

# Genome integrity and DNA repair in cancer

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## Overview

Cellular responses to naturally formed genomic damage, and the relationship of defects in these responses to genetically inherited disorders associated with cancer predisposition, neurological deficits and premature aging would be discussed. Understanding the contributions of endogenous DNA damage to human disease, in particular cancer, is the major theme of this Course. Recently, there has been an explosion of information on cancer genomes; the development of novel technologies for genome editing; visualizing DNA repair complexes; the role for RNA in genome stability; novel mechanisms of DNA repair and epigenetics; and the role of aging and environmental exposures in genome stability. These aspects will be highlighted as the frontier of DNA repair.

Professor Gianluca Tell, from the University of Udine in Italy, is an internationally acclaimed molecular biologist with more than twenty years of experience and interdisciplinary research on Gene Expression and DNA damage responses. Genome integrity and DNA repair in cancer

The primary objectives of the course are as follows:

- Familiarising the participants with the molecular aspects of the main DNA repair pathways in human cells and the basics of DDR in normal and cancer cells.
- Providing insights to the participants as to the novel role of ribonucleotides embedded in DNA in activating the DDR.
- Providing insights to the participants as the non-canonical function of DNA repair enzymes and the novel role of RNA metabolism in regulating the DDR.
- Providing clues on the translational aspects of DNA repair enzymes for designing new approaches for therapeutical applications in cancer treatment

<b>Modules</b>	<b>January 15<sup>th</sup> to 19<sup>th</sup>, 2018</b> Number of participants for the course will be limited to fifty.
<b>You Should Attend If...</b>	You are Post-graduate students, research students, teachers of Biology and Biotechnologies as well as Medical Schools.
<b>Fees</b>	No fees would be charged for attending the course.

## The Faculty



Prof. Gianluca Tell' is currently the head of the Laboratory of Molecular Biology and DNA repair of the Department of Medicine at the University of Udine, Italy. His prevailing interests are the study of molecular mechanisms

of gene expression particularly in the field of redox signalling and cell oxidative stress. He is focusing on some aspects of linking gene expression and DNA repair and its relevance in molecular oncology and cancer. He has contributed significantly in the understanding of the molecular mechanisms, involving the main mammalian Apurinic/Apyrimidinic Endonuclease APE1, in coordinating cellular responses to oxidative stress in different cell models. His background includes molecular and cellular biology as well as biochemistry techniques to characterize the relationship between structure and function of proteins involved in gene expression and DNA repair. He coordinated several research projects granted from Telethon, AIRC, PRIN, ASI and has worked as a Referee for many prestigious International Journals such as Oncogene, Nucleic Acids Research, Proteomics, Cancer Research, Clinical Cancer Research, etc. He is extremely interested in studying the non canonical roles of DNA repair enzymes of the BER pathway, particularly in association with RNA metabolism. He has more than 130 publications in international peer reviewed journals and more than 70 international congress communications concerning control of gene expression during response to oxidative stress.

## Course Co-ordinator

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