

Proposal full title: **Genomic predictors and oncogenic drivers in hepatocellular carcinoma**

Proposal acronym: **HEPTROMIC**

Type of funding scheme:

Collaborative Project

(i) Small or medium-scale focused research project

Work programme topics addressed: Translational research on cancers with poor prognosis (FP7-HEALTH.2010.2.4.1-6)

Name of the coordinating person: **Prof. Josep Maria Llovet i Bayer**

List of participants:

Participant no.	Name of Principal Investigator	Organization legal name	Country
1 (Coordinator)	Prof. Josep Maria Llovet i Bayer	Consorci Institut D'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS)	Spain
2 (Partner)	Prof. Jessica Zucman-Rossi	Institut National de la Santé et de la Recherche Médicale (INSERM)	France
3 (Partner)	Prof. Manel Esteller Badosa	Institut D'Investigació biomèdica de Bellvitge (IDIBELL)	Spain
4 (Partner)	Prof. Lars Zender	Helmholtz Zentrum Für Infektionsforschung	Germany
5 (Partner)	Prof. Vincenzo Mazzaferro	Fondazione IRCCS Istituto Nazionale dei tumori	Italy
6 (Partner)	Prof. Todd Golub	Eli & Edythe L. Broad Institute	USA
7 (Partner)	Dr. Dominique Poncelet	Diagenode	Belgium
8 (Partner)	Dr. Patrick Larcier	TcLand Expression SA	France

ABSTRACT – HEPTROMIC Project

Hepatocellular carcinoma (HCC) accounts for more than 90% of liver cancers, and is a major health problem. Its incidence is growing and with more than 700,000 annual cases worldwide - 50,000 in Europe-, it is the 3rd cause of cancer-related mortality. Most patients are diagnosed at advanced stages with dismal survival rates lower than 1 year, even after sorafenib, the sole systemic therapy available. The main goal of the HEPTROMIC project is to produce breakthrough knowledge in two critical aspects of HCC research: prognostic prediction and identification of oncogenic drivers susceptible for intervention, leading towards more personalized treatment algorithms. The HEPTROMIC Consortium proposes a 3-year translational research study bringing together an outstanding team of researchers with clinical and genomic expertise along with cutting-edge technology.

Eight partners -six academic and two SMEs- will address the following objectives by applying high-end transcriptome, methylome and deep sequencing technology in a large set of 1,140 human samples:

Objective 1) Genomic characterization of poor prognosis subclass of hepatocellular carcinoma.

Objective 2) Identification of driver oncogenic events as potential treatment targets. Findings obtained will be confirmed in sophisticated experimental models that closely mimics human liver cancer.

Objective 3) Design of prognostic devices for clinical translation. This transfer of knowledge will be led by SMEs with entrepreneurial management skills with experience in creating new products increasing European competitiveness and boosting the innovative capacity of industries.

Overall, the Consortium foresees impacts on improved patient survival by refining prognosis and decision-making, identifying targets amenable for selective therapies and by improving the allocation of resources. In summary, HEPTROMIC will strength links between the academic and industry spheres, ultimately contributing to reduce liver cancer mortality.

KEYWORDS: liver cancer; hepatocellular carcinoma; translational research; survival; life expectancy; poor prognosis; prognosis prediction; cancer experimental models; genomics; oncogenes; methylation.