Evaluation of PhD thesis written by Patrick von Morgen.

The title of the thesis: Regulation of the DNA damage response by R2TP mediated MRN complex assembly and control of 53BP1 localization.

Author of the thesis is interested in DNA repair processes and their regulation. He showed that R2TP complex is functionally important for stability of MRN complex that it plays an important role in repair of double strand breaks. Authors also published that nuclear localization of 53BP1 protein, playing a role during non-homologous end joining (NHEJ), is regulated via post-translation modifications of this protein. In general, Patrick van Morgen revealed a new characteristics of how MRN complex and 53BP1 regulate DNA repair. I highly appreciate his western blot results published in Oncogene paper. This author also wrote a summarizing article dealing with a function of R2TP complex in response to cellular stress. Student as the author of 3 scientific papers, published in Oncogene, Frontiers in Genetics and the Cell Cycle. One manuscript describing a function and localization of 53BP1 protein in the cell nucleus is enclosed. This scientometric background is sufficient for defense of Ph.D. thesis. I have only one question to the author: please, show in a detail (enlarge images from the last manuscript) nuclear arrangement of 53BP1-positive DNA lesions when appear spontaneously or after cell irradiation or treatment by DNA damaging agents. What is known about arrangement and compartmentalization of 53BP1, γH2AX, NBS1 or BRCA1 in DNA damage foci?

I recommend this thesis for defense and granting of the Doctorate degree, PhD.

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