

**Post-doc position in the framework of the Bando a Cascata Ecosistema dell'Innovazione "THE - TUSCANY HEALTH ECOSYSTEM" ECS0000017, NEXTGENERATIONEU - SPOKE 4, at the Dipartimento di Biochimica e Farmacologia Molecolare Istituto di Ricerche Farmacologiche Mario Negri IRCCS, Via Mario Negri 2 - 20156 Milano, Italy**

**Title of the project: "Nanotechnologies for diagnosis and therapy" (BioSilicaThera)**

A post-doc position for 2 years, starting on November 1<sup>st</sup> is open at the Istituto di Ricerche Farmacologiche Mario Negri in Milano in the group of Prof. Luisa De Cola in the laboratories Materials for Health. The units is developing several nanomaterials to be used as carriers and delivery for drugs, hydrogels for tissue regeneration or multiple release of large molecules and targeting for a precise therapy.

**Requirements:**

- PhD in Chemistry, Chemical Engineer, Material Science, Pharmaceutical Chemistry or Biotechnology or any biomedical disciplines.
- The candidate must be fluent in written and spoken English.
- Excellent ability to organize the work and do research in team.
- Experience in preparing and characterize porous nanomaterials
- Experience with materials related techniques (SAXS, N2 adsorption, rheology)
- Experience on encapsulation of oligonucleotide entrapment in nanocarriers

**Research activities to be performed:**

The project deals with the development of hybrid nanomaterials consisting of silica based materials containing oligonucleotides into the structure. In particular aptamers developed by other groups will be employed as therapeutic unit and the evaluation of their activity established *in vitro* and *in vivo*. The research project is very interdisciplinary and include the synthesis and characterization of the materials, the assessment of the amount of oligonucleotide embedded in the structure and the activity of the aptamers in biological media and *in vitro* in cancer cell lines. The candidate appointed should have a previous experience on the synthesis and characterization of nanomaterials. Once the materials have been fully characterized, he/she will test the toxicity/dose dependance and the degradation of the nanomaterials in different cell lines. Detailed studies on the recognition ability of the aptamers will be performed in water and in cells.

**Application:** Candidates must send their CV, publications list and a short description of their skills and achievements to Prof. Luisa De Cola via email ([luisa.decola@marionegri.it](mailto:luisa.decola@marionegri.it)).

**The deadline for applications is September 30, 2024.**

The starting date of the contract must within 15<sup>st</sup> October.