Institut Européen de Chimie et Biologie

I E C B

DNA damage checkpoints and genome stability in Drosophila melanogaster

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In order to further understand the mechanisms involved in regulating genome stability, we overtook a screen to identify new genes. We looked for important actors by searching for mutants presenting synthetic lethality with the major DNA damage checkpoint regulator ATR, named mei-41 in Drosophila. Characterization and mapping of the selected mutation will be presented. The gene identified is implied in the Aicardi-Goutieres syndrome (AGS), a genetic disorder which resembles congenital infection of the brain. Five genes have been identified for AGS which all encode intracellular nucleases. Their cellular functions however are not well defined. I will present the data in fly and propose the different hypothesis that could explain the phenotypes observed.