B·DEBATE International Center for Scientific Debate BARCELONA

CRG Centre for Genomic Regulation

CRISTINA CARDOSO

CV

PARTICIPANT AT:

CODING AND NON-CODING FUNCTIONS OF THE GENOME
BARCELONA CONFERENCE ON EPIGENETICS AND CANCER

October, 29th-30th, 2015, Barcelona

Cristina Cardoso, Full Professor for Cell Biology and Epigenetics, Department of Biology, Technische Universität Darmstadt, Germany

M. Cristina Cardoso studied Biology at the University of Lisbon (Portugal) and did her post-doctoral training at the Harvard Medical School (Boston, USA) where she worked on cell cycle regulation during terminal differentiation and functional organization of the mammalian nucleus. She then became a group leader at the Max Delbrück Center for Molecular Medicine (Berlin, Germany) and since 2008 she is a Professor for Cell Biology and Epigenetics at the Department of Biology of the Technische Universität Darmstadt (Germany). She is a member of the American and German cell biology societies and the German society for biochemistry and molecular biology. Her main research area is the cell biology of the mammalian (epi)genome. She is also interested in developing methods for the intracellular delivery of peptides and proteins and studying protein-protein interactions in living cells

B·DEBATE IS AN INITIATIVE OF:
biocat "la Caixa" Foundation

B·DEBATE International Center for Scientific Debate BARCELONA

CRG Centre for Genomic Regulation

CRISTINA CARDOSO

ABSTRACT

PARTICIPANT AT:

CODING AND NON-CODING FUNCTIONS OF THE GENOME
BARCELONA CONFERENCE ON EPIGENETICS AND CANCER

October, 29th-30th, 2015, Barcelona

Cristina Cardoso, Full Professor for Cell Biology and Epigenetics, Department of Biology, Technische Universität Darmstadt, Germany

Methyl-CpG Binging Domain Proteins: Guardians of the Epigenome

All members of the Methyl-CpG-binding Domain (MBD) protein family, except for MBD3, have been described to bind with high affinity to single methyl-CpG dinucleotides, thereby silencing gene expression and dampening transcriptional noise of highly methylated, repetitive elements. In contrast, Ten-Eleven-Translocation (TET) proteins were shown to catalyze the conversion of 5mC to 5hmC, 5fC and 5caC in an iterative, Fe(II)-and oxoglutarate-dependent oxidation reaction, which is followed by the erasure of the repressing epigenetic mark. In this context, we aimed to elucidate the interplay of the MBD protein family and the recently described TET-mediated, active demethylation process. To this end, we quantified and compared global levels of 5mC and its derivatives, transcriptional level, genomic stability and chromatin structure in human and murine cells as physiological consequences of 5mC elimination. Moreover, we extended these analyses to the loss of function of the X-linked MeCP2 gene, which causes Rett syndrome, a debilitating neurological disorder.

B·DEBATE IS AN INITIATIVE OF:

biocat "la Caixa" Foundation