Nano World Cancer Day 2016

February 2nd

"How is Nanomedicine concretely changing Cancer care for patients?"

Simultaneous press conferences in 12 European countries:

Austria (Vienna), France (Paris), Germany (Frankfort), Greece (Athens), Ireland (Dublin), Italy (Milan), Netherlands (Utrecht), Portugal (Braga), Spain (Barcelona), Switzerland (Zurich), Turkey (Gebze) and United-Kingdom (London)

www.nanoworldcancerday.eu

Organizers

Heinrich Walt, Prof. Dr. rer. nat.
walter.steurer@mat.ethz.ch
Heinrich Hofmann, Prof.
Heinrich.hofmann@epfl.ch

UniversityHospital Zurich

EPFL ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE

nanomedicine EUROPEAN TECHNOLOGY PLATFORM

ENATRANS Enabling NAnomedicine TRANSlation

TABLE OF CONTENTS

THE NANO WORLD CANCER DAY

How is Nanomedicine concretely changing Cancer care for patients?

Attending the Nano World Cancer Day press conferences, which are organized in the framework of the World Cancer Day, is a chance to discover the major improvements that Nanomedicine is bringing to the field of cancer care, from earlier and more accurate diagnosis to more efficient and less toxic treatments.

During one day, the best Nanomedicine experts across 12 European countries will deliver short speeches illustrating the latest breakthroughs in Nanomedicine and current or on going changes for cancer patients. These invited speakers are clinicians, researchers, entrepreneurs, institutions, etc.

Nanomedicine already impacts cancer care and has the potential to revolutionize it in the coming years, thereby opening new and highly significant opportunities for the benefits of patients.

For the full international program, please visit our website ***www.nanoworldcancerday.eu.***

SPEAKERS

Prof. Dr. med. Roger Stupp, Klinikdirektor der Klinik für Onkologie, UniversitätsSpital Zürich, Rämistrasse 100
8091 Zürich

Prof. Dr. Heinrich Hofmann,
Powder Technology Laboratory, Institute of Materials, Station 12, EPFL, 1015 Lausanne

Prof. Dr. med. Beatrice Beck Schimmer, Leitende Ärztin Institut für Anästhesiologie, UniversitätsSpital Zürich
Rämistrasse 100
8091 Zürich

PD Dr. med., Dr. sc. hum., Dipl-Phys. Andreas Boss, Leitender Arzt Institut für diagnostische und interventionelle Radiologie, UniversitätsSpital Zürich Rämistrasse 100, 8091 Zürich

Prof. Dr. med. Caroline Maake, Anatomisches Institut, Universität Zürich,
Winterthurerstrasse 190
8057 Zürich

Prof. Dr. Niels Kuster, Gründer und Direktor der IT'IS Foundation der ETH Zürich, Zeughausstrasse 43, 8004 Zürich

Prof. Dr. med Niloy Ranjan Datta, Oberarzt mbF Radio-Onkologie-Zentrum, Kantonsspital Aarau, Tellstrasse, Haus 25
5001 Aarau

Prof. Gerrit Borchard , Section des sciences pharmaceutiques , Biopharmacie Université de Genève, Quai Ernest-Ansermet 30
1211 Genève

Prof. em. Dr. phil. nat. Peter Gehr, Institute für Anatomie, Universität Bern, 3012 Bern , NFP 64 „Opportunity and Risk of Nanomaterials"

SPEAKERS

Heinrich Walt

Prof. Dr. rer. nat.

Group Leader, Oral Oncology Research
University Hospital Zurich
ETPN representative

Eröffnung des Nano World Cancer Day in Zürich

Heinrich Walt is a tumor biologist who got his degrees (master diploma and Ph.D.) at the Universities of Zurich and Fribourg, Switzerland. After a postdoc phase performing cancer related research projects at the Institutes of Anatomy and Pathology of the University of Zurich, he built up a new Research Division of Gynecology at the Department of Gynecology, University Hospital Zurich from scratch. In 1993, he received the title of a Professor from the medical faculty of the University of Zurich. Today he is Group Leader of Oral Oncology Research at the University Hospital of Zurich, Department of Oral and Cranio-Maxillo Facial Surgery (Director: Prof. Martin Rücker). From 2003 to 2008 Heinrich Walt served as President of the Swiss Society for Oncology. In 2010, he became a board member of the Foundation for Research on Information Technologies in Society in order to develop new projects to fight against cancer. In 2011, Heinrich Walt was elected as President of the European Platform for Photodynamic Medicine. This organization is involved in the promotion of photodiagnosis and photodynamic therapy and includes nanomedicine as well. It fosters the formation of consortia for EU-projects. In parallel, he serves as an Associate Editor of "Photodiagnosis and Photodynamic Therapy".

Heinrich Hofmann

Prof. Dr.-Ing

Director Powder Technology Laboratory, EPFL

Einführung und Präsentation ETPN

(European Technology Platform for Nanomedicine)

Heinrich Hofmann received Msc. and Ph.D. degrees in material science from the Technical Universty of Berlin (TUB) Berlin and the Max Planck Institute of Metal Research Stuttgart in 1979 and 1983, respectively. In 1983 till 1985 he was scientist at the Powder Metallurgy Lab at MPI in Stuttgart. 1985 he joined the Inorganic powder research group of Alusuisse-Lonza at Neuhausen/Rheinfall, Switzerland. Since 1993 he has been with the Department Material science at EPFL, where he was an Assistant Professor, became a Full Professor in 1999. His current research interests include powder technology especially synthesis, characterization and application of inorganic and metallic nanoparticles. Since 1998, he is focusing his research on inorganic nanoparticles for medical applications. He is member of several professional organizations as well as of the “Europäische Akademie für Technikfolgen Abschätzung” (technology assessment) and Member of the Swiss Federal working group “Nanoregulation. He is member of various scientific advisory boards in Japan, China and Thailand. Since 2008 he is a cofounder of a company developing nanocomposites for cancer treatments (ANTIA Therapeutics). His publication list comprises over 135 Publications in reviewed journals, 33 publications in proceedings, co-author of 5 books and co-editor of 2 MRS proceedings and he is co-inventor of 15 patents or patent applications

Caroline Maake

Prof. Dr. med.

Anatomisches Institut, Universität Zürich

Neue Nanopartikel und ihre Wirkung gegen Krebs:
Lipid-basierte Carrier zur Verbesserung der
Photodynamischen Therapie

Prof. Dr. med. Caroline Maake ist Dozentin für Anatomie, Histologie und Embryologie am Anatomischen Institut der Universität Zürich. Sie studierte Humanmedizin und einige Semester Literatur und Kunst an der Johannes Gutenberg Universität in Mainz, Deutschland. Nach verschiedenen Stellen am Anatomischen Institut in Zürich verbrachte sie zwei Jahre am Department of Internal Medicine and Physiology, University of Manitoba, Winnipeg, Canada. Sie habilitierte 2004 an der Universität Zürich und war 2005 Gastprofessorin am Anatomische Institut der Universität Erlangen. Caroline Maake leitet seit vielen Jahren eine unabhängige, von nationalen und internationalen Grants unterstützte Forschungsgruppe am Anatomischen Institut der Universität Zürich. Einer ihrer Forschungsschwerpunkte befasst sich mit biologischen Effekten neuer Nanoformulierungen, besonders im Zusammenhang mit Photodynamischer Therapie.

Abstract

Photodynamic therapy (PDT) is a non or minimally invasive regime without severe side effects that has the potential to improve treatment options for cancer patients. However, current PDT methods feature certain drawbacks, hampering its routine clinical application. Recently, nanoformulations have shown great promise to overcome some of these problems. They may serve as drug carriers that allow for the encapsulation of lipophilic PDT drugs at high concentrations or enable the attachment of targeting moieties like e.g. antibodies. In our recent studies we aimed to investigate the potential of lipid-based carriers to improve m-tetrahydroxyphenylchlorin (mTHPC)- or hypericin-mediated PDT for the treatment of head and neck- as well as stomach cancers.
For our studies we used a battery of models, including standard monolayer cancer cell cultures, 3-dimensional cancer spheroids, chorio allantoic membrane models and animal experiments. Methods comprised various microscopic techniques, cell death assays, immunohistochemistry, and molecular biological methods. Nanoformulations were selected and optimized with regard to biologically relevant parameters such as rate of intracellular accumulation, lack of toxicity, stability and PDT efficacy. The results of our studies support the notion that nanoformulations, if carefully designed, may provide clear advantages for PDT in clinical settings.

Prof. Dr. med. Niloy Ranjan Datta

Senior Consultant and Head, Radiation Therapy Research Program,
Kantonsspital Aarau, Aarau
As above

Nanoparticle based hyperthermia

Presently,

- Clinical Radiation Oncologist, presently working in Department of RadioOnkologie, KSA-KSB, Kantonsspital Aarau, Aarau since Oct 2012. Currently involved in various research activities related to hyperthermia and also for global development of radiotherapy infrastructure and human resources.

Previously,

- Director Professor and Head, Department of Radiation Oncology, Rajiv Gandhi Cancer Institute and Research Centre, Delhi, India
- Professor and Head Department of Radiation Oncology, Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, India
- Consultant, Programme for Cancer Therapy, International Atomic Energy Agency (IAEA), Vienna

Areas of interest

- Hyperthermia,
- Brachytherapy,
- State of art radiotherapy techniques – IMRT, IGRT
- Radiobiology,
- Development of radiotherapy infrastructure and human resources globally

Reviewer of a number of peer reviewed journals in Radiation Oncology / Oncology
Publications: 155

Abstract

Hyperthermia at 39-43°C, is fast emerging as a “fifth” form of cancer therapy in association with surgery, radiotherapy, chemotherapy and immunotherapy. One of the oldest forms of cancer treatment known to mankind, the wide adoption of this modality in present day clinics is backed up by strong thermoradiobiological rationale. It has been shown that hyperthermia is one of the most potent radiosensitizers, has synergistic action to various chemotherapeutic agents and above all is a safe treatment modality free from any added morbidity. Further, a large number of recent publications, including systematic reviews and meta-analysis have provided level I/II evidence of the therapeutic efficacy of hyperthermia in various tumour sites. Further, the technological advancements in

hyperthermia treatment units, treatment planning and monitoring has allowed hyperthermia to be delivered effectively and safely in patients.
Traditionally local hyperthermia is delivered by heating tumours “outside to inside” using radiofrequency, microwave, ultrasound, regional perfusion etc. Nanoparticle based hyperthermia on the contrary would deliver the hyperthermia “inside out”. Nanoparticles through their enhanced permeability and retention (EPR) effect are preferably localized inside the tumours resulting in a theranostic capability of the nanoparticles. This would result in using nanoparticles both for diagnostics and therapy by adding a payload of thermolabile chemotherapy drugs and radionuclides.
Metallic nanoparticles (ferromagnetic) are excellent conductors of heat and get preferentially located in the tumours through EPR effect. Under the influence of an alternating magnetic field (AMF), these particles gets magnetized and demagnetized in opposite directions (hysteresis loop). In the presence of a tuned AMF, these nanoparticles could be resonantly get excited to generate heat.
The presentation will discuss the potential application of these magnetic nanoparticles to create “inside out” local tumour hyperthermia and the future prospects of a payload of thermolabile chemotherapy drugs and radionuclides to move towards creating a “magic bullet” for cancer therapy.

Gerrit Borchard

Prof. Dr.

Professor in Biopharmaceutical Sciences

Head, Working Group *Non-Biological Complexes*,

European Directorate for the Quality of Medicines (EDQM)

Member, Steering Committee Non-Biological Complex Drugs

working group, Lygature (Leiden, NL)

Risk Assessment und Regulierungen für die Sicherheit der Nanomedizin

Gerrit Borchard is a licensed pharmacist and obtained his Ph.D. in pharmaceutical technology from the University of Frankfurt (Germany) for his thesis on the interaction of colloidal drug carrier systems with the immune system. After holding several academic posts, including Assistant and Associate Professorships at Leiden University (The Netherlands), he joined Enzon Pharmaceuticals, Inc. (USA) as Vice President Research. In 2005, he was appointed Full Professor of Biopharmaceutics at the University of Geneva (Switzerland), and Scientific Director of the Centre Pharmapeptides in Archamps (France), an international center for biopharmaceutical research and training.

From 2008 to 2013, he served as Vice President of the School of Pharmaceutical Sciences Geneva-Lausanne (EPGL) and form 2013 to 2014 as acting president. In 2012 Prof. Borchard joined the Non Biological Complex Drugs (NBCD) working group hosted at Lygature (Leiden, The Netherlands) and was nominated Chair of the NBCD working party at the European Directorate for the Quality of Medicines & Health Care (EDQM) by Swissmedic.

Prof. Borchard was nominated Fellow of the Swiss Society of Pharmaceutical Sciences (SSPhS) in 2010, and has been President of the Swiss Academy of Pharmaceutical Sciences since 2014. He also served as Vice President of the European Federation of Pharmaceutical Sciences (EUFEPS) from 2013 to 2015.

Prof. Borchard is (co-)author of 133 scientific publications and book chapters, co-editor of one book and 7 patents.

Abstract

During the last decade we came to realize that biologicals are of a highly complex structure that determines their activity and immunogenicity. Therefore, biologicals cannot be fully described by physicochemical means, even when using a multi-pronged analytical approach, and the generic principle of generating copies of such molecules does not apply. Hence, a regulatory approach leading to marketing authorization of follow-on biologicals in Europe and by FDA - the "biosimilar" pathway - has been established and refined. This strategy includes elements such as clinical testing of the follow-on against the originator product in clinical trials, as well as post-marketing surveillance.

Another group of complex drugs of non-biological origin (NBCDs) share aspects of complex structure, potential immunogenicity and impossibility of full characterization by physicochemical methods alone with their biological counterparts. Examples for these complex drugs include cancer therapeutics such as liposomal formulations (Doxil®), and nanoparticles such as Abraxane®. These drugs belong to a new class of "nanomedicines". Their size and attributes at the molecular scale confer these systems certain properties to interact with their biological environment.

Nanoscale drug delivery systems have been under investigation for several decades, yet only very few have actually matured to clinical application. While analytical techniques describing the physicochemistry of these systems are being constantly refined, we had to understand that these systems need a multi-pronged analytical approach to describe their physicochemical properties. However, little is known on the relation between these properties and the clinical outcome, such that these systems always need clinical assessment to ensure efficacy and safety. The situation is rendered even more complex by the appearance of intended copies of NBCDs. Some of those, e.g., iron sucrose products ("iron sucrose similars, ISSs"), and "generic" Doxil (approved by FDA in 2013 in view of drug shortages) have entered the market under the generic paradigm due to the absence of a more suitable regulatory evaluation process. Therefore, an effort is needed to discover these correlations between nano-properties and biological activity, develop suitable analytical techniques and define specifications, establish clinical protocols and, last not least, integrate this knowledge in a science-based regulatory approach to nanomedicines.

The principle of nanomedicines being complex drugs is well established within the scientific community. Regulatory authorities are also catching up, as shown by recent activities in the field by FDA and the European Medical Agency (EMA).

In conclusion, complex nanomedicines will increasingly enter the drug development pipelines. In order to assure safety and efficacy, of originator as well as follow-on products, regulatory processes are being put into place, following the biosimilar example. This regulatory process is based on scientific (fundamental and clinical) knowledge.

NANOMEDICINE AND CANCER

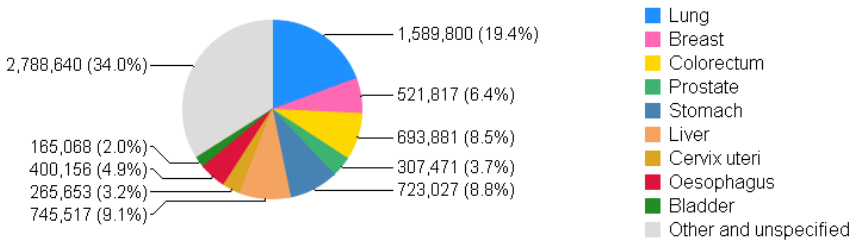
1. Cancer Today: key facts and figures

The global cancer epidemic - Today and future

Cancer is a major cause of morbidity and mortality in the World, and its incidence has been steadily increasing since 1980. Cancer kills more people on a global scale than AIDS, malaria and tuberculosis combined and accounted for 14 million new cases and 8.2 million related

deaths in 2012[12]. In the Western World, cancer represents the second leading cause of death after cardio-vascular diseases. Moreover, the impact of cancer in the developing world is growing at an alarming rate. More than 70% of all cancer deaths already occur in low and middle income countries and these regions are projected to account for two thirds of all cases of cancer worldwide by 2050.

Mortality per type of cancer/year



Source: Globocan 2012

There are significant regional differences in cancer prevalence, but the biggest cancer killers worldwide are lung cancer (1.6 million deaths in 2012), liver cancer (745,000 deaths in 2012), stomach cancer (723,000 deaths in 2012), colorectal cancer (693,000 deaths in 2012), and breast cancer (522,000 deaths in 2012)[1].

The number of cancer cases and related deaths worldwide is estimated to double over the next 20 to 40 years.

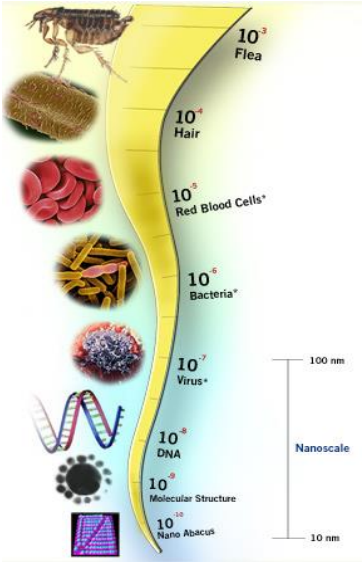
In addition to the unfortunate impact on loss of life, the economic impact of cancer is huge. Currently it is estimated that the disease costs of cancer across the world was approximately $290 billion in 2010 - $154 billion of which were medical costs[3].

2. What is Nanomedicine?

[1] Globocan 2012- Population Fact sheet. Available from: http://globocan.iarc.fr/Pages/fact_sheets_population.aspx
[2] World Cancer report 2014
[3] WEF report available at: http://www.world-heart-federation.org/fileadmin/user_upload/documents/Advocacy/Resources/Articles_Series_Reports/WEF_Harvard_HE_GlobalEconomicBurdenNonCommunicableDiseases_2011.pdf (9 November 2011)

Small is different

The nanometer scale, 10^{-9} m: imagine, one millimeter divided into a million parts!



Nanomedicine is the controlled application of nanotechnology to achieve breakthrough innovations in healthcare.
Physical properties of materials change at the nanometer scale. Nanomedicine exploits these specific properties to change healthcare treatment paradigm.

Nanomedicine allows the design of manufactured objects with tunable functions (heating, cutting, etc.) that can interact with the human body at the sub-cellular level.

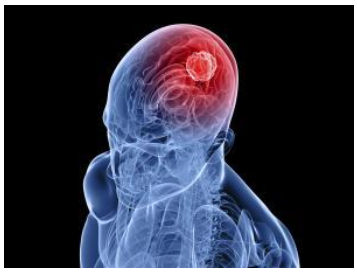
Nanomedicine products: already a second generation

The first generation of nanomedicine products improves efficiency of chemicals and biological based treatments. Nano carriers encapsulate drugs to make them reach with higher accuracy their target the tumor with higher accuracy, thus simultaneously improving treatment efficiency and reducing drug related toxicity.

Regarding the second generation of nanomedicine, they do not involve drugs anymore. Since then, the nanoparticules are by themselves, the active principle bringing a therapeutic effect, thanks to physical principles.

3. Nanomedicine and Cancer

Nanomedicine and diagnosis



Early detection of cancer cells is a major opportunity for an accurate diagnosis and efficient treatment. It drastically improves the chance of survival and recovery of patients.

Nanoparticles can already be used as innovative contrast agents to improve the performances of imaging techniques as Magnetic Resonance Imaging (MRI), Computed Tomography (CT) scan and fluorescence imaging.

Nanoparticles can also be used to enhance the signal and better detect cancer biomarkers. These are molecules indicative of the presence of cancer in the body, whether produced by the tumor itself or by the body as a specific response to the presence of the tumor.

Nanomedicine: new paradigm, new treatments

Despite a better prognosis for several tumor locations thanks to major therapeutic improvements over the past several decades, cancer is still a fatal disease in approximately 50% of the diagnosed cases.

Surgery, radiotherapy and chemotherapy are currently the most common treatment options to fight against cancer. Depending on each individual patient's profile of disease, these major therapies are commonly used either alone or in combination.

Nanomedicine products and technologies already improve these therapeutic approaches and have the potential to do much more for patients in the coming years.

Surgery

Live imaging techniques combined with nanoparticles can help the surgeon to localize and resect more precisely tumor tissues and metastases, thus increasing the efficacy and safety of cancer surgery.

Nanomedicine tools for surgery could also impact cancer patient's quality of life, notably by limiting the impact of scars and recovery.

Radiotherapy

Radiotherapy is a local treatment widely used in most oncology indications: about 60% of cancer patients receive radiotherapy at some point of their treatment.

The second generation of nanoparticles can be a game changer in radiotherapy. How?

Radiotherapy aims at killing cancer cells by delivering energy through X-ray radiations.

It has been proved that nanoparticles once injected into tumor cells, increase the dose of energy delivered and then improve potentially drastically the efficiency of radiotherapy.

Chemotherapy

The first generation of nanomedicine products can improve chemotherapy. Thus, the encapsulation of a drug into nanoparticles carriers helps to deliver the active molecules directly where it is relevant in the body. Doing so, enhances the efficacy of the treatment by maximizing the drug uptake into cancer cells and lessens the toxicity and side effects.

Other treatments

Beyond surgery, radiotherapy and chemotherapy, other treatments can be used in combination as immunotherapy or hormonal therapy.

Nanomedicine for cancer is already a reality

The nanomedicine experts speaking at the Nano World Cancer Day will share with you the latest and the most disruptive innovations in Nanomedicine. Numerous nanomedicine products are already available on the market to treat cancer, and much more are under clinical development.

Key facts of the Nanomedicine market:

- In 2011, the nanomedicine market was estimated between $50.1 and $68 billion and was planned to reach between $97 and $129 billion in 2016[6]
- **In 2013, 230 nanomedicine products were identified** on the market or under clinical development for different therapeutics areas including cancer, diabetes, cardiovascular, neurodegenerative, orteoarticular, infectious diseases, etc. [6]
- **Focus on oncology:**
    - Oncology is the leading application area of Nanomedicine products[6]
    - In 2013, 78 products were identified under clinical development or into the market (including first generation of nanomedicine products like Abraxane, Doxil, DaunoXome, Evacet,Lipo-Dox, MyCare Assays, NanoTherm)[6]

ETPN: MISSIONS AND STRATEGY

1. **What is ETPN?**
2. **ETPN promotes Nanomedicine internationally**
3. **A “Hub” to accelerate translation**

1. What is ETPN?

The European Technology Platform on Nanomedicine is an industry-led initiative that was created in 2005 as a joint venture between:

- The European Commission
- Healthcare industries as originally Philips, Siemens, UCB,
- SMEs as Nanobiotix, Onxéo
- Academic, research laboratories

Today, 150 members coming from 25 European Member States belong to ETPN, representing all the pillars of Nanomedicine: SMEs, which are the leaders of the Nanomedicine field in Europe, academia, industry, clinicians, and public institutions.

The global ETPN mission is to shape and support the European ecosystem of Nanomedicine in Europe. ETPN defines R&D priorities, promotes Nanomedicine (cf. paragraph 2) and stimulates knowledge transfer to accelerate the translation between innovative projects and the market, for the benefit of patients (cf. paragraph 3).

2. ETPN promotes Nanomedicine internationally

The ETPN steadily highlights the resources of the European Nanomedicine community as well as the more innovative concepts, teams, and entrepreneurs in nanomedicine. Doing so, it demonstrates the many new advantages that nanomedicine can bring to patients and accelerates the development of its most promising applications. Here are two concrete examples of ETPN actions to promote nanomedicine internationally.

- The European NanoMed Map[4] introduces on a single chart all the Nanomedicine ecosystem‘s actors in Europe. This map is available on the ETPN website and displays 1500 European actors in the field of Nanomedicine. Overall, more than 500 industrial players and SMEs having a direct link or activity with the field have been identified.
- The Nanomedicine Award[5] honors the best international nanomedicine innovation projects. It recognizes and promotes the best nanomedicine-based solutions having the potential to bring new diagnostic and therapeutic approaches to address unmet medical needs. Every year, exceptional international projects applied and most of them proposed cancer treatment solutions.

[4] http://www.etp-nanomedicine.eu/public/nanomedmap/
[5] http://nanomedicine-award.com

3. A "Hub" to accelerate translation

ETPN published in 2013 a White Paper: "Nanomedicine Contribution to Horizon 2020" a series of concrete and strategic recommendations[6].

The pivotal feature of the White Paper is the **Nanomedicine Translation Hub**, which goal is to accelerate the development and the translation of the best Nanomedicine projects and make Europe the leader in Nanomedicine thanks to several instruments, as shown by the following examples:

- The Nanomedicine **Translation Advisory Board (TAB)**: first in class experts provide concrete and invaluable advice, support and mentoring to very strongly selected innovative and ambitious nanomedicine projects (from academia and SMEs).
- The European **Nano-Characterisation Laboratory (EU-NCL)** performing pre-clinical, physical, chemical and biological characterization of nanomaterials to accelerate and facilitate regulatory approval of nanomedicine products.
- Specific **European Pilot lines** for good manufacturing processes (GMPs) of batches for clinical trials, addressing the current developmental and production gap between academic and industrial settings, and facilitating scale-up for clinical trials of nanomaterials.

Nanomedicine has already the potential to achieve breakthrough innovations to diagnose and treat cancer. Many more solutions will arise to answer unmet medical needs in oncology for the benefits of cancer patients in the coming years.

According to Laurent Levy, ETPN vice-chairman and CEO of the nanomedicine SME Nanobiotix: "*A great wave of innovation is coming with a disruptive potential. De-risking projects and developing data becomes essential, and even more key is bringing these programs to a stage where pharma can understand them*".

"*Five years from now every pharma will have a nano program*", said Christopher Guiffre, Chief Business Officer at nanotherapeutic developer Cerulean Pharma[7].

[6] ETPN White Paper available at: www.etp-nanomedicine.eu/etpn-white-paper-2013
[7] http://www.partnering360.com/insight/showroom/id/428

COORDINATORS AND CONTACTS

About ETPN

Created in 2005, the European Technology Platform on Nanomedicine is an initiative led by Industry and set up together with the European Commission to address the applications of nanotechnology to achieve breakthroughs in healthcare. The ETPN is structuring and federating the European Nanomedicine community and leading the communication toward the European Commission and the European Members States.

The ETPN contributed to set up numerous European funded projects providing a first impression of economic environment and the structural requirements for an efficient translation of R&D results into innovative nanomedicine.

For more information visit: www.etp-nanomedicine.eu

About ENATRANS

ENATRANS is led by a consortium of 7 partners belonging to the European Technology Platform for Nanomedicine.

It has been built to help the translation of innovative projects related to Nanomedicine to successfully go through the different stages of development from the idea to the patients and also improve global knowledge on Nanomedicine.

The key corner stone of ENATRANS is the Translation Advisory Board (TAB) a new instrument to provide free of charge advice and support to ambitious European Nanomedicine projects. First-in-class recognized experts from industry deliver concrete and invaluable advice to drive selected Nanomedicine projects into innovative products for healthcare.

ENATRANS partners: CEA-LETI (Grenoble, France), Nanobiotix SA (Paris, France), Gesellschaft für Bioanalytik Muenster e.V. (Muenster, Germany), Tel-Aviv University (Tel-Aviv, Israel), Fondazione Don Carlo Gnocchi ONLUS (Milan, Italy), TecMinho (Braga, Portugal) and coordinated by VDI/VDE-IT (Berlin, Germany).

For more information visit: http://enatrans.eu/public