

Marta Sánchez-Carbayo Martín, Ikerbasque Research Professor

Translational Oncology Lab, Lucio Lascaray Ikerunea

Title: Translational approaches in bladder cancer: from –omic signatures to individual candidates.

Our research aims to characterize molecular mechanisms taking place in bladder cancer pathogenesis, and to translate the information of such analyses into biomarker tools that would improve the clinical management of bladder cancer patients. Our experimental strategy starts by integrating the information from the molecular characterization of bladder tumors using high-throughput approaches at the DNA, RNA and protein levels. Subsequent studies are designed: a) to understand how selected identified targets contribute to tumorigenesis and cancer progression; and b) to translate such information into multiplexed biomarkers using tissue (for disease stratification and outcome prediction) and body fluids (for early diagnosis and follow-up). More specifically, the major techniques we are currently investing on are epigenetic and proteomic approaches. Both are applied for identifying and validating individual and multiplexed biomarkers in clinical specimens, while proteomic approaches are additionally exploited for understanding molecular pathways by which genes of our interest (myopodin and KiSS-1, and others) are involved in bladder cancer. Our biomarker studies aim to address the four major clinical needs in bladder cancer: diagnosis, surveillance, progression into invasive and metastatic disease, and predict therapeutic response to the Bacille of Calmette-Guerin and cisplatin combinations.

Personal biography

Marta Sánchez-Carbayo was born in Salamanca and obtained her Bachelor degree in Pharmacy at the *Universidad de Salamanca* in 1992, and Optics at the *Universidad de Barcelona* in 1993. From 1994 to 1997 she carried out her FIR residency in Clinical Chemistry at the *Hospital General Universitario*, Alicante, and her PhD simultaneously (1995-1998) with honours at the *Universidad Miguel Hernández*, Alicante.

She then continued her work on tumour markers in bladder cancer at the *Hospital Universitario de Salamanca* (1998-1999), supported by a Postdoctoral Award from the *Asociación Española contra el Cáncer* (AECC). In 1999, she joined C. Cordon-Cardo's laboratory in the Division of Molecular Pathology at the Memorial Sloan-Kettering Cancer Center (MSKCC), New York (USA), with a Postdoctoral Fellowship from the *Fundación Ramón Areces*.

Despite receiving a *Ramón y Cajal* Award in 2001, she stayed in New York as Research Associate at MSKCC to further pursue ongoing studies in bladder cancer. She joined the CNIO in January 2006 as Junior Group Leader of the Tumour Markers Group. Awarded as an Ikerbasque Research Professor in June 2013, she joined the CIC bioGUNE. In April 2015, she moved to the

University of the Basque Country to lead the Laboratory of Translational Oncology at the Lucio Lascaray Research Center.