DOCTORAL CANDIDATE:	Ignacio Cuervo
DEGREE:	Philosophiae Doctor
FACULTY:	Faculty of Mathematics and Natural Sciences
DEPARTMENT:	Department of Biosciences
AREA OF EXPERTISE:	Molecular biology
SUPERVISORS:	Ragnhild Eskeland, Odd Stokke Gabrielsen
DATE OF DISPUTATION:	29th of April 2019
DISSERTATION TITLE:	*Unravelling transcriptional regulation through chromatin interacting proteins and SUMOylation* *A functional study of FOXA1 SUMOylation, gene regulation through chromatin remodeller CHD3 and SUMO-protease SENP1 interaction and the development of a single gene locus purification system*

In this work Ignacio Cuervo and co-workers have studied different aspects of the transcriptional regulating processes implicated in embryonic stem cell differentiation and in the regulation and dysregulation of cancer cells.

The first experimental study explored a method for the study of transcription of the pluripotency gene *Nanog* in embryonic stem cells. The design opens up for identifying known and unknown proteins associated with the regulation of *Nanog* in an active and inactive state by mass spectrometry.

This thesis also studied the role of SUMOylation of a transcription factor, FOXA1, involved in prostate cancer regulation. Cuervo and collaborators identified several factors that have a decreased interaction when FOXA1 is SUMOylated, as STAT3, a transcription factor regulating metastasis progression and cell survival in cancer. This novel link between FOXA1 and the differential interaction depending on SUMOylation could open for new inhibitor studies in prostate cancer.

Finally, Cuervo and co-workers identified a novel function of SENP1 affecting chromatin accessibility through a novel interaction partner CHD3. This study revealed an unexplored link with deSUMOylation, chromatin remodelling, CTCF and SUMO regulation.