

## **The DNA damage checkpoint of fission yeast responds to microtubule stress.**

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DNA structure checkpoint pathways facilitate detection and repair of damaged DNA in eukaryotes. We use fission yeast (*Schizosaccharomyces pombe*) to study these checkpoint pathways. The evolutionarily conserved Rad3/Rad26 complex of fission yeast is central to these pathways, and loss of either *rad3<sup>+</sup>* or *rad26<sup>+</sup>* confers sensitivity to genotoxic agents. Interestingly, loss of *rad3<sup>+</sup>* or *rad26<sup>+</sup>* also confers sensitivity to microtubule-destabilizing agents such as Carbendazim (MBC). Furthermore, Rad26 specifically responds to microtubule-destabilizing conditions, as cytoplasmic accumulation of Rad26-GFP occurred during treatment with MBC but not during treatments with genotoxins. Here, we demonstrate that this MBC-dependent cytoplasmic accumulation of Rad26-GFP is governed by a nuclear export pathway. We also identified a putative nuclear export signal on Rad26 that, when mutated, conferred growth defects on media containing MBC but not on media containing genotoxic agents. Therefore, we have constructed an allele of *rad26<sup>+</sup>* that genetically separates the microtubule stress response from the genotoxin response of this conserved checkpoint protein. We are currently characterizing this allele and hope to report the role(s) that Rad26 plays during microtubule stress.