 1) among patients with hepatocellular carcinoma. EASL HCC summit 2018 (01-03 March 2018, Geneva, Switzerland).
- Salmi L., Camatta D., **Barbaglia M.N.** *et al.* Factors associated with occurrence/recurrence of hepatocellular carcinoma early after treatment of hepatitis C with direct antiviral agents. EASL HCC summit 2018 (01-03 March 2018, Geneva, Switzerland).
- Daffara F., Salmi L., **Barbaglia M.N.** *et al.* Clinical correlates of the genetic variability of the CD274 gene (Programmed Cell Death-Ligand 1) among patients with hepatocellular carcinoma. EASL - International Liver Congress 2018 - 53rd annual meeting (11-15 April 2018, Paris, France).
- Vaghi G., **Barbaglia M.N.** *et al.* The neurocognitive impairment associated with hepatitis c virus regresses after viral clearance, likely due to reduced neuroinflammation. 2nd National Congress of the Italian Society for Virology (SIV) (28-30 November 2018, Rome, Italy).
- Fazio M., De Benedittis C., **Barbaglia M.N.** *et al.* Analysis of the HSD17B13:TA allelic variant as a protective factor towards hepatocellular carcinoma in patients with and without chronic hepatitis C. EASL - HCC summit 2019 (14-16 February 2019, Lisbon, Portugal).

- Vaghi G., **Barbaglia M.N.** *et al.* Objective evidence of the neurocognitive impairment associated with hepatitis C virus infection and of its regression after viral clearance with direct antivirals. EASL - The international liver congress (10-14 April 2019, Vienna, Austria).
- De Benedittis C., Fazio M., Burlone M.E., **Barbaglia M.N.** *et al.* Analysis of the HSD17B13:TA allelic variant as a putative protective factor towards hepatocellular carcinoma in patients with and without chronic hepatitis C. EASL - The international liver congress (10-14 April 2019, Vienna, Austria).
- De Benedittis C., Crevola M., Mallela V.R., **Barbaglia M.N.** *et al.* Interplay of PNPLA3 and HSD17B13 variants in modulating the risk of hepatocellular carcinoma among hepatitis C virus infected patients. EASL - Liver Cancer Summit (EASL, 6-8 February 2020, Prague, Czech Republic) and EASL - The Digital International Liver Congress (27-29 August 2020, London, UK).
- Matino E., Perazzi M., Gaia S., Caviglia G.P., Burlone M.E., **Barbaglia M.N.** *et al.* Variable expression of venous clot coordinator high mobility group box-1 in patients with hepatocellular carcinoma with or without portal vein thrombosis. EASL - Liver Cancer Summit (6-8 February 2020, Prague, Czech Republic).
- Famularo S., **Barbaglia M.N.** *et al.* Association between postoperative early recurrence of hepatocellular carcinoma and the expression pattern of circulating tumor cells in peripheral blood sample: a preliminary study. EASL - Digital Liver Cancer Summit (5-6 February 2021).

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Date

31/01/2021