Stellingen behorend bij het proefschrift:

Biological and functional analysis of the ATR checkpoint pathway

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1. DNA damage-induced nuclear foci increase the chance of meeting the right partner under the right circumstances (*Bekker-Jensen et al. JCB 2006 and this thesis*).

2. The highly dynamic nature of DNA damage-induced foci facilitates the recruitment of new molecules to ensure activation of the entire pool of proteins (*van Veelen et al. Mut Res 2005, Smits et al. 2006 and this thesis*).

3. The ATR-Chk1 pathway can respond to various types of genotoxic stress through cell cycle-dependent processing of DNA lesions into common DNA intermediates (*this thesis*)

4. In contrast to G1 and S phase of the cell cycle, the UV-induced DNA damage response is differentially regulated in G2 cells and does not seem to be dependent on ATR-mediated checkpoint signaling (*this thesis*).

5. Post-translational modifications of DNA damage response proteins contribute to checkpoint maintenance (*Wang et al. Mol Cell 2006, Fu et al. Cell 2008 and this thesis*).

6. DNA damage present in G2 phase below a certain threshold do not properly activate the checkpoint; therefore cells are still able to divide even in the presence of a considerable amount of DNA breaks (*Torres-Rosell et al. Science 2007 and Deckbar et al. JCB 2007*).

7. In response to genotoxic stress chromatin-remodelers make the DNA more accessible for damage sensor proteins and thereby facilitate immediate DNA repair (*Huertas et al. Epigenetics 2009*).

8. The phosphorylation of H2AX in response to DNA damage was suggested to be a universal marker for DNA lesions. If it is, it is of insignificant importance since H2AX knockout mice only show a relatively mild phenotype (*Celeste et al. Science 2002*).

9. Genome stability is governed by many more cellular processes than generally thought of and anticipated (*Paulsen et al. Mol Cell 2009*).

10. Cancer therapy success seems to be greatly dependent on the tumors genetic characteristics and therefore treatments must be performed on the basis of the tumors unique 'genetic barcode' (van 't Veer et al. Nature 2002).

11. Creative people are sometimes seen as pretentious, that is why they are criticized beneath all contempt (*Ferran Adrià, Chef de cuisine, El Bulli*).