



Moses Lee

Dean of Natural Sciences
and Professor of Chemistry

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Education:

B.S., University of Guelph, Canada, 1983
Ph.D., University of Guelph, 1986

Areas of Expertise:

Organic Chemistry, Synthesis, Biochemistry,
and Medicinal Chemistry

Grants and Awards:

Spirogen Ltd. U.K., "Polyamide-PBD derivatives"

Arnold Beckman Foundation, "Beckman Scholar"

NSF, "Tuning the Thermodynamic and Kinetic Properties of the Binding of Hairpin Polyamides to Their Cognate DNA Sequences, through Incorporation of Intercalating and Threading Agents"

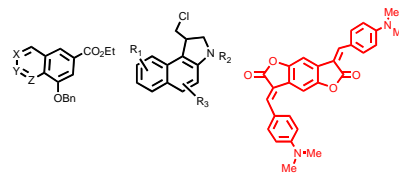
GSK, "Design and Synthesis of Novel H-Pin Polyamides"

Key Publications and Presentations

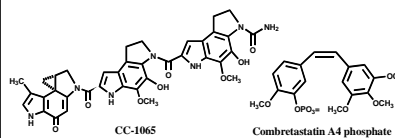
K.L. Buchmueller, S.L. Bailey,* D.A. Matthews,* Z.T. Taherbai,* T. Brown, J. Register,* Z.S. Davis,* C.D. Bruce, B. Nguyen, W.D. Wilson, C. O'Hare, J.A. Hartley, and M. Lee, 2006, Physical and Structural Basis for the Strong Interactions of the -ImPy- Central Pairing Motif in the Polyamide, f-Im-Py-Im. **Biochemistry** **45**, 13551-13565.

B. Purnell*, A. Sato, A. O'Kelley,* C. Price,* K. Summerville,* S. Hudson, C. O'Hare, K. Kiakos, J. A. Hartley, T. Asao and M. Lee, 2006, DNA Interstrand Crosslinking Agents: Synthesis, DNA Interactions, and Cytotoxicity of Dimeric Achiral *seco*-amino-CBI and Conjugates of Achiral *seco*-Amino-CBI with Pyrrolobenzodiazepine (PBD). **Bioorg. Med. Chem. Lett.** **16**, 5677-5681. (*Undergraduates)

Synthetic Methodology



Medicinal Chemistry - Anticancer Drugs



- Apoptosis induction
- DNA interactive
- Anti-angiogenesis
- Solid tumor
- Low toxicity
- Drug targeting (ADEPT; ETPT)

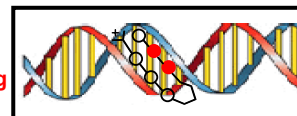


DNA Sequence Specific Recognition

Diagnostics

- Biosensors
- genetic disposition
- abnormal DNA
- Homeland security

Engineering



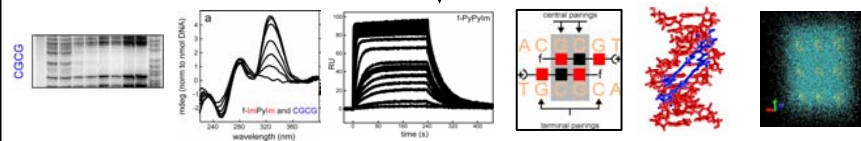
- ### Molecule-DNA Complex
- Sequence specificity
 - Structure and conformation
 - Molecular dynamics

Medicine

- Gene control
- Anticancer drugs
- resistance

Cell & animal biology

Molecular biology, biochemistry, biophysical, computational chemistry



Design, synthesis

