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A NEW PROTEIN INTERACTION OF THE SETD1A METHYLTRANSFERASE COMPLEX: LINKING EPIGENETIC REGULATION TO THE DNA DAMAGE RESPONSE

[1]Manal Alsulami, [1*]Nayla Munawar, and [3]Gerard Cagney

[1,3]Conway Institute of Bimolecular and Biomedical Research, University College Dublin, Ireland.
[1*]Department of Biochemistry, University of Agriculture, Faisalabad, Pakistan

SETD1A is a component of an histone methyltransferase assembly, analogous to the S. cerevisiae Set1/COMPASS complex. In mammalian cells, SET1/MLL histone methyltransferase (HMT) complexes methylate H3K4, resulting in an epigenetic mark generally associated with increased transcription. While the SET domain-containing proteins are believed to be non-redundant, the SET1/MLL complexes contain shared subunits such as WDR5 (WD repeat domain 5), RBBP5 (Retinoblastoma-binding protein 5), ASH2L (Absent, small or homeotic)-like), and HCF1 (host cell factor 1), as well as factors that may be unique to specific complex isoforms. Defects in SETD1A have been linked to a number of human diseases, including cancer and schizophrenia. To further investigate the role of SETD1A, we mapped the physical interactions of the protein under endogenous conditions in two cell lines (HEK and NT2). We were able to confirme the identity of known interactors within the SETD1A-complex and validated the interaction of a new interactor, Rad18. Rad18 is a ubiquitin ligase involved in DNA repair pathways. Size exclusion chromatography was used to confirm that the interaction with Rad18 occurs in an distinct complex to SETD1A-complex, and are currently investigating function links between SET1A and DNA repair.

Biography

Manal has completed her Master on 2014 from California State University Dominguez Hills and currentlry she is enrolled for Ph.D programme at University College Dublin (UCD). She will graduate on April 2019. She awarded a prize for the best oral presentation on May 2016 in the Research Day at UCD. She is planning to publish her thesis sooner.

manal.alsulami@ucdconnect.ie