

CURRICULUM VITAE



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Il/La sottoscritto/a Jacopo Tricomi

consapevole delle responsabilità penali cui può andare incontro, in caso di dichiarazioni mendaci, ai sensi e per gli effetti di cui all'art. 76 del D.P.R. 445/2000 e consapevole che, ai sensi dell'art. 13, del Regolamento UE 2016/679 (GDPR), la presente dichiarazione sarà pubblicata sul sito web dell'amministrazione in apposita sezione di Amministrazione Trasparente, sotto la propria responsabilità

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ai sensi degli artt. 46 e 47 del DPR 445/2000

PERSONAL INFORMATION

Name

Jacopo Tricomi

Address

Phone

E-mail

Citizenship

Date and place of birth

WORK EXPERIENCE

From 1st January 2024 - ongoing

Research Fellowship

University of Florence, Florence, Italy

Fellowship in the project: "Glyconanomaterials as vaccine platforms for precision delivery of antigens to dendritic cells"

Title: "Glyconanoplatforms for targeting dendritic cell receptors"

- Scientific activity: design, synthesis and characterization of Carbohydrate-coated nanomaterials (gold nanoparticles (AuNPs) and nanocrystalline cellulose); synthesis of carbohydrate ligands and their anchoring on NM surface.

Supervisor: Prof. Marco Marradi

From 15th February 2023 to 15th November 2023

Research Fellowship

University of Florence, Florence, Italy

Fellowship in the project: "Verso l'eradicazione del cancro alle ovaie: cellule staminali cancerose e recettori β -adrenergici come nuovi bersagli terapeutici"

Title: "Synthesis of β -adrenergic receptors ligands"

- Scientific activity: design, synthesis and purification of a cohort of novel potential β -AR ligands, with a focus on β 3-AR, exploring the ligand-space around an aryloxypropanolamine scaffold.

Supervisor: Prof. Barbara Richichi

From 1st November 2019 to 31st January 2023

PhD in Chemical Science (CHIM 06)

Department of Chemistry 'Ugo Schiff', University of Florence, Sesto Fiorentino, Italy.

Title: "A new generation of β 3-adrenergic receptor (β 3-ARs) ligands: rational design, synthesis and druggability."

• Acquired scientific skills: design, synthesis and purification of a cohort of novel potential β -AR ligands, with a focus on β 3-AR, exploring the ligand-space around an aryloxypropanolamine scaffold. Pharmacological evaluation of the β -AR ligands using Bioluminescence Resonance Energy Transfer (BRET) assays.

Side project:

- Glycans Meet Sphingolipids: synthesis of sphingosine kinase inhibitors based on the structure of an already validated inhibitor exploiting the use of monosaccharide units as polar headgroup.
- Development of glycosyltransferase inhibitor for the custom modification of cell surface glycosylation through an approach based on inverse electron demand hetero Diels-Alder reaction.
- Preparation of graphene oxide functionalized with different monosaccharide units via mechanochemistry reaction using ball mill; evaluation of the glyco-GOs in the disruption of *Pseudomonas aeruginosa* biofilms.

From 14th July to 17th October 2022

International Experience

Institut de recherche en immunologie et en cancérologie (IRIC), Université de Montréal.

Research stage in molecular pharmacology at "l'unité de recherche en pharmacologie moléculaire"

- Scientific activity: pharmacological characterization of three validated β -AR ligands to evaluate their pharmacology profile against different biological pathways using Bioluminescence Resonance Energy Transfer (BRET) assays. Pharmacological characterization of novel potential β -AR ligands, developed and synthesized as part of my Ph.D. project at department of

chemistry "Ugo Schiff", University of Florence.

Supervisor: Prof. Michel Bouvier

From 1st February to 31st October
2019

Research Fellowship

INSTM - Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali, Florence, Italy.

Fellowship in the project: Glyco-G LAB 4.0 "Nanoadditivo multiproprietà ad attività UV assorbente e preservante", POR CREO 2014-2020 Regione Toscana.

Title: "Synthesis of saccharidic derivatives and functionalization of graphene platform", performed at Dipartimento di Chimica 'Ugo Schiff' of University of Florence.

- Scientific activity: mechanochemical reactions via ball milling strategy for the glycans functionalization of carbon-based nanomaterials. Elementary analysis and ICP-MS, spectrophotometric analysis.

Supervisor: Prof. Barbara Richichi

a.a. 2017/18

Didactic support activity for students of bachelor's degree in Chemical Science at the University of Florence.

EDUCATION AND TRAINING

December 2018

Master's Degree in Chemical Science (LM-54, Synthesis, properties and reactivity of organic compounds))

Department of Chemistry 'Ugo Schiff', University of Florence, Sesto Fiorentino, Italy.

Experimental thesis: "Synthesis of divalent α -O-Mannosides for the immunomodulation in rheumatoid arthritis"

110/110 cum laude

Acquired scientific skills: synthesis and characterisation of divalent α -O-Mannosides, orthogonal protecting strategy, stereoselective reactions of glycosidation. NMR spectroscopy, LC-MS spectroscopy.

Supervisor: Prof. Barbara Richichi

June 2016

Bachelor's Degree in Chemistry (L-27, Chemical Science)

Department of Chemistry 'Ugo Schiff', University of Florence, Sesto Fiorentino, Italy.

Experimental thesis: "Synthesis, characterisation and biological effects of a novel Oxaliplatin iodido-analogue as potential antineoplastic agent".

105/110

Acquired scientific skills: synthesis and characterisation of antineoplastic agents platinum-based, use of organo-metallic catalysts.

Supervisor: Prof. Luigi Messori

PUBLICATIONS

Tricomi J., Landini L., Nieddu V., Cavallaro U., Baker J., Papakyriakou A., Richichi B.
Rational design, synthesis and pharmacological evaluation of a cohort of beta-adrenergic receptors ligands enables assessment of structure-activity relationships.
Eur. J. Med. Chem., 2023, 246, 114961.

Tricomi J., Cacaci M., Biagiotti G., Caselli L., Niccoli L., Torelli R., Gabbani A., Di Vito M., Pineider F., Severi M., Sanguinetti M., Menna E., Lelli M., Berti D., Cicchi S., Bugli F., Richichi B.
Ball milled glyco-graphene oxide conjugates markedly disrupted *Pseudomonas aeruginosa* biofilms.
Nanoscale, 2022, 14, 10190-10199.

Martin K. C. Tricomi J., Corzana F., García-García A., Ceballos-Laita L., Hicks T., Monaco S., Angulo J., Hurtado-Guerrero R., Richichi B., Sackstein R.
Fucosyltransferase-specific inhibition via next generation of fucose mimetics.
Chem. Commun., 2021, 57, 1145-1148.

Papakyriakou A., Cencetti F., Puliti E., Morelli L., Tricomi J., Bruni P., Compostella F., Richichi B.
Glycans Meet Sphingolipids: Structure-Based Design of Glycan Containing Analogues of a Sphingosine Kinase Inhibitor.
ACS Med. Chem. Lett., 2020, 11, 5, 913–920.

Marradi M., Tricomi J., Matassini C., Richichi B.,
Comprehensive Glycoscience 2nd edition, edited by Joe Barchi: Carbohydrate Functionalized Quantum Dots in Sensing, Imaging and Therapy Applications.
Reference Module in Chemistry, Molecular Sciences and Chemical Engineering, Elsevier, 2020, ISBN 9780124095472.

Cirri D, Pillozzi S, Gabbiani C, Tricomi J, Bartoli G, Stefanini M, Michelucci E, Arcangeli A, Messori L, Marzo T.
Pt12(DACH), the iodido analogue of oxaliplatin as a candidate for colorectal cancer treatment: chemical and biological features.
Dalton Trans. 2017, 46, 3311-3317.

Tricomi J., Richichi B., Holmdahl R. et al.
A mannose containing glycoconjugate drives the T cells into a peripheral Treg phenotype.
In preparation.

CONFERENCES

Conferences with oral contribution

"Exploring the binding ligand space of β -adrenergic receptors (β -ARs):how to do it and why it is important" (Tricomi J., Papakyriakou A., Cavallaro U., Baker J., Richichi B.). XLVI "Attilio Corbella" International Summer School on Organic Synthesis (ISOS 2022), Gargano (BS), 12-16/06/2022. Oral communication O-17.

"Drug-protein interactions: "from first to last" workflow in three different cases of studies" (Tricomi J., Richichi B.). PiCSU 2022 "Ph.D. in Chemical Sciences at UniFi", Sesto Fiorentino (FI), 19/01 - 21/01/2022. Oral communication OC-47.

"A glucose bearing analog of a sphingosine kinase inhibitor modulates the expression of fibrosis markers in skeletal muscle cells" (Tricomi J., Papakyriakou A., Cencetti F., Puliti E., Morelli L., Bruni P., Compostella F., Richichi B.). Advances School on Carbohydrate Chemistry (XVII CSCC 2021), Pontignano (SI), 04/07 - 07/07/2021. Oral communication OC-2.

Conferences with poster contribution

"Deciphering the structure-activity relationships for the β -adrenergic receptors (β -ARs)" (Tricomi J., Papakyriakou A., Cavallaro U., Baker J., Richichi B.). XLI Convegno Nazionale della Divisione di Chimica Organica della Società Chimica Italiana (CDCO 2023), Roma 10-14/10/2023. Poster communication PC-121

"Ball Milled Glyco-graphene oxide conjugates as efficient *Pseudomonas aeruginosa* biofilm dispersal agents" (Tricomi J., Cacaci M., Biagiotti G., Caselli L., Niccoli L., Torelli R., Gabbani A., Di Vito M., Pineider F., Severi M., Sanguinetti M., Menna E., Lelli M., Berti D., Cicchi S., Bugli F., Richichi B.). Innogly Annual Meeting 2022, COST Action CA18103, Lugano, 4-6/05/2022. Poster communication.

"Working in the puzzling world of G-protein Coupled Receptors (GPCRs): the case of β -Adrenergic Receptors (β -ARs)" (Tricomi J., Papakyriakou A., Cavallaro U., Baker J., Richichi B.). Merck Young Chemists' Symposium 2021 (XX MYCS), Rimini (RN), 22/11 - 24/11/2021. Poster presentation PO-03.

"Next generation of fucose mimetics provides fucosyltransferase-specific inhibition" (Tricomi J., Martin K.C., Corzana F., Garcia-Garcia A., Ceballos-Laita L., Hicks T., Monaco S., Angulo J., Hurtado-Guerrero R., Sackstein R., Richichi B.). XLV "A. Corbella" International Summer School on Organic Synthesis, 14/06 - 17/06/2021. Poster P-37.

"A smart and multitasking nanofiller in paint and textile industries: from basic research to applied science." (Tricomi J., Toniolo G., Richichi B., Cicchi S., Borio A., Biagiotti G.). Chemistry meets Industry and Society CIS2019, Salerno 28/08 - 30/08/2019. Poster WS8PO18.

Conferences

"GLYCOG Lab 4.0, the sweet nanofiller: a tangible case of transfer of technology (TOT)." (G. Toniolo, J. Tricomi, B. Richichi, S. Cicchi, A. Borio, and G. Biagiotti). XXXIX Convegno Nazionale della divisione di Chimica Organica della Società Chimica Italiana CDCO 2019, Torino, 8/09 - 12/09/2019. Poster PC-42

"Glycomimetics in the discovery of Fucosyltransferase-Specific Inhibition" (Richichi B., Martin K.C., Tricomi J., Corzana F., Garcia-Garcia A., Ceballos-Laita A., Hicks T., Monaco S., Angulo J., Hurtado-Guerrero R., Sackstein R.). Eurocarb 2021, Paris, 09-13/07/2021. Oral communication.

"Mincle regulates T-cell responses in arthritis via ROS/MAPK pathway" (Aoun M., Cai X., Xu B., Sabatier P., Beusch C.M., He Y., Tricomi J., Richichi B., Lahore G.F., Backdahl L., Zubarev R.A., Holmdahl R.) INNOGLY-ECIWG3-2021: Young Glyco-Scientists on stage, 27/09/2021. Oral communication OL7.

Training School "Experimental models in Adhesion GPCR Research", COST Action 18240 ADHEsion GPCR Network: Research and Implementation Set the path for future Exploration, 05/10 - 06/10/2020

GRANT AND AWARDS

Stock Exchange winner for participation (with poster communication) at CIS2019 congress, assigned by the Division of Organic Chemistry of the Italian Chemical Society (SCI).

PERSONAL SKILLS

Mother tongue: Italian

Other Languages: English (C1 level)

Organizational and Management skills:

Since May 2018: support in the management of daily laboratory and research group activities.

Tutoring activities:

- 03/2021 – 07/2021 - Aresta G., Corso di Laurea in Biotecnologie (L-02) (Synthesis and functionalization of a hybrid nanomaterial for biomedical applications)
- 01/2020 – 02/2021 - Vaggelli G., Corso di Laurea in Chimica e Tecnologie Farmaceutiche (LM-13) (Verso la sintesi dell'unità ripetitiva dell'O-antigene del ceppo ATCC 17961 di *Acinetobacter baumannii*)
- 11/2019 – 04/2020 - Grimaldi N., Corso di Laurea in Biotecnologie (L-02) (Synthesis and biological activity of glycoconjugated Sphingosine Kinase 1 inhibitors)
- 02/2019 – 09/2019 Barbagli F., Corso di Laurea in Biotecnologie (L-02) (Development of a carbohydrate containing nanostructured multivalent system associated to a combined antibacterial activity)

Professional Skills:

Stereoselective glycosidation reactions, use of orthogonal protective groups specific for carbohydrates, synthesis of multivalent systems, conjugation reactions between glycosides and multivalent systems.

Synthesis and characterization of small organic molecules with biological activity (antitumor). Diels-Alder cycloaddition reactions with inverse electronic application. Azide-alkyne click reactions.

Mechanical-chemical reactions via ball milling for the functionalization of graphene platforms using glycans, elementary analysis and ICP-MS, spectrophotometric analysis.

28/12/2023

Firma

Firma autografa sostituita a mezzo stampa, ai sensi dell'art. 3, comma 2, del D.Lgs.n. 39/1993.

L'originale della presente dichiarazione è conservato presso il Dipartimento di Chimica "Ugo Schiff".