Tumour suppressive mechanisms in the control of genome stability

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The stability of genomic information is maintained by the mechanisms that control genome duplication, repair and segregation, which act in concert to suppress somatic mutation and carcinogenesis. These mechanisms exhibit remarkable interconnectivity, redundancy and non-linearity that challenge our fundamental understanding of their operation, as well as our ability to manipulate them for therapeutic purposes. I will discuss insights into the molecular and cellular organization of cancer suppressor mechanisms controlling genome stability that are emerging from ongoing work in our laboratory, with a particular emphasis on approaches in imaging and chemical biology that we are using to address this challenge.