



## Professor Anton Peleg

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Head, Mechanisms of Pathogenesis of Hospital-acquired Organisms



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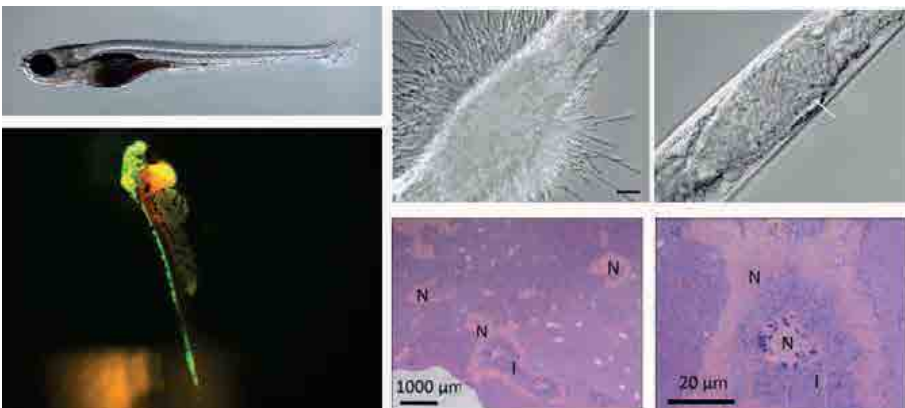
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Our research program focuses on the mechanisms of pathogenesis of important hospital-acquired pathogens. More specifically, *Acinetobacter baumannii*, an emerging Gram-negative bacterium, *Staphylococcus aureus*, a Gram-positive bacterium, and *Candida albicans*, the most common human fungal pathogen. We combine bacterial and fungal genetic techniques with exciting in vivo infection model systems (mammalian and non-mammalian [*Caenorhabditis elegans* and Zebrafish]) to characterise the role of novel genes in virulence and antimicrobial resistance. Our over-arching goal is to identify new targets that may be amenable for future drug development, with a focus on microbial virulence, persistence and adaptation.

### Research Projects

1. Impact of antibiotic resistance on immune recognition of *Staphylococcus aureus*
2. Impact of antibiotic resistance upon virulence and persistence in *Staphylococcus aureus*
3. Characterising novel virulence mechanisms and the regulation of virulence in the emerging hospital-acquired pathogen; *Acinetobacter baumannii*
4. Virulence of the most common human fungal pathogen; *Candida albicans*



Use of infection models to study pathogenesis.

### Selected significant publications:

1. Cerqueira GM, Kostoulias X, Khoo C, Aibinu I, Qu Y, Traven A, **Peleg AY**. 2014. A Global Virulence Regulator in *Acinetobacter baumannii* and its Control of the Phenylacetic Acid Catabolic Pathway. *Journal of Infectious Diseases* 210(1):46-55.
2. Cameron DR, Ward DV, Kostoulias X, Howden BP, Moellering Jr. RC, Eliopoulos GM, **Peleg AY**. 2012. The serine/threonine phosphatase Stp1 contributes to reduced susceptibility to vancomycin and virulence in *Staphylococcus aureus*. *Journal of Infectious Diseases* 205(11):1677-87.
3. Uwamahoro N, Qu Y, Jelicic B, Lo TL, Beaurepaire C, Bantun F, Quenault T, Boag P, Ramm G, Callaghan J, Beilharz TH, Nantel A, **Peleg AY**, and Traven A. 2012. The functions of Mediator in *Candida albicans* support a role in shaping species-specific gene expression. *PLoS Genetics* 8(4):e1002613.
4. **Peleg AY**, Hooper DC. Hospital-acquired Infections due to Gram-negative Bacteria. 2010. *New England Journal of Medicine* 362(19):1804-13.
5. **Peleg AY**, Tampakakis E, Fuchs BB, Eliopoulos GM, Moellering RC, Jr., Mylonakis E. 2008. Prokaryote-eukaryote interactions identified by using *Caenorhabditis elegans*. *Proceedings of the National Academy of Science* 105(38):14585-90.