Quantitative Imaging in Cancer: Connecting Cellular Processes with Therapy (QuIC-ConCePT)

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Research Areas

Biomarker Research
Imaging

At a Glance

- Status: **Active Consortium**
- Year Launched: **2011**
- Initiating Organization: **Innovative Medicines Initiative**
- Initiator Type: **Government**
- Location: **Europe**

Abstract

The Quantitative Imaging in Cancer: Connecting Cellular Processes with Therapy (QuIC-ConCePT) consortium is an Innovative Medicines Initiative (IMI) effort that aims to qualify imaging biomarkers of tumor cell proliferation, apoptosis, and necrosis. The objective is to provide tools to the drug developers to reliably demonstrate the modulation of key pathologic processes in tumors.

Mission

The QuIC-ConCePT consortium is an IMI effort that aims to qualify imaging biomarkers of tumor cell proliferation, apoptosis, and necrosis. A major goal is to enable drug developers to incorporate these imaging biomarkers (IBs) in Phase I clinical trials of investigational therapies that indicate underlying tumor pathology, and that the imaging biomarkers can be readily deployed in multiple cancer centers in a robust, consistent, ethical, and cost-effective way acceptable to the patients who participate in clinical trials. The work stream is focused on the design, evaluation, and introduction of IBs indicative of invasion and metastasis. The QuIC-ConCePT vision is that drug developers can incorporate these IBs for decision-making in Phase I trials of investigational therapies that can be readily deployed in multiple

cancer centers in a robust, consistent, ethical, and cost-effective way acceptable to patients.

Consortium History

2011 – Project start date (January)
2011 – First meeting of the entire QuIC-ConCePT consortium at Alderley Park, UK (September)
2012 – QuiC-ConCePT scientists publish a paper discussing how magnetic resonance imaging (MRI) could be used to assess the efficacy of new drugs (January)
2012 – First peer-reviewed publication (January)
2012 - QuIC-ConCePT Consortium Assembly held at EORTC Headquarters, Brussels, Belgium (September)
2012 - EORTC/IMI Project Session: Reducing Attrition Rates in Anticancer Drug Discovery and Development: IMI Approaches held at the 24th EORTC-NCI-AACR symposium on Molecular Targets and Cancer Therapeutics in Dublin, Ireland (November)
2013 - QuiC-ConCePT Consortium Assembly held in Manchester, UK
2013 – EANM/EORTC Joint session: Imaging Biomarkers for Early Response Assessment in Clinical Trials held at EANM ’13 in Lyon, France (October)

Structure & Governance

The QuIC-ConCePT project will work in close collaboration with the newly approved FP7 project EuroBioImaging “Research infrastructure for imaging technologies in biological and biomedical sciences” coordinated by EIBIR and EMBL. EORTC will ensure the link between the two projects, fostering cross-fertilization and preventing duplication. The QuIC-ConCept consortium partners consist of 14 academic organizations combined with one subject matter expert working with seven EFPIA companies over five years.

QuIC-ConCePT aims to qualify three specific imaging biomarkers of tumor cell proliferation, apoptosis, and necrosis, [18F]fluorothymidine (FLT) positron emission tomography (PET), apparent self-diffusion coefficient (ADC) of water protons measured by MRI, and isatin-5 sulfonamide PET tracer [18F]ICMT-11, to allow the drug developer to demonstrate reliably the modulation of these pathologic processes in tumors in patients in future trials.

A second aim (10 percent of the investment, WP6) is to develop and validate an IB based on a human antibody targeting metalloproteinase 2 (MMP2) on preclinical models, and to validate an approach quantifying invasiveness and early response by quantifying image features on CT and PET scans on preclinical and clinical models, a so-called “radiomics” approach.

Our vision for FLT, ADC, and ICMT-11 is that, by April 2016, drug developers can incorporate these imaging biomarkers for decision-making in Phase I trials of investigational therapies, confident that the imaging biomarkers are technically valid, that a measured change in the imaging biomarker faithfully reflects the desired change in the underlying tumor pathology, and that the imaging biomarkers can be readily deployed in multiple cancer centers in a robust, consistent, ethical, and cost-effective way that is acceptable to the cancer patients volunteering for our trials.

Each imaging biomarker is under the scientific supervision of an imaging biomarker champion, and each work package is under the supervision of a work package leader. Project managers work closely with the work package leaders, who are accountable for the management of deliverables and resources in their respective area.

Work Package 1: Project Coordination and Management

The overall aim of Work Package 1 is to ensure that QuIC-ConCePT achieves its deliverables with respect to time, cost, and quality, and with full legal, ethical, and regulatory compliance, while fostering creativity and innovation.

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Work Package 2: Pre-clinical Imaging

Financing

This project is funded by the Innovative Medicines Initiative, a public-private partnership between the European Union (EU) and the European Federation of Pharmaceutical Industries and Associations (EFPIA), resources of which are composed of financial contribution from the EU Seventh Framework Programme and EFPIA companies' in-kind contribution. Large pharmaceutical companies participating in IMI projects do not receive IMI funding.

The IMI Intellectual Property (IP) Policy governs the IP regime of all projects funded by the IMI JU. To assist with specific IP queries, IMI has set up a dedicated IP Helpdesk which can be contacted by e-mailing IMI-IP-Helpdesk@imi.europa.eu. The IMI IP policy can be accessed at the following address: http://www.imi.europa.eu/sites/default/files/uploads/documents/imi-ipr-policy01august2007_en.pdf

Data Sharing

According to IMI's intellectual property policy, the participants undertake to disseminate the data as soon as reasonably practicable but not later than one year after the termination or expiry of the project. The Project Agreement shall include a description of the material that must be disseminated in accordance with the IP Policy and referenced in the Grant Agreement. If the participants do not disseminate within such time periods without good reason, the Executive Office has the right to disseminate such results in a manner consistent with the Grant Agreement.

The results of the QuIC-ConCePT work should have utility in cancer research and in patient management in a very wide range of other important settings.

Homepage	http://www.quic-concept.eu/
Other website	http://www.imi.europa.eu/content/quic-concept

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