



## Timothy Barkham

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### Research Interests:

- Acinetobacter resistance
- Foodborne *Streptococcus agalactiae*
- Outbreaks, Epidemiology, Diagnostics
- Drug discovery

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## Biography

Dr Barkham studied medicine at St Thomas' Hospital, London, UK: he qualified in 1988. He was certified as a specialist in Clinical Microbiology in 1996. In 1999, after two years at the Hammersmith Hospital, London, he moved to Singapore, where he enjoys a mix of clinical and laboratory medicine, research and teaching, with an adjunct appointment at NUS. His research follows current events presented by an ever-changing microbiological landscape. He is the Programme Director of the Microbiology Residency in Singapore.

## Selected Publications

- Barkham T, Zadoks RN, Azmai MNA, Baker S, Bich VTN, Chalker V, et al. One hypervirulent clone, sequence type 283, accounts for a large proportion of invasive *Streptococcus agalactiae* isolated from humans and diseased tilapia in Southeast Asia. [PLoS Negl Trop Dis. 2019; 13\(6\): e0007421. IF 4.367.](#)
- Young BE, Fong SW, Chan YH, Mak TM, Ang LW... Barkham T, et al. Effects of a major deletion in the SARS-CoV-2 genome on the severity of infection and the inflammatory response: an observational cohort study. [Lancet. 2020; 396\(10251\): 603-611. IF 60.392.](#)
- Thierry Wirth, et al, and the International Consortium for Staphylococcus capitis neonatal sepsis; ESGS Study Group of ESCMID. Niche Specialization and Spread of Staphylococcus Capitis Involved in Neonatal Sepsis. Nature Microbiology 5(5):735-745 01 May 2020. **IF 14.3**
- Mayandi, Venkatesh; Xi, Qingxiao; Goh, Eunice Tze Leng; Koh, Siew Kwan; Jie Toh, Thomas Yong; Barathi, Veluchamy Amutha; Fazil, Mobashar; S. Chalasani, Madhavi Latha; Varadarajan,

Jayasudha; Ting, Darren Shu Jeng; Beuerman, Roger W; Chan, Lai Wah; Barkham, Timothy et al. Rational substitution of  $\epsilon$ -lysine for  $\alpha$ -lysine enhances the cell and membrane selectivity of pore-forming melittin. *J Med Chem.* 2020 9;63(7):3522-3537. PMID: 32175733. **IF 6.205**

- Marimuthu, Kalisvar; Mo, Yin; Ling, Moi Lin; Hernandez-Koutoucheva, Anastasia; Fenlon, Shannon; Bertrand, Denis ; Ang, Brenda; Lye, David; Perencevich, Eli; Ng, Oon Tek; Cooper, Ben; Nagarajan, Niranjana; Chen, Swaine; Barkham, Timothy. Household transmission of carbapenemase-producing Enterobacteriaceae (CaPES-C): A prospective cohort study. *J Antimicrob Chemother* 2021; 76: 1299–1302. PMID: 33417711. **IF 5.439**
- Mohid SA, Biswas K, Won T, Mallela LS, Gucchait A, Butzke L, Sarkar R, Barkham T, Reif B, Leipold E, Roy S, Misra AK, Lakshminarayanan R, Lee D, Bhunia A. Structural insights into the interaction of antifungal peptides and ergosterol containing fungal membrane. *Biochim Biophys Acta Biomembr.* 2022 Oct 1;1864(10):183996. doi:10.1016/j.bbamem.2022.183996 . PMID: 35753394. **IF 4.019**
- Kimberly Kline, Jun-Hong Ch'ng, Mugil Muthu, Kelvin Chong, Jun Jie Wong, Zachary Koh, Daniel Lopez, Artur Matysik, Timothy Barkham, Casandra Tan, Zeus Nair, and Yulan Wang. Heme cross-feeding can augment *Staphylococcus aureus* and *Enterococcus faecalis* dual species biofilms. *ISMEJ* 2022. <https://doi.org/10.1038/s41396-022-01248-1>. **IF 12.284.**
- Jun Jie Wong; Foo Kiong Ho; Pei Yi Choo; Kelvin K.L. Chong; Chee Meng Benjamin Ho; Ramesh Neelakandan; Damien Keogh; Timothy Barkham; John Chen; Chuan Fa Liu; Kimberly A. Kline. *Escherichia coli* BarA-UvrY regulates the pks island and kills *Staphylococci* via the genotoxin colibactin during interspecies competition. 2022 *PLoS Pathog* 18(9): e1010766. <https://doi.org/10.1371/journal.ppat.1010766>. **IF 7.464.**
- Olga L.M. Haenen, Ha Thanh Dong, Truong Dinh Hoai, Margaret Crumlish, Iddya Karunasagar, Timothy Barkham, Swaine L. Chen, Ruth Zadoks, Andreas Kiermeier, Bing Wang, Esther Garrido Gamarro, Masami Takeuchi, Mohammad Noor Amal Azmai, Belén Fouz, Rolando Pakingking Jr., Zeng Wei Wei, and Melba G. Bondad-Reantaso. Bacterial diseases of tilapia, their zoonotic potential, and risk of antimicrobial resistance (AMR). *Reviews in Aquaculture Rev Aquac.* 2023;15(Suppl. 1):154–185. **IF 10.618.**
- Barkham T, Tang W, Wang Y, Sithithaworn P, Kopolrat KY, Worasith C. Human Fecal Carriage of *Streptococcus agalactiae* Sequence Type 283, Thailand. *Emerg Infect Dis.* 2023;29(8):1627-1629. <https://doi.org/10.3201/eid2908.230098>. **IF 7.2.**
- Swaine Chen, Suma Tiruvayipati, Tang Wen Ying, Timothy Barkham. Multilocus sequence typing database for *Streptococcus agalactiae* contains a spurious allele of the transketolase gene.

Microbiology Spectrum. 2024 (Spectrum00537-24R1) PMID 39052441.  
<https://doi.org/10.1128/spectrum.00537-24>. **IF 3.8.**

- Lim, Y.C.; Ong, K.H.; Khor, W.C.; Chua, F.Y.X.; Lim, J.Q.; Tan, L.K.; Chen, S.L.; Wong, W.K.; Maiwald, M.; Barkham, T.; et al. Sequence Types and Antimicrobial Resistance Profiles of Salmonella Typhimurium in the Food Chain in Singapore. Microorganisms 2024, 12, 1912. PMID: 39338586.  
<https://doi.org/10.3390/microorganisms12091912>. **IF 4.2.**

### Notable Research Awards & Grants from Past 5 Years

Name of Awards & Grants	Year Obtained
The GIS Super Team Award	2017
A*STAR ETC & D3 Special Recognition Award	2017
TEMASEK FOUNDATION INNOVATES' SINGAPORE MILLENNIUM FOUNDATION for "Assessing the threat of a previously unknown foodborne pathogen (Group B Streptococcus) to the safety and resiliency of the food supply in Singapore"	2018
Glasgow University-The Global Challenges Research Fund for "Southeast Asian group B Streptococcus – Creating a network to address the regional threat to public health and aquaculture"	2018
NHIC-I2P-1710045 Invention Title "Chemical strategies for preventing colistin/polymyxin resistance conveyed by the mobile plasmid mcr"	2018
Universiti Putra Malaysia for "Experimental co-infection of Tilapia Lake Virus and selected pathogenic bacteria in red hybrid tilapia model"	2018
UN FAO (United Nations Food and Agriculture Organisation) for "Emerging Food Safety Threat of group B Streptococcus (GBS) in fish in South-East Asia"	2019
National Healthcare Group (NHG) Outstanding Research Impact Award	2019
CoSTAR-HS/ARGSeedFund/2019/04 for "New drug susceptibility testing and treatment strategies for non-tuberculous mycobacterial infections"	2019