



CATRIN

Czech Advanced
Technology and Research
Institute

H2020 Twinning NANO4TARMED

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Nano4tarmed



Advanced hybrid theranostic
nanoplatfroms for an active drug
delivery in the cancer treatment

nano4tarmed.com

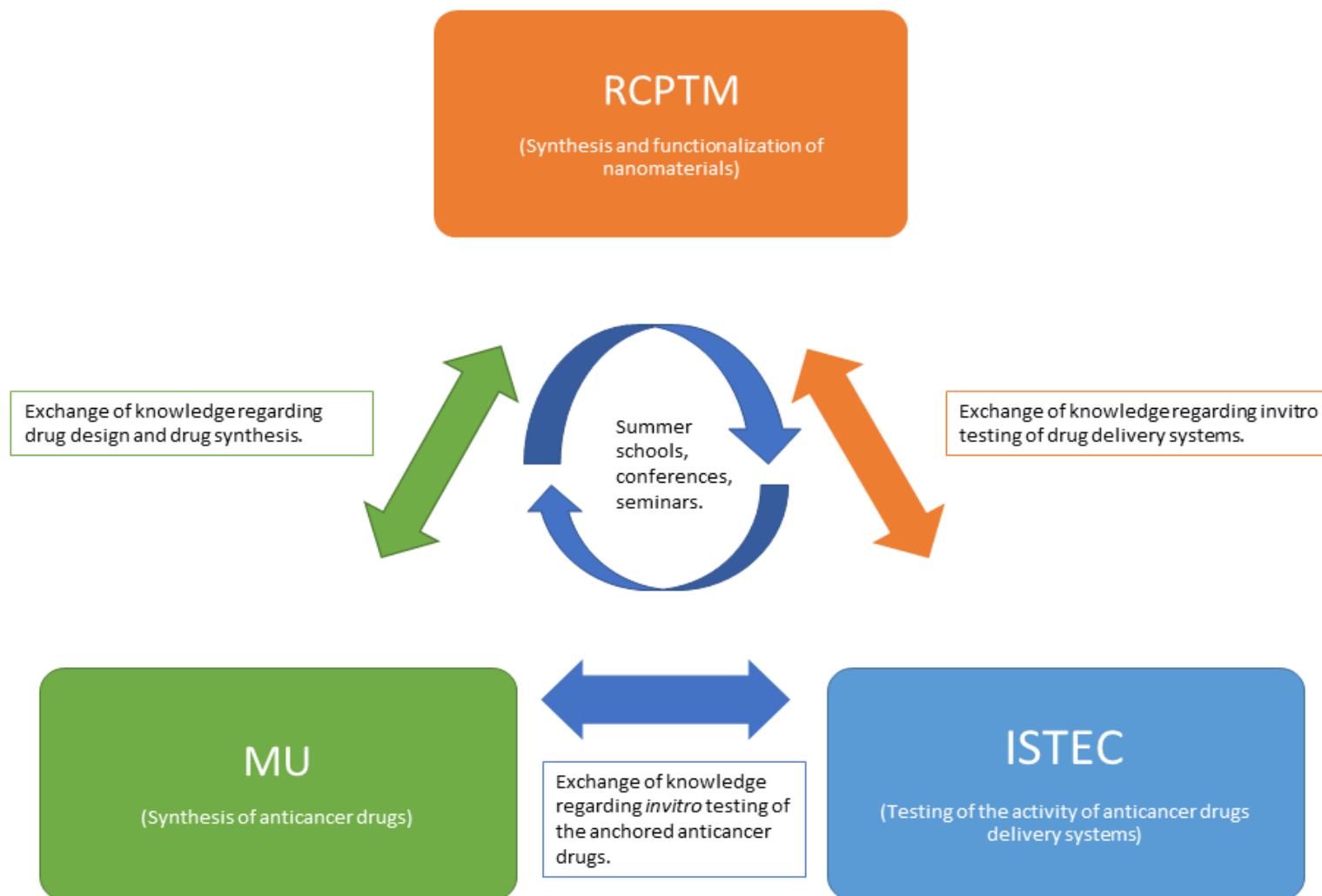
NANO4TARMED: Project goal and measures to be implemented

NANO4TARMED will create an interdisciplinary scientific cluster in which chemists, biologists and physicists share their extensive expertise and different points of view with a mutual aim

to deal with the fundamental issue of nanotechnology driven anticancer drug delivery.

- This mutual effort of **UP, CNR and NUIM** will lead to impactful outcomes, which will contribute to increasing the knowledge in the fields of biomaterials, chemical functionalization, cancer stem cells, imaging, etc.
- The project objectives will lead to establishing a **scientific platform** with **results further applicable to pharmaceutical practice**, including open dialogues with respective companies and dissemination of results through an Open innovation platform.
- The intended exchange of the knowledge base will be accomplished through series of planned **workshops, seminars, summer schools, conferences and exchanges of researchers.**

NANO4TARMED: Scientific cluster



**Palacký University
Olomouc** – Regional Centre
of Advanced Technologies
and Materials (CATRIN)

**National University of
Ireland Maynooth** –
Department Of Chemistry

**Consiglio Nazionale Delle
Ricerche** – Institute of
Science and Technology for
Ceramics

NANO4TARMED: Specific objectives

- 1) Strengthening knowledge and implementing new approaches to the development of advanced nanocarrier systems for anticancer drug delivery.
- 2) Strengthening knowledge of novel platinum based anti-cancer drugs and study of their effects on cell lines and 3D models.
- 3) Strengthening scientific profile and collaborations mainly of Early-stage researchers and research management and administration skills of the coordination institution, establishing new links between the Twinning partners and beyond.
- 4) Strengthening the network with the application partners and thus enhancing the competitiveness of the region.
- 5) Implementing open science models.



NANO4TARMED: Measures to achieve specific objectives

1) + 2) Strengthening knowledge and implementing new approaches in the development of advanced nanocarrier systems for anticancer drug delivery and strengthening knowledge of novel platinum based anti-cancer drugs and study of their effect on cell lines and 3D models:

- **Short-term trainings** in the form of staff exchange (22) and
- **Long-term trainings** (7)
 - for Early-stage researchers to learn methods for anticancer drug development, molecular biology, nanotoxicology, and active drug delivery transport
- **Long-term expert supervisions** for Early-stage researchers (5)

NANO4TARMED: Measures to achieve specific objectives

3) Strengthening scientific profile and collaborations mainly of Early-stage researchers and research management and administration skills of the coordination institution, establishing new links between the Twinning partners and beyond.

- Increasing **publishing activity** regarding numbers of publications and scope of the journals (11)
- Submitting **international grant proposals** (2)
- Training for RCPTM **research managers and administrators** by means of workshops/seminars focused on European projects preparation/implementation/administration and research management (6) and short-term stays in the corresponding office both partners (6)
- Upgrading the **research management/administration unit** and its services for researchers
- Workshop dedicated to early-stage researchers focused on **gender issues** organized at UPOL (3)

NANO4TARMED: Measures to achieve specific objectives

4) Strengthening the network with the application partners and thus reinforcing the competitiveness of the region

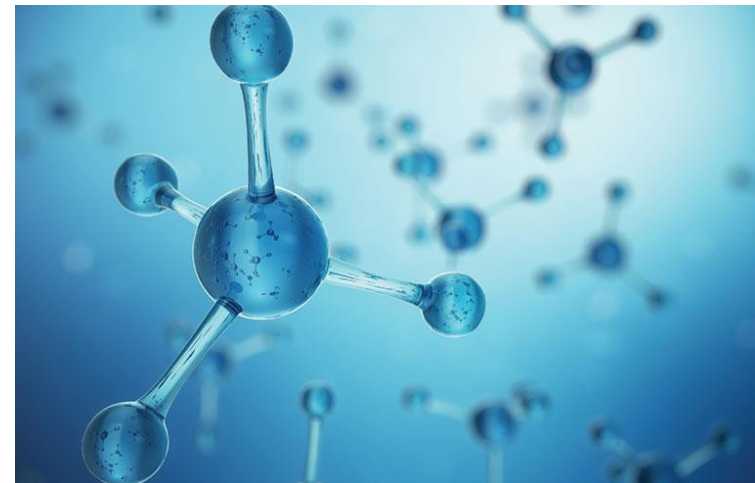
- Organisation of thematic **seminars and open days** in the research centres' laboratories (13 in total)
- **Round tables** with business partners in the field (3)
- **Technology transfer training** focused on establishment of spin-off companies for UP and CNR researchers at NUIM (1)



NANO4TARMED: Measures to achieve specific objectives

5) Implementing open science models

- **Project website** (nano4tarmed.com)
- Publication of the **research data in open access**
- Presentation of the **project activities to public**
- Developing a **repository of open research journals**
- Building the **database of potential project, research, and application partners**



NANO4TARMED: Expected impacts

Scientific:

- Establishment of a network, Increase in numbers of impacted papers etc.

Societal:

- Increase a quality of life not only of the patients, but also of the family, and finally, society.

+ HE: Sustainable Development Goals and European Green Deal

Educational:

- Modernization of classes, Exchange of student through mobilities etc.

Technological:

- Development of highly specific targeted drug delivery systems applicable in treatment of a broad spectrum of cancers.

NANO4TARMED: Lessons learned

- 1) Challenging scientific topic and strong, compatible partners = **KEY ASPECTS**
- 2) Specify mutual benefits of the collaboration (for UP, but also for the advanced partners)
- 3) Involve women researchers, if possible
- 4) Focus your expected impacts on SDGs and EGD
- 5) Apply ALL measures specified in the call (short-term staff exchanges; expert visits and short term on-site or virtual training; workshops; conference attendance; organisation of joint summer school type activities; dissemination and outreach activities)
- 6) Project has to be build on a well-developed SWOT analysis
- 7) Involve your project management department and consulting agency

NANO4TARMED: Project implementation in the times of Covid-19

- 1) The beginning of the project implementation was postponed to January 1st 2021 due to Covid-19
- 2) Fortunately, we are able to realize long-term trainings, but we have postponed all short-term activities
- 3) Trainings for RMAS will be held online in 2021
- 4) We have delivered first bunch of reports, which was quite challenging since we are building the new know-how (except ERCs, we have not coordinated any EC Framework projects yet)
- 5) Even though the open access, data management and gender equality are crucial issues for EC, it is not yet for Czech beneficiaries
- 6) Consortium issues – we are learning to solve them with self-confidence



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