

Monothematic Conference

Liquid Biopsy in BTC: *From Bench to Bedside* & Precision-BTC Network General Meeting

Palma de Mallorca, Spain

May 22-23, 2025



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Welcome from the Organizers

It is our great pleasure to welcome you to the Monothematic Conference *Liquid Biopsy in BTC: From bench to Bedside* and the Annual Meeting of the COST Action Precision-BTC-Network, both organized by COST, in the beautiful city of Palma de Mallorca, Spain.

This event was organized with a focus on consolidating current knowledge on liquid biopsy in BTC and drawing a roadmap towards the adoption of liquid biopsy as a key tool in the diagnosis and personalized treatment of biliary tumors. In turn, the Precision-BTC Network Annual Meeting on the second day aims to discuss the latest findings related to epidemiology, new precision therapeutic strategies, patient-centric approaches, artificial intelligence and new preclinical models for the development of new drugs for patients with biliary tumors. To this end, the meeting agenda is full of interesting presentations by prominent speakers with diverse specialties and backgrounds.

We have also been keen to provide a platform for emerging talent. Young researchers working in the field of biliary cancer will deliver talks and participate in conference sessions, as well as in the poster session, where they will have the opportunity to share their original research with their fellow attendees. It is our hope that this poster session—and that the conference generally—will serve as a forum for networking and relationship building. It is through shared effort involving stakeholders from different backgrounds that we best address the challenges related to the prevention, detection, and treatment of BTC.

Finally, we would like to extend our sincere gratitude to all those who have contributed to making this important event a reality, which would not have been possible without the generous support of our sponsors and collaborators. Thank you.

With our best wishes for a fruitful and rewarding meeting,
The organizing team



Agenda

Liquid Biopsy in BTC: *From bench to bedside*

22 May 2025

08:00-08:50 Registration, badge & material delivery

08:50-9:00 Welcome words

SESSION 1: GENERAL OVERVIEW OF BTC AND CURRENT DIAGNOSTIC PIPELINE

Moderators: Chiara Braconi / Bledar Kraja

9:00-9:15	Natural course of BTC	Trine Folseraas
9:15-9:30	An historical overview of CA19.9: from discovery to clinical application	Bruno Sangro
9:30-09:45	Molecular diagnosis of BTC	Tim Kendall
9:45-10:00	Conquering hurdles of liquid biopsy analyses for the detection of BTC	Guro Lind
10:00-10:15	Round table & Discussion	Teresa Macarulla Guido Carpino Vincenzo Cardinale
10:15 - 10:30	Coffee break and poster session	

SESSION 2: FROM BIOMARKER DISCOVERY TO CLINICAL IMPLEMENTATION

Moderators: Pedro M. Rodrigues / Tian Tian

10:30-10:45	Applications of ctDNA in clinical practice	Anna Saborowski
10:45-11:00	Next-generation biomarkers for the early diagnosis of cholangiocarcinoma	Jesus M. Banales
11:00-11:15	An example of clinical implementation: OWLiver test for MASH diagnosis	Cristina Alonso
11:15-11:30	Patenting and intellectual property	Salvatore Cappadona
11:30-11:45	Basic Science to Clinical Translation: The role of regulators	Joao Rocha
11:45-12:30	Round table: How to translate novel biomarkers into clinics? A step-by-step guide	Juan Valle Stacie Lindsey Helen Morement Stephen Rossi Martine Walmsley
12:30 - 13:30	Lunch & poster session	

Independent Medical Education Session

Moderators: Erman Akkus

13:30 -13:50	HER2-Amplified Advanced Biliary Tract Cancer: Exploring the Utility of Liquid Biopsy for Patient Identification	Florian Castet
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SESSION 3: ABSTRACT-BASED SESSION

Moderators: Rui E. Castro / Constantinos Athanassopoulos

13:50 -14:05	Longitudinal liquid biopsy in patients with biliary tract cancer undergoing systemic treatment	Giulia Tesini
14:05 -14:20	Extracellular Vesicle Profiling for Treatment Response Prediction in Advanced Biliary Tract Cancer	Michele Zanoni
14:20 -14:35	Bile extracellular vesicles contain protein biomarkers for early cholangiocarcinoma diagnosis in primary sclerosing cholangitis	Ainhoa Lapitz
14:35 -14:50	Upregulated Glycolysis and SLC2A3 Expression in iCCA: Implications for Tumor Aggressiveness and Prognosis	Michela Polidoro

Keynote Lecture

Moderators: Miriam Sanso Martínez

14:50 -15:30	Translating liquid biopsies into clinics: Lessons learnt from other cancers	Klaus Pantel
15:30 - 16:00	Coffee break and poster session	

SESSION 4: BIOMARKERS OF RESPONSE TO THERAPY

Moderators: Teresa Macarulla / Dominique Scherer

16:00-16:15	Oncological treatment of BTC	Erman Akkus
16:15-16:30	Biomarkers of treatment response: are we there yet?	Cindy Neuzillet
16:30-16:45	Tracking drug resistance in BTC: the role of liquid biopsy in Precision Oncology	Lipika Goyal
16:45-17:00	New therapies for BTC: what's next?	Arndt Vogel
17:00-17:15	Panel Discussion	Juan Valle Chiara Braconi Jesus M. Banales

Group Photo

17:15 -19:15 **Poster Tour**

Moderators: Reka Toth / Jonathan Pol

17:15-19:15 **Precision-BTC Network Management Committee (MC) Meeting [Invite Only]**

20:30

Joint Dinner

Agenda

Precision-BTC Network Annual Conference

23 May 2025

08:00-08:50 Registration, badge & material delivery

08:50-9:00 Welcome words

SESSION 1: WG1 - Identification of epidemiological heterogeneity in Europe

Moderators: Marcin Krawczyk / Chiara Gabbi

09:00-09:15	Consensus Statement on Ampullary carcinoma	Ana Landa
09:15-09:30	Liquid Biopsy for Gallbladder Cancer: Design and Results of the EULAT Eradicate GBC Consortium	Dominique Scherer
09:30-09:45	Cholangiocarcinoma in individuals with chronic liver disease is diagnosed earlier, leading to better prognosis	Laura Izquierdo

SESSION 2: WG3 - Personalisation of treatment for patients with BTC

Moderators: Anne Demols / Angela Lamarca

09:45-10:00	Updates on SAFIR (ABC10) clinical trial	John Bridgewater
10:00-10:15	Genomic alterations in BTC and association with patient outcomes:translational data from the BILCAP clinical trial	Valerie Crolley

10:15-10:25	Unveiling the secrets of real-world use of Zanidatamab in an English biliary tract cancer cohort	Marina Izaskun Crespo Cruz
10:25-10:35	Preliminary Exploration of Activated Mast Cells in CCA Subtype with Fibrotic Tumor Microenvironment	Nataliya Rohr-Udilova
10:35-10:45	Clinically effective biliary drainage and systemic therapy rather than intraductal radiofrequency ablation improve overall survival for inoperable perihilar CCA patients: results of the COMBO-RFA randomized clinical trial	Monica State
10:45-11:15	Coffee break and poster session	

SESSION 3: WG4 - Patient-centric support management

Moderators: Antonella Cammarota / Mohamed Bouattour

11:15-11:30	Quality of life (QoL) in BTC: aggregated trial data	Luka Cavka
11:30-11:35	Patient advocacy in Cholangiocarcinoma - an AMMF perspective	Helen Morement
11:35-11:40	Patient advocacy in Cholangiocarcinoma - an ATUVIBI perspective	Elisabeth Baucells
11:40-11:45	Patient advocacy in Cholangiocarcinoma - an APIC perspective	Paolo Leonardi
11:45-12:00	Identifying Gaps in Provider Practices and Patient Education of CCA Screening and Surveillance: Results of a Multinational PSC Patient Survey	Stephen Rossi
12:00-13:00	Lunch and poster session	

SESSION 4: WG5 - Artificial Intelligence

Moderators: Jesper Andersen / Qinghe Zeng

13:00-13:15	AI-DELPHI: A consensus statement from the Precision-BTC Network	Colm O'Rourke
13:15-13:30	Combination of Artificial Intelligence and Spatial Transcriptomics to Decode Liver Cancer Heterogeneity	Qinghe Zeng
13:30-13:40	Artificial Intelligence-Assisted Electrochemical Biosensor for Urine-Based Detection of Biliary Tract Cancer via Liquid Biopsy	Onur Karaman
13:40-13:50	Prognostic tissue biomarkers for cholangiocarcinoma after tumor resection: from systematic review and meta-analysis to multicenter international validation	Beatriz Val
13:50-14:00	Application of machine learning and molecular docking to the modelling and design of HDAC6/ROCK dual inhibitors with in vitro experimental validation	Milan Beljkas

SESSION 5: WG6 - Drug development using preclinical models

Moderators: Laura Fouassier / Marta B. Afonso

14:00-14:15	NOX4/NOX1 dual inhibition in cholangiocarcinoma as an effective approach to target TGF-beta protumorigenic actions in cancer-associated fibroblasts	Javier Vaquero
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14:15-14:30	Defining the precursor cell states that give rise to cholangiocarcinoma	Luke Boulter
14:30-14:45	Mapping the tumor microenvironment in intrahepatic cholangiocarcinoma	Monique Verstegen
14:45-14:55	Deciphering the role of PDL1 in shaping the Tumor Microenvironment in Cholangiocarcinoma using a CCA-on-chip platform	Sofia Buzzi
14:55-15:05	Laser-activated nanoparticles rewire tumor microenvironment enhancing PD-1 blockade and T cell response in cholangiocarcinoma	Mirko Minini
15:05-15:15	Investigating the role of a natural compound as a Hedgehog inhibitor in the management of Intrahepatic Cholangiocarcinoma	Savino Paradiso
15:15-15:25	Could the AptLipo-SoroMitoPAC drug delivery system targeted with aptamer CA19-9 be a new drug candidate for intrahepatic cholangiocarcinoma?	Ozge Cevik
15:25 - 15:30	Closing remarks and farewell	



Oral Presentations

Abstracts

The following abstracts were chosen by the Selection Committee to be shared as oral presentations.

Abstract Title

Authors (Submitting author is underlined)

Longitudinal liquid biopsy in patients with biliary tract cancer undergoing systemic treatment

Giulia Tesini, Jack Greaves, Mobina Mahdleh, Francesco Amato, Colin Rae, Sergi Marco, Olivia Knight, Angela Ammirabile, Valentina Zanuso, Sophie McHaffie, Francesca Vita, Maria Giuseppina Prete, Antonia MacMillan, Karen Allan, Pawel Herzyk, Julie Galbraith, Rosemary Meenan, Margaret Henderson, Sophia Campbell, Andrea Lampis, Louis Chesler, Matteo Fassan, Luca Viganò, Timothy J Kendall, Lorenza Rimassa, Chiara Braconi

Extracellular vesicle profiling for treatment response prediction in advanced biliary tract cancer

Michele Zanoni, Sara Bandini, Tania Rossi, Michela Cortesi, Camilla Sbrighi, Martina Valgiusti, Alessandra Dubini, Giuliano La Barba, Paolo Di Gioia, Alessandro Cucchetti, Chiara Gallio, Alessandro Bittoni, Luca Esposito, Alessandro Passardi, Giorgio Ercolani, Ilario Giovanni Rapposelli, Paola Ulivi

Bile extracellular vesicles contain protein biomarkers for early cholangiocarcinoma diagnosis in primary sclerosing cholangitis

Ainhua Lapitz, Marit M. Grimsrud, Pedro M. Rodrigues, Johannes R. Hov, Mikel Azkargorta, Beatriz Val, Mette Vesterhus, Krzysztof Grzyb, Henrik Mikael Reims, Felix Elortza, Laura Izquierdo-Sánchez, María J. Perugorria, Luis Bujanda, Lars Aabakken, Vemund Paulsen, Tom H. Karlsen, Jesus M. Banales, Trine Folseraas

Upregulated Glycolysis and SLC2A3 Expression in iCCA: Implications for Tumor Aggressiveness and Prognosis

Michela Anna Polidoro, Barbara Franceschini, Flavio Milana, Cristiana Soldani, Luca Lambroia, Roberta Carriero, Alessio Aghemo, Matteo Donadon, Guido Torzilli, Laura Brunelli, Ana Lleo

Cholangiocarcinoma in individuals with chronic liver disease is diagnosed earlier, leading to better prognosis

Laura Izquierdo-Sanchez, Julen Matin-Robles, Angela Lamarca, Adelaida La Casta, Heinz-Josef Klumpen, Arun Valsan, Stephanie Roessler, Chiara Braconi, Leonardo G. da Fonseca, Cristina Dopazo, Trine Folseraas, Bas Groot Koerkamp, Domingo Balderramo, Mariano Ponz-Sarvisé, Javier Díaz Ferrer, Krzysztof Zieniewicz, Zeno Sparchez, Kirsten Utpatel, Markus PeckRadosavljevic, Alejandro Forner, Ylenia Pérez Castaño, Luis Bujanda, Jesus M. Banales

Abstract Title

Unveiling the secrets of real-world use of Zanidatamab in an English biliary tract cancer cohort

Preliminary exploration of activated mast cells in cholangiocarcinoma subtype with fibrotic tumor microenvironment

Clinically effective biliary drainage and systemic therapy rather than intraductal radiofrequency ablation improve overall survival for inoperable perihilar CCA patients: results of the COMBO-RFA randomized clinical trial

Identifying Gaps in Provider Practices and Patient Education of CCA Screening and Surveillance: Results of a Multinational PSC Patient Survey

Artificial intelligence-assisted electrochemical biosensor for urine-based detection of biliary tract cancer via liquid biopsy

Prognostic tissue biomarkers for cholangiocarcinoma after tumor resection: from systematic review and meta-analysis to multicenter international validation

Application of machine learning and molecular docking to the modelling and design of HDAC6/ROCK dual inhibitors with in vitro experimental validation

Authors

Marina I. Crespo-Cruz, Morteza Jalali, John Bridgewater

Nataliya Rohr-Udilova, Rodolfo Bianchini, Matthias Pinter, Michael Trauner

M. State, M.M. Birligea, A.Bengus, E.Dumea, C.Popp, O.Ginghina, I.Pantelimon, C.Puscasu, B.Galateanu, R.B.Mateescu, A.M.Voiosu, T.Voiosu

Stephen J. Rossi, Brian T. Thorsen, Martine Walmsley, Susan O'Dell, Rachel Gomel, Mark Chatterley, Mary P. Vyas

Onur Karaman, Ceren Karaman

Beatriz Val, Ainhoa Lapitz, Tania Pastor-Bonel, Laura Izquierdo-Sanchez, Colm J. O'Rourke, Alejandro Forner, Cedric Coulouarn, Cedric Menard, Giovanni Brandi, Simona Tavolari, Lewis Roberts, Fowsiyo Ahmed, Mohamed A. Mohamed Ali, Rocío I. R. Macías, Vincenzo Cardinale, Jesper B. Andersen, Adelaida La Casta, Luis Bujanda, María J. Perugorria, Raúl Jimenez-Aguero, Jesus M. Banales, Pedro M. Rodrigues

Milan Beljkas, Selma Zukic, Uko Maran, Paola B. Arimondo, Milos Petkovic, Slavica Oljatic, Katarina Nikolic

Abstract Title

Authors

Deciphering the role of PDL1 in shaping the tumor microenvironment in cholangiocarcinoma using a CCA-on-chip platform

Sofia Buzzi, Michela Anna Polidoro, Giulia Montorsi, Cristiana Soldani, Barbara Franceschini, Aurora Gazzillo, Chiara Camisaschi, Antonella Cammarota, Flavio Milana, Paola Occhetta, Guido Torzilli, Marco Rasponi, Ana Lleo

Laser-activated nanoparticles rewire tumor microenvironment enhancing PD-1 blockade and T cell response in cholangiocarcinoma

Mirko Minini, Giulio Avveduto, Sonia Becharef, Marie Meunier-Thaens, Bouchra Lekbaby, Maria Perez-Lazon, Alice Machado, Thomas Guilbert, Julie Lesieur, Gilles Renault, Sara Ceccacci, Ida Chiara Guerrera, Christophe Klein, Rana Bazzi, Stephane Roux, Jonathan Pol, Emmanuel Donnadieu, Florence Gazeau, Laura Fouassier

Identifying Gaps in Provider Practices and Patient Education of Cholangiocarcinoma Screening and Surveillance: Results of a Multinational PSC Patient Survey

Stephen J. Rossi, Brian T. Thorsen, Martine Walmsley, Susan O'Dell, Rachel Gomel, Mark Chatterley, Mary P. Vyas

Investigating the role of a natural compound as a Hedgehog inhibitor in the management of Intrahepatic cholangiocarcinoma

Savino Paradiso, Guido Carpino, Chiara Di Meo, Deborah Quaglio, Lucia Di Marcotullio, Paola Infante, Teresa De Luca, Matteo Franchitto, Bruno Botta, Eugenio Gaudio, Domenico Alvaro, Vincenzo Cardinale

Could the AptLipo-SoroMitoPAC drug delivery system targeted with aptamer CA19-9 be a new drug candidate for intrahepatic cholangiocarcinoma?

Ozge Cevik



Poster Presentations

Abstracts

The following abstracts were chosen by the Selection Committee to be shared as poster presentations.

Abstract Title

Authors (Submitting author is underlined)

The incidence of cholangiocarcinoma is increasing alongside metabolic factors

Elide Gutiérrez, Adelaida La Casta, Ana Landa-Magdalena, Pedro M Rodrigues, Ainhoa Lapitz, Irene Olaizola, Beatriz Coelho do Val, Ignacio Agirre, Tania Pastor, Raúl Jiménez-Agüero, Luis Bujanda, Laura Izquierdo-Sanchez, Jesus M Banales

Electrochemical methods: selectivity and sensitivity by direct determination of nucleic acids in liquid biopsy

Rene Kizek, Luděk Melich, Julia Werle, Matej Fusek, Jakub Podhajsky

Liquid biopsy in bile: a novel approach in cholangiocarcinoma

Javier Rández-Garbayo, Silvia Pinto-Martínez, Patricia De Miguel, Maria Arechederra, Carmen Berasain, Juan J Vila, Matías Ávila, Jesus M. Urman, Maria Rullán

Monocytes undergo dynamic evolutionary changes in response to chemotherapy that affect chemosensitivity in biliary tract cancer cells

Jack Greaves, Francesco Amato, Francesca Vita, Angela Ammirabile, Colin Rae, Sergi Marco, Lynn McGarry, Mikel Ruiz de Gauna, Irene Olaizola, Paula Sanchon-Sanchez, Tamsin Nash, Srikanth Puttagunta, Margaret Henderson, Rosemary Meenan, Sophia Campbell, Karen Allan, Antonia MacMillan, Gregory M Armstrong, Olivia Knight, Valentina Zanuso, Maria Laura Vieri, Raffaella Casolino, Luca Vigano, Patricia Aspichueta, Jesus M Banales, Elisa Lozano, Lorenza Rimassa, Colm J O'Rourke, Jesper B Andersen, Chiara Braconi

KLF15 acts as a tumor suppressor in CCA by inhibiting cell proliferation, migration, and mitochondrial energetic activity

Mireia Tena-Garitaonandia, Nuno A. Palva, Irune Lasá-Elosegi, Paula Olaizola, Ainhoa Lapitz, Beatriz Val, Colm J. O'Rourke, Jesper B. Andersen, Mikel Azkargorta, Felix Elortza, Luis Bujanda, Maria J. Perugorria, Pedro M. Rodrigues, Jesus M. Banales

Using patient profiles in tailoring management of suspected malignant biliary strictures in a tertiary emergency department in Romania: a retrospective study

Savin Ilie-Andreas, Cătălin Victor-Sfarti, Toader Elena, Gheorghe Balan

Abstract Title

Authors

Synthesis and structure characterization of Fe₃O₄@Dextran/Chrysin system for drug delivery in cancer treatment

A. Karimova, H. Shirinova, S. Nuriyeva, L. Gahramanli, A. Mehdiyeva, G. Eyvazova

Hypoxia and mitochondrial modifications: key drivers of cisplatin resistance in testicular cancer

Ivovic, Danica, Kabelikova, Pavlina, Roska, Jan, Holickova, Andrea, Petrova, Ivana, Jurkovicova, Dana

Selective class I histone deacetylases inhibitors derived from ursodeoxycholic acid as a novel treatment strategy for bile duct cancer

Noelia Pastor-Toyos, Francisco Javier Caballero-Camino, Irene Olaizola, Ivan Rivilla, Amanda Guimaraes, Pedro Miguel Rodrigues, Luis Bujanda, Fernando Pedro Cossio, Jesus Maria Banales

Beneficial effect of Lactobacillus rhamnosus treatment attenuates ductular reaction in Mcp1-deficient mice by targeting gut-liver axis crosstalk.

Katarzyna Trzos, Tomasz Hutsch, Anastasiia Koval, Gabriela Machaj, Leidy Alejandra Gonzalez Molano, Jacqueline Rehner, Maximilian Olaf Förster, Marcin Bednarek, Bahtiyar Yilmaz, Magda Pilarczyk-Zurek, Szymon Surma, Joanna Koziel, Marcin Krawczyk, Andreas Keller, Soeren L. Becker, Guillem Ylla, Jolanta Jura, Jerzy Kotlinowski

Investigation of new potential biomarkers of cisplatin resistance in urothelial bladder cancer

Holíčková Andrea, Palacka Patrik, Roška Jan, Makovický Peter, Vallová Miroslava, Bíró Csaba, Orásová Eveline, Obertová Jana, Mardiak Jozef, Kajo Karol, Jurkovičová Dana, Chovanec Miroslav

Using patient-led genetics to identify new therapeutic targets in metastatic cholangiocarcinoma

Paula Olaizola, Mollie L Wilson, Nicholas T Younger, Kostas Gournopoulos, Aleks Rozyczko, Andreea Gradinaru, Kyle Davies, Colm O'Rourke, Jesper B Andersen, Luke Boulter

Clonal and spatial tumor tracing reveals cell-cell dependencies and vulnerabilities in intrahepatic cholangiocarcinoma

Laura Sererols-Viñas, Paula Cantallops-Vilà, Gemma García-Vicién, Claudio Zampato, Carmen I. Cárcamo Giráldez, Marsela Karemani, Daniela Grases, Pau Sancho-Bru, Manel Esteller, Josep Maria Llovet, Anna Moles, Eduard Porta, Silvia Affò

Targeting ferroptosis in cholangiocarcinoma cells

JC David, M Tena-Garitaonandia, A Lapitz, B Val, S Iturbe-Rey, JM Banales, CMP Rodrigues, PM Rodrigues, MB Afonso



Abstract Title

Authors

Charting and targeting frequent interactions in intrahepatic cholangiocarcinoma

Paula Cantallops-Vilà, Claudio Zampato, Quiyan Sun, Laura Sererols Viñas, Gemma García-Vicién, Carmen Cárcamo Giráldez, Miguel Torres-Martín, Giancarlo Castellano, Pau Sancho Bru, Alejandro Forner, Daniela Grases, Manel Esteller, Josep Maria Llovet, Daniela Sia, Robert F Schwabe, Eduard Porta, Silvia Affò

Immunosuppressive role of cancer-associated fibroblasts in intrahepatic cholangiocarcinoma

Gemma García-Vicién, Paula Cantallops-Vilà, Laura Sererols-Viñas, Carmen I. Cárcamo-Giráldez, Claudio Zampato, Pau Sancho-Bru, Daniela Grases, Manel Esteller, Roser Pinyol, Josep Maria Llovet, Alejandro Forner, Robert Schwabe, Eduard Porta, Silvia Affò

Scavenger receptor MARCO is associated with an immunosuppressive microenvironment and tumor progression in intrahepatic cholangiocarcinoma

Maider Huici-Izagirre, Aloña Agirre-Lizaso, Colm O'Rourke, Josu Urretabizkaia-Garmendia, Ibone Labiano, Ekaterina Zhuravleva, Ana Korosec, Diego Calvisi, Sumera I. Ilyas, Joke Mm Den Haan, Patricia Aspichueta, Elizabeth Hijona, Adelaida La Casta, Raul Jimenez-Aguero, Jesper Andersen, Gernot Schabbauer, Luis Bujanda, Pedro Rodrigues, Omar Sharif, Jesus M Banales, Maria Jesus Perugorria

New platinum derivatives selectively cause double-strand DNA breaks and death in naïve and cisplatin-resistant cholangiocarcinomas

Irene Olaizola, Mikel Odriozola-Gimeno, Paula Olaizola, Francisco J. Caballero-Camino, Noelia Pastor-Toyos, Mireia Tena-Garitaonandia, Ainhoa Lapitz, Beatriz Val, Amanda R. Guimaraes, Maitane Asensio, Maider Huici-Izagirre, Colin Rae, David de Sancho, Xabier Lopez, Pedro M. Rodrigues, Elisa Herraiz, Oscar Briz, Laura Izquierdo-Sanchez, Aitziber Eleta-Lopez, Alexander M. Bittner, Ana Martinez-Amesti, Teresa Miranda, Sumera I. Ilyas, Chiara Braconi, Maria J. Perugorria, Luis Bujanda, Iván Rivilla, Jose J.G. Marin, Fernando P. Cossio, Jesus M. Banales

In vitro evaluation of cytotoxic effects of berberine, loaded in lipid nanoparticles, in cholangiocarcinoma cell

Martin Manov, Kevin Delgado Calvo, Elisa Lozano Esteban, Rocío Rodríguez Macías, Jose Juan Garcia Marin, Yordan Yordanov, Denitsa Stefanova, Marta Slavkova, Virginia Tzankova



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