

# Nathan Lack

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## EDUCATION

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UNIVERSITY OF OXFORD

**Doctor of Philosophy, Pharmacology**

*Oct 2005 - Oct 2009*

- Identified, expressed and characterized a hydrolytic enzyme involved in cholesterol metabolism as a novel drug target against *Mycobacterium tuberculosis*.
- Collaborated with laboratories in the United States, Canada and United Kingdom.
- Received the Natural Science and Engineering Research Council of Canada Postgraduate Scholarship with an approximate value of \$80,000.

UNIVERSITY OF BRITISH COLUMBIA

**Bachelor of Science, Microbiology and Immunology**

*Sept 1999 - May 2004*

- Graduated with an overall “A” grade average.

## RESEARCH EXPERIENCE

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VANCOUVER PROSTATE CENTRE, Vancouver, Canada

*Nov 2009 - Present*

**Postdoctoral Fellow**

- Identify and characterized several novel androgen receptor inhibitors using cutting edge *in silico* screening and high-throughput assays.
- Conducted drug metabolism and pre-clinical pharmacokinetics on novel chemical entities.
- Supervised a team of five full time scientific researchers.

ANORMED, Langley, Canada

*May 2003 - Jan 2004*

**Pharmacology Assistant**

- Planned, organized and executed pre-clinical toxicology and pharmacokinetic studies.
- Reviewed and edited GLP-toxicology study reports for FDA submission.
- Developed clinical pharmacokinetic/pharmacodynamic models for Plerixafor.

BIOMEDICAL RESEARCH CENTRE, Vancouver, Canada

*Jan 2003 - July 2004*

**Researcher for Professor Wilf Jefferies**

- Investigated TAP-dependant antigen presentation in cancerous cell lines.
- Grew, isolated and purified peptides from human cell lines.

LIFESCIENCE BRITISH COLUMBIA, Vancouver, Canada

*Jan 2002 – May 2003*

**Co-op Student/Scientific Advisor**

- Contributed to the editing, design and writing of *Biofax*, a biweekly electronic newsletter that highlights recent developments in the biotechnology industry.
- Conducted market research on the international opportunities for local companies.

## TEACHING EXPERIENCE

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UNIVERSITY OF OXFORD, Oxford, United Kingdom

Nov 2005 – Sep 2009

### St. Peters/New/Queens College Tutor

- Taught microbiology, biochemistry and molecular biology to Oxford chemistry, biochemistry and medical students.

NAL TUTORING, Vancouver, Canada

Mar 2004 - May 2005

### Founder and Director

- Created, organized, and ran a tutoring business that taught biochemistry, immunology and medical microbiology to over 800 first and second year students from the University of British Columbia.

## PUBLICATIONS (LAST THREE YEARS)

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Axerio-Cilies, P\*, **Lack, NA\***, Shashi Nayana, MR, Chan, KH, Yeung, A, LeBlanc, E, Guns, E, Rennie, P and Cherkasov, A. (2011) *Inhibitors of androgen receptor activation function-2 (AF2) site identified through virtual screening*. J Med Chem. In Press. \* Co-authors

Abuhammad, A, **Lack, N**, Schweichler, J, Staunton, D, Sim, RB, Sim, E. (2011) *Improvement of the expression and purification of Mycobacterium tuberculosis arylamine N-acetyltransferase (TBNAT) a potential target for novel anti-tubercular agents*. Protein Expr Purif. Epub Jul 13

Abdelbaqi, K, **Lack, NA**, Guns, E, Kotha, L, Safe, SJ and Sanderson, T. (2011) *Antiandrogenic and growth inhibitory effects of ring-substituted analogs of 3,3'-diindolylmethane (ring-DIMs) in hormone-responsive LNCaP human prostate cancer cells*. Prostate. Epub Feb 14.

**Lack, NA**, Yam, KC, Lowe, ED, Horsman, GP, Owen, R, Sim, E, Eltis, LD. (2010) *Characterization of a C-C hydrolase from Mycobacterium tuberculosis involved in cholesterol metabolism*. J Biol Chem. Jan; 285(1): 434-43.

Carroll, MV, **Lack, N**, Sim, E, Sim, RB. (2009) *Multiple routes of complement activation by Mycobacterium bovis BCG*. Mol Immuno. Oct; 46(16): 3367-78.

**Lack, NA**, Kawamura, A, Fullam, E, Laurieri, N, Beard, S, Russell, AJ, Evangelopoulos, D, Westwood, I, Sim, E. (2009) *Temperature stability of proteins essential for the intracellular survival of Mycobacterium tuberculosis*. Biochem J. Mar; 418(2): 369-78.

Sim, E, **Lack, N**, Wang, CJ, Long, H, Westwood, I, Fullam, E, Kawamura A. (2008) *Arylamine N-acetyltransferases: structural and functional implications of polymorphisms*. Toxicology. Dec; 254(3): 170-83.

**Lack, N**, Lowe, ED, Liu, J, Eltis, LD, Noble, ME, Sim, E, Westwood, IM. (2008) *Structure of HsaD, a steroid-degrading hydrolase, from Mycobacterium tuberculosis*. Acta Crystallogr Sect F Struct Biol Cyst Commun. Jan; 64(Pt 1): 2-7.

Sim, E, Sandy, J, Evangelopoulos, D, Fullam, E, Bhakta, S, Westwood, I, Krylova, A, **Lack, N**, Noble, M. (2008) *Arylamine N-acetyltransferases in mycobacteria*. Curr Drug Metab. Jul; 9(6): 510-9.

## SELECTED CONFERENCE PROCEEDINGS

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**Lack, NA**, Tavassoli, P, Axerio, P, LeBlanc, E, Guns, E, Cherkasov, A and Rennie, P. *Identification of novel anti-androgens that target the BF3 site of the androgen receptor*. International ISSX meeting, Istanbul, September 2010

**Lack, NA**, Evangelopoulos, D, Bhakta, S, Eltis, LD, Abuhammad, A, Fullam, E, Lowe, E and Sim, E. *Genes and proteins of the nat/hsaD gene cluster and their role in cholesterol metabolism*. Summer meeting of the Acid Fast Club, Edinburgh, July 2009

**Lack, NA**, Llyod-Evans, E, Lowe, ED, Kalscheuer, R, Deng, JY, Eltis, LD, Platt, F, Jacobs, WR Jr and Sim, E. *Investigation of HsaD from Mycobacterium tuberculosis*. 7<sup>th</sup> International Conference on the Pathogenesis of Mycobacterial Infections, Stockholm, July 2008.

## PATENTS

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Small molecule inhibitors of the Androgen Receptor, UBC project 09-089

A cell permeant and potent inhibitor of IMPase, Application Number 0922058.3

The use of misglut for the treatment of tuberculosis, Isis project 3928

## PROFESSIONAL ACTIVITIES

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PRE-CLINICAL NETWORK OF BRITISH COLUMBIA– **Founding Member** Jan 2002 - July 2003

Founded and steered the “Pre-clinical Network of British Columbia”, an organization of over 200 industrial scientists. The association was created for scientists to meet and discuss recent technical developments and to offer scientific training courses.

DEPARTMENT OF PHARMACOLOGY– **Graduate Representative** Oct 2006 - Oct 2007

Attended departmental board meetings as the departmental graduate student representative.

INTERNATIONAL JOURNAL OF MEDICAL CHEMISTRY– **Referee** Feb 2010 - Present

INTERNATIONAL JOURNAL OF MICROBIOLOGY– **Referee** Oct 2007- Present

## PROFESSIONAL SOCIETIES

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- International Society for the Study of Xenobiotics
- British Society of Pharmacology
- Lifescience British Columbia

## AWARDS AND HONOURS

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- Michael Smith Foundation for Health Research Postdoctoral Fellowship Award
- VCHRI Rising Star Scientific Award
- Lorne Sullivan Best Basic Science Research Award
- Linacre College Canadian National Scholarship
- NSERC Postgraduate Scholarship
- J. Fred Muir Memorial Scholarship in Science
- British Columbia Government Scholarship.

## PERSONAL INFORMATION

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**Citizenship:** Canadian