P071 A genome-wide screen for sensitivity or resistance to the G quadruplex binding porphyrin TMPyP4 in budding yeast

Stephanie Merchan, Stephen Addinall, Conor Lawless, Darren Wilkinson, James Dewar and David Lydall.
Institute for Ageing and Health, Newcastle University, UK.

G-quadruplex DNA structures occur in G rich repeats including at telomeres at the ends of chromosomes. For this reason G-quadruplex inhibitors are being developed as potential anti-cancer therapies. The porphyrin TMPyP4 which has been shown to inhibit telomerase activity *in vivo* and interact with G-quadruplex structures in the promoter of the c-Myc gene is one of these inhibitors. Numerous potential G-quadruplex forming sequences have been identified in the human genome. In budding yeast Saccharomyces cerevisiae the role of G rich sequences are also found for example at telomeres. We have carried out a high-throughput and systematic screen to study growth of yeast gene deletion mutants in presence of 100 μM TMPyP4. We have identified gene deletions that lead to either increased or decreased growth in the presence of TMPyP4. We will present our latest results at this meeting.