UNIVERSITÀ DEGLI STUDI FIRENZE
Dipartimento di Scienze Biomediche, Sperimentali e Cliniche "Mario Serio"
Eccellenza 2023-2027

HR EXCELLENCE IN RESEARCH

CALL OF INTEREST

IN

ONE ADDITIONAL Ph.D. POSITION in Biomedical Sciences Università degli Studi di Firenze

(Article 16, paragraph 2 of the University of Florence Regulations relating to doctorates)

Topic:

"Biomedical research in oncology"

Curricula

SINGLE CELL MULTI-OMICS TECHNOLOGIES IN BIOMEDICAL SCIENCES

Application deadline:

23rd January 2026 at 23:59 pm (Italian Time)

ACADEMIC YEAR 2025/2026

The University of Florence – Dipartimento di Scienze Biomediche Sperimentali e Cliniche "Mario Serio" are inviting applications for one additional PhD position in Biomedical Sciences - University of Florence – Topic: "Biomedical research in oncology".

Art. 1 - PhD PROGRAMME

The candidate will be enrolled in the XLI cycle of the Ph.D. Programme in **"Biomedical Sciences"**
The University of Florence will award a Ph.D. Degree at the end of the three-year Programme after successfully completing all Ph.D. requirements, including the successful defense of the Thesis as provided by the **University Regulations on Doctoral Programs** available on the University website at the page **PhD Programmes**

Art. 2 - Ph.D. RESEARCH TOPIC - PROJECT OBJECTIVES AND DESCRIPTION

The Ph.D. research activities will focus on: "Biomedical research in oncology". The topic is coherent with the research lines included in the Ph.D. Programme in Biomedical Sciences – Curricula "SINGLE CELL MULTI-OMICS TECHNOLOGIES IN BIOMEDICAL SCIENCES".

Short Description of the project and main objectives:

DLK1 role in the Tumour-Microenvironment Crosstalk in Adrenocortical Carcinoma

Adrenocortical carcinoma (ACC) is a rare and aggressive endocrine malignancy with limited therapeutic options and poor prognoses in advanced stages. Cell surface Delta-like non-canonical Notch ligand 1 (DLK1) has emerged as a critical modulator in various cancers, but its role in ACC and cancer cell-stroma interactions remains poorly understood. Understanding DLK1's function could provide new therapeutic avenues and improve outcomes for ACC patients. A novel anti-cancer approach is represented by the dynamic interactions occurring between tumour cells the surrounding tumour microenvironment (TME). The TME comprises a diverse array of cells, including adipose cells (adipose stem cells-ASC- and mature adipocytes). ASCs can reprogram cancer stem cells and we showed bi-directional reprogramming between ASC and ACC cells influencing tumour growth, invasion, and metastasis. DLK1 is overexpressed in ACC and is a potent inhibitor of adipogenesis. Preliminary data from our group shows that ACC-derived DLK1 blocks ASC differentiation. Interestingly, undifferentiated ASCs have an immunosuppressive phenotype, suggesting a potential role in ACC immune escape. The aim of the project in Florence is to characterize the role of DLK1 in mediating bidirectional communication between tumour cells and the surrounding adipose component.

Adipose TME and infiltrate composition will be analysed by immunohistochemistry and spatial analysis in aggressive and indolent ACCs. We will analyse how DLK1 influences processes such as cell metabolism, differentiation, secretion and proliferation as well as modulation of the immuno-infiltrate by analysing the correlation between DLK1 expression, adipose tissue composition and infiltration in ACC patients' biopsies and in coculturing models of ACC cell. The functional crosstalk between the two components will be investigated in the presence of a novel human anti-DLK1 antibody treatment in advanced coculturing conditions.

This project will demonstrate the relevance of TME adipose-ACC cells in tumour reprogramming and

elucidate the role of DLK1 in mediating adipose-ACC cross talk and reciprocal modulation of functions. DLK1 will be demonstrated to represent a druggable target common to ACC and TME.

This research is a part of the international joint Nefkens Adrenal Cancer Foundation (NAC) funded project-TRIDENT with the Queen Mary University of London and the University of Parma.

Research Focus

The successful candidate will engage in cutting-edge research covering various aspects of biomedical sciences and biotechnology, including but not limited to:

- Molecular and cellular biology of solid tumours
- Stem cell analysis in cancer
- 2D and 2D complex in vitro cell and organoid cultures
- Spatial and Liquid biopsy processing and analysis
- Cell engineering
- Bioinformatics and data analysis

PhD Tutor

Prof. Michaela Luconi (MSc in Biology, PhD in Endocrinology and Metabolism) has expertise in cell biology, endocrinology and cancer. As Full Professor she directs the UNIFI Laboratory LAB-AD2 "Biology of the adipose organ & of the adrenal tumours" focused on translational and clinical research in endocrine cancers and metabolic pathologies.

www.sbsc.unifi.it/vp-232-gruppo-luconi.html

Art. 3 - JOB LOCATIONS

University of Florence
Dipartimento di Scienze Biomediche Sperimentali e Cliniche "Mario Serio"
Viale Pieraccini, 6 – 50134 Firenze (FI) – Italy
https://maps.app.goo.gl/co5319yg2vrvJpJD6

Stay abroad

Stay abroad at a university or research institution lasting at least 6 months, up to a maximum of 12 months

Art. 4 - PROFILE OF THE PHD CANDIDATE

- Master degree (MSc) or equivalent in Biology or Medical Biotechnology or Biomedical Sciences, or a related field
- Languages: English B2 (both written and spoken)

It would be a plus Knowledge/experience in the field of "Biomedical research in oncology" (Experience with

cell cultures, particularly human and stem cells, cellular differentiation, molecular and cell biology analysis, gene editing; published research articles and presentations at research conferences; participation in competitive research projects; international research experience

Art. 5 - DURATION OF THE DOCTORAL PROGRAMME, RESEARCH CONTRACT AND SALARY AND BENEFITS

The starting date of the Ph.D. Programme is provided for March 1st, 2026, the Programme will end on February 28th, 2029.
The position is funded according to the University of Florence regulations by Nefkens Adrenal Cancer Foundation (NAC) Grant to Prof. Michaela Luconi

The position includes a competitive stipend and coverage for PhD tuition fees and research expenditure.

- Gross monthly salary: 1.353,58€ increased by 50% for any authorized periods of stay abroad for research activities related to the thesis project, at least six months up to a maximum of 12 months.
- Opportunity of fully covered international research mobility at the University of London and Parma
- Access to state-of-the-art research facilities and resources at the University of Florence.
- Opportunities for collaboration with industry partners and other academic institutions.
- Participation in workshops, conferences, and other scientific events to enhance research skills.

Art. 6 - WHO CAN APPLY

- Italian and foreign citizens holder of *laurea Specialistica/Magistrale, laurea Vecchio Ordinamento* conferred by an Italian University by the 30st of November, 2025 may apply.
- Italian and foreign citizens holder of *Master Degree* conferred by a foreign University by the 30th of November, 2025 may apply for the selection, enclosing the official transcripts of the academic degree, accompanied by an Italian or English translation, also made by the applicant's and under their own responsibility.

Applicants holder of Degrees (EQF Level 7 or II cycle Degree) conferred by a foreign University are conditionally admitted to the selection and will be excluded from it, if the academic title does not comply with the requirements for access to the Ph.D. level, as stated in this announcement. The foreign degree must be equivalent in length, level and subject to the required Italian title. The documentation relating to the foreign degree duly translated and legalized and with a declaration of value, issued by the competent Italian Consulate/Embassy in the Country where the qualification was obtained must be submitted to the appropriate offices, on or before the enrolment deadline. Alternatively, the candidate can submit the **Statements of comparability and verification of the foreign university degree** issued by ENIC_NARIC in Italy (CIMEA). The statement must contain all the necessary information to allow a proper evaluation of the title. If the foreign title was obtained in an EU country the *Diploma Supplement* will suffice.

Art. 7 - HOW TO APPLY

Applicants are required to submit the following documents at the PI's email michaela.luconi@unifi.it and in cc direttore@sbsc.unifi.it with the subject line "PhD Application_[Your Name]"

until 23rd January 2026 at 23:59 pm (Italian Time)

Documents required for the selection:

- copy of an Identity Document;
- CV, publications, other qualifications (please specify a valid email address for all communications)
- For candidates with degrees awarded in Italy: (bachelor's and master's degree or combined-cycle degree), a **self-certificate** containing a list of exams taken and the corresponding grade, the title of the thesis and grade, using the dedicated form **here**
- For candidates with degrees awarded abroad: (Bachelor's and Master Degrees or combined cycle Degree) with a list of all exams taken, number of credits, and their marks, title of the thesis and graduation mark
- A presentation with motivations for pursuing this position and career aspirations

Art. 8 - SELECTION PROCEDURE

Candidates will be selected on the basis of their qualifications, CV, as well by means of an interview (in English) for the assessment of their aptitude to carry out research as well as the assessment of their knowledge on the specific field of the research project to which the position.

The selection is carried out by an International Selection Committee, guaranteeing an adequate gender representation.

All relevant information and name of successful candidate will be published on the Department website

Art. 9 - INTERVIEW

The interview will be held in English Language remotely by Videocall **on 28th January 2026 at 9:30 am** (Italian Time). The Board will send to the selected candidates the link to participate in the interviews to the email address indicated in their application.

The Interview is aimed at evaluating the candidate's scientific background, knowledge, and skills in relation to the research topic of the Call.

Candidates must ensure to have a webcam at their disposal in order to allow the Admission Board to identify and have full view of the candidate during the interview.

The candidates are required to identify themselves before the interview by showing a valid identification document.

Failure to show up, failure to connect, unavailability of the candidate on the day or time set, or failure to provide a valid identification document, are grounds for exclusion from the selection procedure.

Where technical problems of connection arise during the videoconference interview, if the problem concerns one or more Board members, the interview shall be postponed by default to another date, if the problem concerns the candidate, the Board may, on grounds of good reason, postpone to another date, respecting the principles of non-discrimination and equal treatment between candidates.

Art. 10 - ENROLMENT

The successful candidate will be contacted by the Ph.D. Office of the University of Florence for the enrolment procedure.
Pursuant to art. 1, paragraphs 252 and 262 of law n. 232/2016, PhD students, in addition to the stamp duty of € 16,00 (required for the enrolment application), doctoral students are required to pay the regional tax for the right to university education (pursuant to art. 18, paragraph 8, of Legislative Decree no. 68/2012) the amount of which, for the academic year 2025/2026, is set at € 140.00.

Art. 11 - ATTENDANCE AND OBLIGATIONS OF PH.D. STUDENTS

1. Those enrolled in doctoral programs must attend the programs full time and perform study and research activities on a continuous basis. In particular, each Ph.D. student is required to undertake a stay abroad, the duration is at least six months, and to acquire, over the course of the three-year period, at least 6 credits by attending customized in-depth courses related to so-called "complementary skills".
2. The Academic Board may authorize the performance of paid activities that enable the doctoral student to acquire skills pertaining to their doctoral field, after assessing the compatibility of such activities with the doctoral program's training, teaching and research activities.
3. The annual income, if any, from paid work must in any case not exceed the annual amount of the doctoral scholarship.
4. In the case of justified impediments that do not allow effective attendance (illness, maternity and childbirth or other serious and documented reasons), the doctoral student may request suspension of program attendance, resulting in the interruption of the grant and extension of the training period. The suspension will be decided by the Academic Board. 6. For any further aspects related to the conduct of the doctoral program, please refer to the relevant university regulations.

Art. 12 - INTELLECTUAL PROPERTY ON RESEARCH RESULTS AND PUBLICATIONS

Intellectual and industrial property rights to any findings of the Ph.D. student are governed in accordance with current legislation (Copyright Law - Legislative Decree 633/1941 - and Industrial Property Code - Legislative Decree 30/2005), to the **Regulations for the management of industrial and intellectual property rights with reference to research activities carried out by university personnel** and according to what is established in individual agreements with universities, companies or entities involved. Ph.D. Students are required to sign appropriate confidentiality undertakings in relation to information, data and documents of a confidential nature of which they may become aware in the course of their work at and/or on behalf of the University.
The Ph.D. Student is, in any case, guaranteed the opportunity to carry out the normal publication activities envisaged by the programme, which must be scheduled in a manner compatible with the protection of any results.

Art. 13 - PROCESSING OF PERSONAL DATA

Personal data pertaining to this procedure are collected and processed for the University's institutional purposes in accordance with Articles 14 and 15 of EU Regulation 2016/679 - General Data Protection

Regulation (GDPR).
For more details follow the University of Florence webpage **Data Protection**

Art. 14 - PUBLICITY

The Call is published - in its entirety, on the Official Register of the University of Florence and on the Department website and on the European website Euraxess.

For all purposes pertaining to this call, the Unit in charge is Dipartimento di Scienze Biomediche Sperimentali e Cliniche "Mario Serio", Viale Morgagni 50, 50134 Firenze
Information and clarifications on application submission can be addressed to e-mail michaela.luconi@unifi.it and in cc direttore@sbsc.unifi.it
The procedure manager is Dr Barbara Napolitano

Art. 15 - FINAL PROVISIONS

Competition documents are public, to which access is permitted in the manner established by Law No. 241 of August 7, 1990.
For anything not expressly provided for in this announcement, please refer to **University Regulations on Doctoral Programs** available at the page **PhD Programmes** and to the statutory, regulatory and ministerial provisions cited in the decree announcing the Call for Applications.
The University reserves the right to exclude at any time candidates who participate in the exams provided for in this call, for failure to comply with the provisions given therein or the deadlines specified therein, or for failure to meet the requirements.

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