

Synthesis and Evaluation of DNA Interactive Ligands



Toni Brown

Research Associate and Research Director for the Dean of Natural Sciences

Chemistry

tbrown@hope.edu

B.Sc. University of Sunderland, England, UK, 1999.
 Ph.D. University of Bradford, England, UK, 2004.
 Postdoctoral Research Fellow, Furman University, Greenville, SC, 2004-2005.
 Area of expertise: Synthetic medicinal chemistry, cancer research, biological and biophysical chemistry.

Selected Recent Publications and Presentations:

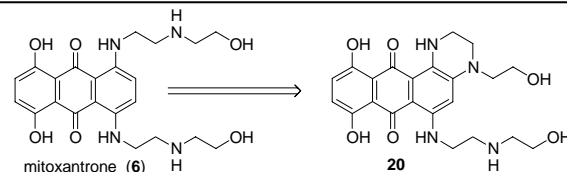
1. Brown, T; *et al.*, **2006**, *Bioorg. Med. Chem.*, *in press*.
2. Mackay, H, Brown, T, Lee, M., **2006**, accepted Sept 2006.
3. Brown, T; *et al.*, **2006**, Review, accepted Sept 2006.
4. Brown, T; *et al.*, 231st ACS Meeting, Atlanta, March, **2006**.
5. Invited speakers: Lee, M; Brown, T; Mackay, H, **2005**, Hope College.
6. Pati H.N., *et al.*, **2005**, *Med. Chem. Res.* 14, (1), 19-25.
7. LeBlanc, R., *et al.*, *Bioorg. Med. Chem.* **2005**, 13, 6025-6034.
8. Brown, T. *et al.*, 229th ACS Meeting, San Diego, March **2005**.

Ph. D. Related Publications and Presentations:

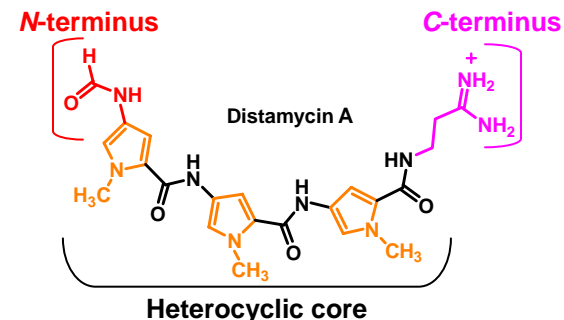
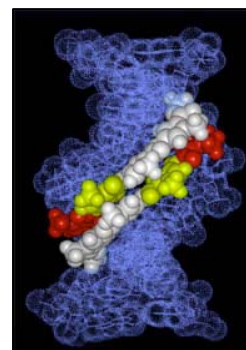
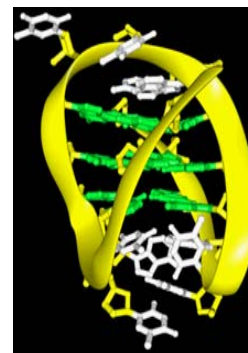
1. **Invited speaker:** 17th Sept **2003**, Y.C.R. scientific meeting, Leeds, UK.
2. **Brown T.** *et al.*, *J. Pharm. Pharmacol.*, **2003**, sup. 38. BPC, Harrogate, UK.
3. **Brown T.** *et al.*, *Eur. J. Cancer*, **2003**, 38, 403, 7. BCRM meeting, Bournemouth, UK.
4. **Invited speaker:** 17th Feb **2003**, Tom Connors Cancer Research Centre, Bradford, UK.
5. **Brown T.**, *et al.*, *Eur. J. Cancer*, **2002**, 38; 403, 7. EORTC-NCI-AACR, Frankfurt, Germany.

Acknowledgments:

Prof. Terry Jenkins and Drs. Don Cairns & Roz Anderson and the NSF.



Antraquinones (e.g. **8**) were designed to target duplex DNA in anti-cancer therapy. Cyclised derivatives (e.g. **20**) should target tetraplex DNA and indirectly inhibit telomerase, an enzyme present in over 90% of tumors.



Polyamides (e.g. Distamycin A) recognize specific sequences of duplex DNA and bind in the minor groove as antiparallel stacked dimers. By altering the heterocyclic core, and the *N*- and *C*-termini of these molecules, we hope to design and synthesize more selective and specific DNA binders.

