

ANNOUNCEMENT for a MASTER PROJECT

in the *Westerlund Lab*

Duration: min 6-12 max months

Start: fall 2015 or spring 2016

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Characterizing DNA damage in patients undergoing radiotherapy at Sahlgrenska

This project is a close collaboration between the Westerlund group at Chalmers and professor/senior physician Ola Hammarsten at Sahlgrenska University hospital. The goal is to develop simple assays to investigate the response of patients to radiation therapy. Different patients respond differently to radiotherapy. This means that some patients are underdosed while others have severe side-effects. If the efficiency of the therapy could be easily assessed, for example in a blood sample, it would be possible to tailor the treatment for each patient.

The Westerlund lab has set up an assay to detect damages along single DNA molecules that in this project will be used to quantify DNA damage in lymphocytes from patients undergoing radiotherapy. The project involves extraction of DNA from lymphocytes, labeling of DNA and imaging of DNA using fluorescence microscopy.

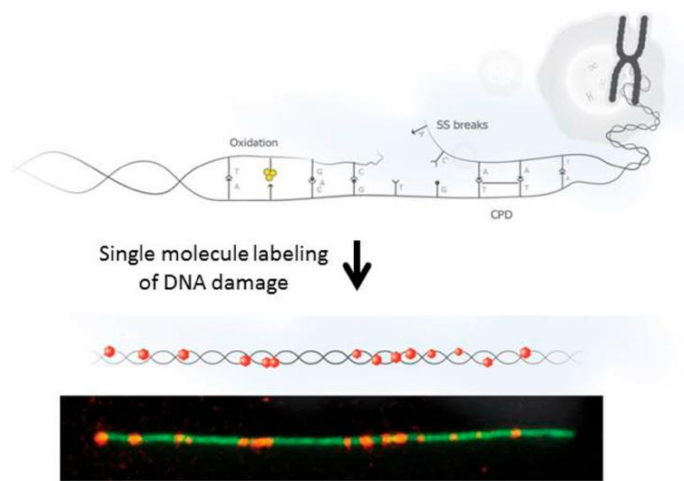


Figure 4. Schematic of assay for detecting single strand damage developed by Zirkin et al.^[24] An enzymatic cocktail that repairs single strand damage on DNA is added to damaged DNA together with fluorescently labeled nucleotides. The nucleotides are incorporated at the damage sites and visualized on single DNA molecules stretched on glass surfaces

References

S. Zirkin, S. Fishman, H. Sharim, Y. Michaeli, J. Don, Y. Ebenstein, *J. Am. Chem. Soc.* **2014**, *136*, 7771–7776.