

Giulia Biffi, PhD
Cold Spring Harbor Laboratory
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EDUCATION

- 06/14- **Post-doctoral fellowship**
Cold Spring Harbor Laboratory
Supervisor: Professor David A. Tuveson MD PhD
- 06/15-06/18 **Human Frontier Science Program Post-Doctoral Fellowship**
Cold Spring Harbor Laboratory
Supervisor: Professor David A. Tuveson MD PhD
- 01/15-06/15 **EMBO Post-Doctoral Fellowship**
Cold Spring Harbor Laboratory
Supervisor: Professor David A. Tuveson MD PhD
- 03/13 **Scientific visit**
Department of Cell Biology, University of Witten/Herdecke, Germany
Supervisor: Professor Hans Lipps
- 10/10-04/14 **PhD in Medical Science**
“Studies on G-quadruplex nucleic acid structures in human cells”
Cancer Research UK Cambridge Institute, University of Cambridge and St John’s College
Supervisor: Sir Shankar Balasubramanian FRS
- 10/08-07/10 **Master’s degree** in Experimental and Applied Biology - Major in Biomolecular Sciences and Genetics (110/110 *magna cum laude*)
“Role of DNA methylation in telomere transcription”
Department of Genetics, University of Pavia and Ghislieri College, Italy
Supervisor: Professor Elena Giulotto
- 07/09-09/09 Summer studentship
Department of Chemistry, University of Cambridge and St John’s College
Supervisor: Sir Shankar Balasubramanian FRS
- 10/07-07/10 Thesis Internship
Department of Genetics, University of Pavia, Italy
Supervisor: Professor Elena Giulotto
- 10/05-07/08 **Bachelor’s degree** in Biological Sciences - Major in Biomolecular Sciences (110/110 *magna cum laude*)
“Amplification of DHFR gene in human 293F cell line”
Department of Genetics, University of Pavia and Ghislieri College, Italy
Supervisor: Professor Elena Giulotto
- 2000-2005 Scientific diploma (100/100 *magna cum laude*)
High School “Lorenzo Mascheroni”, Bergamo, Italy

SCIENTIFIC SKILLS

Molecular biology	Phage display and antibody selection, identification of protein-RNA interactions (RIP and iCLIP), cloning, qPCR, Southern blotting, northern blotting, western blotting, shRNA and CRISPR/Cas9 screenings, library preparation for RNA-seq, single cell RNA-seq analysis
Cellular biology	2D cell and pancreatic organoid culture, IF microscopy and quantification, FISH, IHC, ISH, pancreatic stellate cell and tumor organoid isolation, co-cultures, flow cytometry
Biochemistry	Protein expression and purification, ELISA, EMSA
Chemical biology	Studies with small molecule ligands <i>in vitro</i> and in cells
Biophysics	UV and circular dichroism spectroscopy, fluorescence polarization
Bioinformatics	Softwares (BLAT, GraphPad Prism, Serial Cloner 2-5, SnapGene, ChemBioDraw, Volocity, Adobe Photoshop and Illustrator) and databases (NCBI, Ensemble)
Animal modeling	Mouse subcutaneous and orthotopic transplants, necropsy, <i>in vivo</i> therapeutic studies (i.p. and p.o. drug administration), cardiac puncture and plasma collection, ultrasounds.

TEACHING EXPERIENCE

Summer 2018	Mentor of a summer student (college student)
2016-present	Mentor of PhD student
December 2016	Teaching assistant for the CSHL Course “Organotypic and next Generation culture methods”
August 2018	Instructor for the CSHL Course “Organotypic culture methods”

WORK EXPERIENCE

2007-2010	Technical and e-support during conferences at Ghislieri College, Pavia, Italy
2008	Supervision for admission examinations at Ghislieri College, Pavia, Italy

AWARDS

10/17	Ghislieri Prize 2017
06/15	Human Frontier Science Program fellowship
06/15	Life Science Research Foundation fellowship
04/15	Jane Coffin Research Foundation fellowship
12/14	EMBO long-term fellowship
11/13	International Prize NorthSouth Pescarabruzzo Foundation 2013
07/13	Commencement speaker at the graduation ceremony at the University of Pavia, Italy
07/09-09/09	Two-month scholarship at St John’s College, Cambridge, UK
08/08	One-month scholarship at St John’s College, Cambridge, UK

LANGUAGES

Italian (mother tongue), English (highly fluent), Korean (basic)

PERSONAL INTERESTS

<i>Music</i>	15 years music school (piano)
<i>Sport</i>	Swimming (5 years swimming club), Football (Ghislieri College female team 2009-2010), Kickboxing, Yoga
<i>Others</i>	Travelling, Ethology, Opera, Korean language and culture

SELECTED PRESENTATIONS

Posters

- 04/13** Meeting on Telomeres & Telomerase, Cold Spring Harbor Laboratory
- 07/13** 4th International Meeting on Quadruplex Nucleic Acids, Nanyang Technological University, Singapore
- 11/16** EMBO Fellows' meeting, Koch institute, MIT, Boston
- 08/17** "2017 Mechanisms and Models of Cancer Meeting" Salk Institute, San Diego
- 10/17** Biology of Cancer: Microenvironment, Metastasis & Therapy, Cold Spring Harbor Laboratory
- 08/18** "Mechanisms and Models of Cancer", Cold Spring Harbor Laboratory, NY
- 09/18** AACR Pancreatic Cancer: Advances in Science and Clinical Care, Boston

Talks

- 10/18** CAM-Pac symposium, Verona, Italy

PUBLICATIONS

Biffi G., Tannahill D. and Balasubramanian S. An Intramolecular G-Quadruplex Structure Is Required for Binding of Telomeric Repeat-Containing RNA to the Telomeric Protein TRF2. *J Am Chem Soc* 134, 11974-6 (2012).

Di Antonio M., **Biffi G.**, Mariani A., Raiber E., Rodriguez R. and Balasubramanian S. Selective RNA Versus DNA G-quadruplex targeting Via In Situ Click Chemistry. *Angew Chem Int Edit* 51, 11073-8 (2012).

Biffi G., Tannahill D. McCafferty J. and Balasubramanian S. Quantitative Visualization of DNA G-quadruplex Structures in Human Cells. *Nature Chem* 5, 182-6 (2013). Publication highlighted in several international newspapers including BBC news (<http://www.bbc.co.uk/news/science-environment-21091066>).

Biffi G., Di Antonio M., Tannahill D. and Balasubramanian S. Visualization and Selective Chemical Targeting of RNA G-quadruplex Structures in the Cytoplasm of Human Cells. *Nature Chem* 6, 75-80 (2014).

Biffi G., Tannahill D., Miller J., Howat W. and Balasubramanian S. Elevated Levels of G-quadruplex Formation in Human Stomach and Liver Cancer Tissues. *PLOS ONE* 9:e102711 (2014).

Elmalem E., Biedermann F., Scherer M.R.J., Kumar A., **Biffi G.** and Huck, W.T.S. Mechanically Strong, Fluorescent Hydrogels from Zwitterionic, Fully π -Conjugated Polymers. *Chem Commun* 50, 8930-3 (2014).

Yangyuru P.M., Di Antonio M., Ghimire C., **Biffi G.**, Balasubramanian S. and Mao H. Dual Binding of an Antibody and a Small Molecule Increases the Stability of TERRA G-Quadruplex. *Angew Chem Int Edit* 127, 924-927 (2014).

Boj SF.*, Hwang C-I.*, Baker LA.*, Chio IIC.*, Engle DD.*, Corbo V.*, Jager M.*, Ponz-Sarvisé M., Tiriác H., Spector MS., Gracanin A., Oni T., Yu KH., van Boxtel R., Huch M., Rivera KD., Wilson JP., Feigin ME., Ohlund D., Handly-Santana A., Ardito-Abraham CM., Ludwig M., Elyada E., Alagesan B., **Biffi G.**, Yordanov GN., Delcuze B., Creighton B., Wright K., Park Y., Morsink FHM., Molenaar IQ., Rinkes IHB., Cuppen E., Hao Y., Jin Y., Nijman IJ., Iacobuzio-Donahue C., Leach SD., Pappin DJ., Hammell M., Klimstra DS., Basturk O., Hruban

RH., Offerhaus GJ., Vries RGJ., Clevers H. and Tuveson DA. Organoid Models of Human and Mouse Ductal Pancreatic Cancer. *Cell* 160:1–15 (2015).

Daniel Öhlund*, Abram Handly-Santana*, **Giulia Biffi***, Ela Elyada*, Ana S. Almeida, Mariano Ponz-Sarvisé, Vincenzo Corbo, Tobiloba E. Oni, Stephen A. Hearn, Eun Jung Lee, Iok In Christine Chio, Chang-Il Hwang, Hervé Tiriác, Lindsey A. Baker, Dannielle D. Engle, Mikala Egeblad, Douglas T. Fearon, James M. Crawford, Hans Clevers, Youngkyu Park, and David A. Tuveson. Distinct populations of inflammatory fibroblasts and myofibroblasts in pancreatic cancer. *J Exp Med* (2017).

Giulia Biffi, Tobiloba E. Oni, Benjamin Spielman, Yuan Hao, Ela Elyada, Youngkyu Park, Jonathan Preall, and David A. Tuveson. IL-1-induced JAK/STAT signaling is antagonized by TGF- β to shape CAF heterogeneity in pancreatic ductal adenocarcinoma. *Cancer Discovery* (in press).

REVIEWS & EDITORIALS

Biffi G., Öhlund D. and Tuveson DA. Building up the tension between the epithelial and stromal compartment in pancreatic ductal adenocarcinoma. *Cell Death Differ* (2016). (News and Commentary)

Giulia Biffi and David A. Tuveson. Double trouble for tumours. *Nature* (2017). (News & Views)