

Ionizing Radiation, DNA Damage Response and Cancer Therapy Resistance

1. Repetitive treatment with ionizing radiation leads to resistance in the beginning of treatment. (*This thesis*)
2. Redundancy between DNA repair pathways is causative for acquired radiotherapy resistance in cancer. (*This thesis*)
3. Increased energy metabolism contributes to acquired radiotherapy resistance. (*This thesis*)
4. Citrullination is a novel post-translational modification involved in DNA repair. (*This thesis*)
5. RNA-binding proteins add another level of regulation in homologous recombination. (*This thesis*)
6. A correlation between the DNA damage response and radiotherapy resistance is often shown in literature, but supporting functional assays are frequently lacking.
7. Next generation sequencing is a powerful tool to identify new genes and processes but its impact will only be strengthened with the addition of functional analyses.
8. Therapy-resistant cancer is Darwinian evolution on cellular level. – *R.J. Gillies et al, Nature Reviews Cancer (2012)*
9. Multidisciplinary collaborations are important in solving complex problems such as cancer. However, basic investigators in different fields, much less clinicians and physicians, rarely interact. – *U.S. Institute of Medicine advise to U.S. Department of Defence (1993)*
10. The most worrying distortions that scientific knowledge might endure is the loss of negative data. – *D. Fanelli, Scientometrics (2012)*
11. Success is not final, failure is not fatal: it is the courage to continue that counts. – *Winston Churchill*