



Assessorato all'Università e Ricerca Scientifica,  
Innovazione Tecnologica e Nuova Economia,  
Sistemi Informativi e Statistica



# INTERNAZIONALIZZAZIONE DEI Centri Regionali di Competenza



## DFM - Molecular Diagnostics and Pharmaceuticals

DFM's mission focuses both on the "discovery" of molecular basis and the related activities of technological transfer towards enterprises. The main goal is to create new medications and/or diagnostics tools coming from natural or from synthesis processes which are applicable in pathologies of high social impact.

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### The principal outputs

#### Anti-angiogenic Strategy for the Treatment of Tumours

The use of anti-angiogenic strategy for the treatment of tumours is a process which allows for the remodelling of vascular tissue to impede or limit the expansion of tumour mass. In physiological situations, angiogenesis is regulated through the balance of pro- and anti-angiogenic factors, which when altered facilitate the proliferation of certain pathologies, among which numerous tumoural forms like glioblastoma multiforme, meningioma and thyroid carcinoma. In this regard, the DFM enjoys a prominent position in anti-angiogenic strategy for the treatment of tumours thanks to the individuation of a series of molecules capable of modulating angiogenesis, both for therapeutic and diagnostic purposes.

#### Design and Development of New Cardiovascular Medication

In addition to solutions which favour the control of hypertension, of the processes that create blood clotting and of the dysfunctions at the basis of atherosclerosis, the main pharmacological approaches to the therapy of cardiovascular pathologies include solutions which guarantee cardiac frequency and coronary insufficiency. In this field, DFM has developed new peptide and peptidomimetic ligands of the human urotensin receptor. This strategy represents both a valid alternative and a complementary solution with hypertension medication. Furthermore, peptidomimetic systems with proangiogenic action have been developed from VEGF. They allow repairing cardiovascular damages generated by ischemic disease processes.

#### Structure

The excellence of DFM's research is guaranteed by the active participation of over 250 researchers of the Centre's implementing bodies: The Biostructures and Bioimaging Institute of the National Council for Research Naples (CNR), the Interuniversity Centre for Instrumental Analysis Services of the University of Naples Federico II, the Department of Experimental Oncology of the National Institute of Tumours- G. Pascale Foundation and the Department of Biomorphological and Functional Sciences of the University of Naples Federico II.

DFM avails of a network of highly specialized laboratories, for both research and technical analysis. The spectrum of competences available is diversified in a chain of research and development which uses the following laboratories and integrated networks: CALab — Cells and Animals; SpectEILab — Structural Formula; MSLab — Mass Spectrometry; RMLab — Magnetic Resonance; DIMLab — Diagnostic and Imaging; NucleoNet — Nucleic Acids; DSNNet — Drug Screening; BioSNet — Structural Biology.

DFM enjoys a prominent position, among both international research centres and pharmaceutical multinationals, in the research and development of anti-angiogenic strategy for the treatment of tumours and in the design and development of new cardiovascular medication. DFM researchers have **registered twenty patents** in these fields, **twelve of which developed with industrial partners**.

#### Potential Market

The use of DFM's competences and solutions is aimed at operators of the pharmaceutical and diagnostic sectors. The Centre offers its services to both small niche operators and European

pharmaceutical multinationals as an ideal partner for the joint development of new compounds both for pharmaceutical and diagnostic purposes.

**Commissioning Bodies/Clients:**

Tromb-X (Belgium), Hardis S.p.a. (Italy), Tecnogen S.p.a. (Italy), Esaote S.p.a. (Italy), Kedrion S.p.a. (Italy), Sigma Tau - INDUTRIE FARMACEUTICHE RIUNITE - S.p.a. (Italy), Primm S.r.l. (Italy), Bracco S.p.a. (Italy), Chiesi Farmaceutica S.p.a. (Italy), Bioindustry Park del Canavese - IVREA (Italy), INBIOS S.r.l. (Italy), Regione Campania (Italy), Ministero dell'Istruzione, Università e Ricerca (Italy), Ministero della Sanità (Italy), ROTTAPHARM S.p.a. (Italy); ABOCA S.p.a. (Italy), Arterra Bioscience S.r.l. (Italy), Medestea S.r.l. (Italy), Sanofi-aventis S.p.a. (Italy), Segix Italia S.r.l. (Italy), Framework Programmes projects partnerships.

**Tecnological Contact**

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