Dr Sarah Martin

Barts Cancer Institute
Queen Mary University of London

2011 Winner: CR-UK Future Leaders in Cancer Research

Research Interests

My main research areas are in Cancer Cell Biology and DNA repair mechanisms in the cell.

My research group's main interests are:

- Investigating nuclear and mitochondrial DNA repair as a therapeutic target in cancer, specifically DNA mismatch repair (MMR) because MMR deficiency results in an increased predisposition to cancer.
- Using high-throughput screening of small interfering RNA (siRNA) and compounds to identify new compounds and genes as novel therapeutic targets for MMR deficient disease.
- The role of mitochondrial DNA repair in cancer and as a potential therapeutic target.
- Investigating chemoresistance in MMR deficient cancers
- Using a synthetic lethal approach to identify new therapeutic strategies for the treatment of cancer

Major Funders

- Medical Research Council
- British Lung Foundation
- June Hancock Mesothelioma Research Fund
- Cancer Research UK
- Barts and the London Charity

Contact Details

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Recent Publications

- Parallel high-throughput RNA interference screens identify PINK1 as a potential therapeutic target for the treatment of DNA mismatch repair-deficient cancers. **Martin SA,** Hewish M, Sims D, Lord CJ, Ashworth A. *Cancer Res.* 2011 Mar 1;71(5):1836-48.
- DNA Polymerases as Potential Therapeutic Targets for Cancers Deficient in the DNA Mismatch Repair Proteins, MSH2 or MLH1. **Martin SA**, McCabe N, Mullarkey M, Cummins R, Burgess D.J, Kay E, Lord C.J & Ashworth. A *Cancer Cell.* 2010 Mar 16;17(3):235-48.
- Therapeutic targeting of the DNA mismatch repair pathway. **Martin SA,** Lord CJ, Ashworth A. *Clin Cancer Res.* 2010;16(21):5107-13.
- Mismatch repair deficient colorectal cancer in the era of personalized treatment. Hewish M, Lord CJ, **Martin SA**, Cunningham D, Ashworth A. *Nat Rev Clin Oncol.* 2010;7(4):197-208.
- Methotrexate induces Oxidative DNA Damage and is Selectively Lethal to Cells with Defects in the DNA Mismatch Repair Gene *MSH2.* **Martin SA**, McCarthy A, Barber L.J, Burgess D.J, Lord C.J & Ashworth A. (2009). *EMBO Mol. Med.* 1(6-7): 323-337.
- Synthetic lethal targeting of PTEN mutant cells with PARP inhibitors. Mendes-Pereira AM, **Martin SA,** Brough R, McCarthy A, Taylor JR, Kim JS, Waldman T, Lord CJ, Ashworth A. *EMBO Mol Med*. 2009 Sep;1(6-7):315-22.
- Cellular Commitment for Re-entry to the Cell Cycle after Stalled DNA is determined by Site-specific Phosphorylation of Chk1 and PTEN. **Martin SA**. & Ouchi T. (2008) *Mol Cancer Ther.* 7(8):2509-16.