

Negotiating DNA replication/repair with chromatin

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The eukaryotic chromosome is tightly packaged into chromatin, and as such, DNA replication/repair must take place within this context. My laboratory studies regulatory mechanisms of chromatin structure and genome stability, centred on the regulation and function of crosstalk between histone H2B ubiquitylation (H2Bub) and H3K4 methylation (H3K4me). The regulatory axis is highly conserved, and its mis-regulation has been implicated in human diseases. I will discuss our recent findings that suggest molecular mechanisms by which H3K4me contributes to faithful DNA replication, thus promotes genome stability.