University of Birmingham

Dr Karl Nightingale PhD

Senior Lecturer

School of Immunity and Infection

Contact details

Telephone **+44 (0)121 414 6833 (tel:+44 121 414 6833)**

Email **k.p.nightingale@bham.ac.uk (mailto:k.p.nightingale@bham.ac.uk)**

College of Medical and Dental Sciences
University of Birmingham
Edgbaston
Birmingham
B15 2TT
UK

About

Karl Nightingale is a senior lecturer and researcher in the Institute of Biomedical Research

Dr Nightingale has published over 20+ research papers, as well as reviews and book chapters in the fields of epigenetic gene regulation. He has received research funding from the Wellcome Trust, Cancer Research UK, and the BBSRC.

Dr Nightingale is the International Foundation Year Lead for the Medical and Biological Sciences, a module leader in both Medical Science (BMedSci) and Medicine (MBChB) programmes, and contributes to a range of UG and PG level courses.

He speaks regularly for Cancer Research UK, and in schools as a STEM Ambassador, and is a member of the University Senate.

Qualifications

- PGcert (LTHE) 2012
- Fellow HEA 2012
- PhD Biochemistry 1992
- BSc (Hons) Biochemistry 1989

Biography

Karl Nightingale studied Biochemistry in Southampton (BSc, 1989), and continued his studies as a Cancer Research campaign funded PhD studentship studying molecular aspects of anti-cancer DNA binding drugs (PhD, 1992).

He performed post-docs at the *National Institutes of Health* (with Alan Wolffeat Bethesda, MD, 1993 - 96) and at the European Molecular Biology Lab (with Peter Becker at Heidelberg, Germany, 1996 - 1999) working on the structural and functional aspects of chromatin before returning to the UK to work at Cambridge Biochemistry Dept (Wellcome Trust Career Development Fellow, 1999 - 2003).

In 2004 Karl joined the University of Birmingham, initially as a Roberts Research Fellow (- 2010), and since then as a lecturer, and senior lecturer. Karl's work continues to focus on the enzymes that modify chromatin and how they are regulated in normal cells

Teaching

Teaching Programmes

- **BSc BMedSci (/undergraduate/courses/med/medical-sci.aspx)**

Module Coordinator (Stem Cells, Differentiation & disease)

- **MRes (/postgraduate/courses/combined/med/health-research.aspx)** (Molecular medicine)

Module coordinator (Stem Cells & regenerative medicine)

- **BSc Biomaterials (/undergraduate/courses/med/biomedical-materials-sci.aspx)**
- **BSc BDS (/undergraduate/courses/med/dental-surgery.aspx)**
- **MBChB (/undergraduate/courses/med/medicine.aspx)**

Postgraduate supervision

Karl supervises PhD and MSc students in the areas of epigenetic gene regulation

Research

Research themes

Epigenetic gene regulation. Interaction with cancer.

Research activity

Histone modification & gene regulation.

Karl has a background in the biochemical reconstitution of chromatin, and has studied the functional and structural impact of chromatin associated proteins and modifications.

Other activities

- STEM Ambassador (Schools science outreach)

Publications

- **Nightingale KP**, Dimitrov S, Reeves R & Wolffe AP (1996) Evidence for a shared structural role for HMG-1 and liker histones B4 and H1 in organising chromatin. *EMBO J.* **15** 548-561
- **Nightingale KP** Wellinger RE, Sogo JM & Becker PB (1998) Histone acetylation facilitates transcription initiation by RNA polymerase II on chromatin templates. *EMBO J.,* **17** 2865-2976
- Clapier C, Langst G, Corona FV, Becker & **Nightingale KP** (2001) The histone tails play a key role in activating the ISWI ATPase and CHRAC mediated chromatin remodelling. *Mol. Cell. Biol.* **21**, 875-883
- **Nightingale KP**, O'Neill L & Turner BM (2006) Histone modifications: Signalling receptors and potential elements of a heritable epigenetic code. *Curr Opin Genet Dev.* **16**:125-36.
- **Nightingale KP**, Gendreizig S, White DA, Bradbury C Hollfelder F & Turner BM (2007) Cross talk between histone modifications in response to HDAC inhibitors: MLL4 links histone acetylation and H3 K4 methylation. *J. Biol. Chem.* **282**: 4408-16
- **Nightingale KP** , Eberharter, A; Mamais, A.; Becker, P. Boyes, J. (2007) Acetylation increases access of remodelling complexes to their nucleosome targets to enhance initiation of V(D)J recombination. *Nucleic Acids Res.* **35** : 6311-21
- Halsall J, Gupta V., O'Neill LP, Turner BM & **Nightingale KP.** (2012) Genes are often sheltered from the global histone hyperacatylation induced by HDAc inhibitors. *PLoS ONE.* **7** : e33453

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