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Universiteit Leiden



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**Title:** Nucleotide excision repair in aging and cancer

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# Propositions

Belonging to the thesis: "Nucleotide Excision Repair in Aging & Cancer"

1. XPC is involved in the prevention and/or removal of oxidative DNA damage (this thesis)
2. DNA damage can lead to the selection for a functional p53 isoform by introducing N-terminal nonsense mutations in the *Trp53* gene (this thesis)
3. The use of DNA repair deficient mouse models in carcinogenicity test strategies can have a substantial beneficial impact on risk assessment plus on the 3R's of Russell and Burch (this thesis)
4. DNA has a paradoxical nature; it is the key to life, but at the same time it will be the key to death (this thesis)
5. Genome instability is clearly an enabling characteristic that is causally associated with the acquisition of cancer hallmark capabilities (Hanahan D and Weinberg RA, Hallmarks of cancer: the next generation, *Cell*. 2011 Mar 4;144(5):646-74)
6. The development of cancer and the process of aging can be delayed by reducing the load of DNA damage — by avoiding or limiting exposure to exogenous genotoxins and by suppressing metabolism — thereby producing fewer reactive species (Hoeijmakers JHJ, DNA Damage, Aging, and Cancer, *N Engl J Med* 2009; 361:1475-1485)
7. The interplay between p53 isoforms and p53 on specific targets may play a major role in controlling the activity of p53-related proteins (Bourdon JC, p53 isoforms can regulate p53 transcriptional activity, *Genes & Dev*. 2005. 19: 2122-2137)
8. The capacity to blunder slightly is the real marvel of DNA. Without this special attribute, we would still be anaerobic bacteria and there would be no music (Lewis Thomas, *The Medusa & The Snail*, 1974)
9. You don't take a photograph, you make it (Ansel Adams)
10. Music and rhythm find their way into the secret places of the soul (Plato)
11. The world is a book, and those who do not travel read only a page (St. Augustine)