

# Contact

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Partners Continents 48 Months



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## New Discoveries, New Hope

The iPC project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 826121.

Individualized

**PaediatricCure** 



### About

Cancer in children is rare, but when it happens, clinically prescribed treatment options are not always as efficient as one would hope. Of those patients who are successfully treated, a substantial proportion suffers serious and long-term health consequences from the intensive therapies they underwent.

Cancer can be difficult to treat effectively because cancer cells undergo many random changes which means that each cancer has an essentially unique combination of molecular characteristics.

To address this problem, it is important to develop ways of specifically tailoring treatment combinations for the molecular profile of each individual cancer. to maximize cures and to minimize short and long-term treatment side-effects. That is the goal of iPC.





The project team will focus on identifying effective personalised treatment options for paediatric cancers.

A comprehensive computational effort to combine knowledge base, machine learning, and mechanistic models to predict optimal standard and experimental therapies for each child will be proposed.

We will produce, assemble, standardize, and harmonize high quality, multidisciplinary data and leverage the potential of big data



Tumours differ broadly across patients and show large molecular heterogeneity; each one being composed of cells with varied expressions. Consequently, similar tumour types, and even cells within the same tumour, show different outcomes and responses to the same therapy. On average,

only a guarter of oncology patients respond to the drugs they receive. Worse yet, chemotherapy could have severe side effects. This is of particular importance for childhood cancers because the treatment itself could be the culprit for developmental disorders and secondary tumours.

and high-performance computing

for the personalised treatments of

iPC will address the critical need

for personalized medicine for

children with cancer, while ma-

king a valuable contribution to the

digitalization of clinical workflows,

thus supporting the European

European citizens.

Digital Single Market.





## **Mission & Objectives**

The goal of the iPC project is to collect, standardize and harmonize existing clinical knowledge and medical data and, with the help of artificial intelligence, create treatment models for patients. Armed with these treatment models. scientists will then test them on virtual patients to evaluate treatment efficacy and toxicity, thus improving both patient survival and their quality of life.

To accomplish these goals, iPC has assembled an interdisciplinary team consisting of basic,

translational, and clinical researchers - all amongst the leaders in their respective fields - and established strong relationships with European Centres of Excellence, patient organizations, and clinical trials which focus on personalised medicine for our proposed case studies. Fundamentally, iPC will address the critical need for personalised medicine for children with cancer. contribute to the digitalization of clinical workflows, and support the European Digital Single Market Strategy.