Antony Oliver

Genome Damage and Stability Centre, University of Sussex, UK

Email: antony.oliver@sussex.ac.uk

Selected Publication

Ammar AEA, Timinszky G, Arribas-Bosacoma R, Kozlowsk M, Hassa PO, Hassler M, Ladurner AG, Pearl LH, Oliver AW (2012) The zinc-finger domains of PARP1 cooperate to recognize DNA strand breaks. *Nature Structural and Molecular Biology* 19(7):685-692.

Research Aims and Interests

The Cancer Research UK DNA Repair Enzymes group (PIs Antony Oliver, Laurence Pearl) seeks to understand the structural basis for assembly, specificity and regulation of the many multi-protein complexes involved in the recognition, repair, and signaling of DNA damage.

Our studies also provide the means for discovery and development of novel small-molecule inhibitors with application as drugs for the treatment of cancer and other human diseases. Our technique of choice is X-ray crystallography, although we have extensive experience with other structural biology and biophysical techniques; including EM, SAXS, Fluorescence Polarisation, chemical/UV cross-linking. Our research interests are quite broad, encompassing proteins from the mammalian Non-Homologous End-Joining and Homologous Recombination pathways for DNA double-strand break repair (e.g. Ku70/80; LIG4; PALB2); those of the Single-Strand Break Repair pathway (PNKP, XRCC1); 'BRCT-scaffold' proteins at the core of DNA-damage checkpoint signaling and maintenance pathways (TopBP1, 53BP1, MDC1, PTIP); as well as other DNA repair enzymes (TDP2) and complexes (Smc5/6).