Dr Camelia Quek PhD, BAdvSci, DipMolBiotech

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Summary Biography

Dr Camelia Quek is an Adjunct Associate Professor at the University of Sydney and a NHMRC Investigator Fellow at Melanoma Institute Australia. She originally did a first degree in molecular biology at the University of New South Wales (University Medal) before moving on to do a PhD in transcriptomics and bioinformatics at the University of Melbourne (Sawyer Medal). She specialises in clinical computational biology and has wide experience in clinical multi-omics analytics and spatial data integration. Dr Quek's early research has made significant advances in understanding cancer biology and tumour microenvironment in melanoma patients treated with immunotherapy, using gene expression profiles to discover biomarkers in response to cancer therapies, and single-cell multi-omics to guide clinical decision-making. Her research impact and contributions are recognised in Australia and worldwide. Over the past years, she has received several prestigious awards including 2022 CINSW Premier's Awards for Wildfire Highly Cited Publication (co-first authors, Cancer Cell 2019), 2021 10x Millennium Science Start Single Cell Award, and 2017 CINSW Premier's Awards for Excellence in Translational Research Team. She has also received 3X Best Poster Winner 2014, 2017 and 2018, and Best Oral Talk 2017 at both international and national conferences. Passionate about translating research findings into clinical and industrial applications, she actively collaborates with clinicians and industry partners to advance new knowledge in the design of biomarker panels and therapeutic targets.

EMPLOYMENT AND APPOINTMENT

2025 – Present	NHMRC Investigator Fellow
2025 – Present	Adjunct Associate Professor – The University of Sydney
2021 – 2024	Cancer Institute NSW Early Career Fellow
2021 – 2025	Honorary Senior Research Fellow / Adjunct Senior Lecturer – The University of Sydney
2016 – 2021	Postdoctoral Scientist (Oncology Bioinformatics) – Melanoma Institute Australia
2016 – 2021	Research Affiliate – The University of Sydney

EDUCATION AND HONOURS

2012 – 2016	Doctor of Philosophy in Medicine and Health Science, The University of Melbourne ***Sawyer Medal in Outstanding PhD and Melbourne Research Scholar***
2009 – 2011	Bachelor of Advanced Science (Hons Class 1) – Major in Molecular Biology, University of New South Wales ***University Medal and Golden Jubilee Scholar***
2006 – 2009	Diploma in Molecular Biotechnology with Merit, Nanyang Polytechnic ***Gold Medal***

KEY PUBLICATIONS *co-first authors

1. Bai X, Attrill GH, Gide TN, Ferguson PM, Nahar KJ, Shang P, Vergara IA, Palendira U, Pires da Silva I, Carlino MS, Menzies AM, Long GV, Scolyer RA, Wilmott JS, **Quek C**. Stroma-infiltrating T cell spatiotypes define immunotherapy outcomes in adolescent and young adult patients with melanoma. ***Nature Communications 2024***;15(1):3014. **[Article Influence Score from Clarivate = 5.8]**
2. **Quek C***, Pratapa A*, Bai X*, Al-Eryani G*, Pires da Silva I*, Mayer A, Bartonicek N, Harvey K, Maher NG, Conway JW, Kasalo RJ, Ben Cheikh B, Braubach O, Palendira U, Saw RPM, Stretch JR, Shannon KF, Menzies AM, Scolyer RA, Long GV, Swarbrick A, Wilmott JS. Single-cell spatial multiomics reveals tumor microenvironment vulnerabilities in cancer resistance to immunotherapy. ***Cell Reports 2024***;43(7):114392. **[Scopus = Top Q1 in Biochemistry, Genetics and Molecular Biology research]**
3. Lee H*, Ferguson AL*, **Quek C*,** Vergara IA, Pires daSilva I, Allen R, Gide TN, Conway JW, Koufariotis LT, Hayward NK, Waddell N, Carlino MS, Menzies AM, Saw RPM, Shklovskaya E, Rizos H, Lo S, Scolyer RA, Long GV, Palendira U, Wilmott JS. Intratumoral CD16+ macrophages are associated with clinical outcomes of patients with metastatic melanoma treated with combination anti-PD-1 and anti-CTLA-4 therapy. ***Clinical Cancer Research 2023***; OF1-2. **[2023 Finalist for UniSyd Outstanding Publication]**

4. Gide, T. N.*, **Quek, C.*,** Menzies, A. M., Tasker, A. T., Shang, P., Holst, J., Madore, J., Lim, S. Y., Velickovic, R., Wongchenko, M., Yan, Y., Lo, S., Carlino, M. S., Guminski, A., Saw, R. P. M., Pang, A., McGuire, H. M., Palendira, U., Thompson, J. F., Rizos, H., Silva, I. P. D., Batten, M., Scolyer, R. A., Long, G. V., and Wilmott, J. S. (2019). Distinct Immune Cell Populations Define Response to Anti-PD-1 Monotherapy and Anti-PD-1/Anti-CTLA-4 Combined Therapy. ***Cancer Cell 2019***; 35, 238-255 e236. **[2022 Cancer Institute NSW Wildfire Highly Cited Publication, and 2023 Highly Cited Paper in Molecular Biology and Genetics from Clarivate's Essential Science Indicators]**
5. Edwards J, Wilmott JS, Madore J, Gide T, **Quek C**, Tasker A, Ferguson A, Chen J, Hewavisenti R, Hersey P, Gebhardt T, Weninger W, Britton W, Saw R, Thompson J, Menzies AM, Long GV, Scolyer RA, Palendira U. "CD103+ tumor-resident CD8+ T cells are associated with improved survival in immunotherapy naive melanoma patients and expand significantly during anti-PD1 treatment." ***Clinical Cancer Research*** 2018; 24, 3036-3045. **[2023 Highly Cited Paper in Clinical Medicine from Clarivate's Essential Science Indicators]**

OVERALL TRACK RECORD

Publications

ORCID: 0000-0002-1244-961X

I have published >40 peer-reviewed articles and 7 invited reviews.

Funding

2025 – 2030	NHMRC Investigator Grant
2023 – 2025	Tour De Cure Early Career Research Grant Program
2023 – 2026	NHMRC Ideas Grants
2021 – 2024	Cancer Institute NSW Early Career Research Fellowship
2020 – 2024	Melanoma Research Alliance
2020	The University of Sydney – Charles Perkins Centre Early- and Mid-Career Researchers Seed Funding Award
2020	Sydney Catalyst Pilot and Seed Funding Award
2020 – Present	CLEARbridge Foundation

Awards and Prizes

2023	Best Oral Talk at International Society for Computational Biology ASCS 2023, virtual, worldwide
2022	CINSW Premier's Award for Wildfire Highly Cited Publication, Australia
2021	10x Millennium Science Start Single Cell Award, Australia
2020	Immuno-Oncology Summit Europe – Invited Speaker Award
2018	Best Poster – IAP (International Academy of Pathology) conference
2017	NSW Premier's Awards for Outstanding Cancer Research (Excellence in Translational Research to MIA Research Team) - Dr Camelia Quek
2017	Sawyer Medal in Outstanding Research Achievements PhD students, The University of Melbourne
2017	Most Outstanding Oral Presentation – Anti-Cancer Agents and Drug Development 1 session, The University of Sydney Cancer Research Network 2017 Postgraduate & ECR Cancer Research Symposium, Australia
2017	Best Poster – Immunotherapy@Brisbane Conference, Australia
2014	Poster Prize Winner – Wellcome Trust Computational RNA Biology Conference
2011	University Medal in Molecular Biology, University of New South Wales
2011	Undergraduate Student Encouragement Award, University of New South Wales, Australia (Australian Society for Microbiology NSW-ACT)
2009	Gold Medal in Molecular Biotechnology, Nanyang Polytechnic

Professional activities

2023 – Present Associate Editor of Molecular Carcinogenesis
2023 – Present Special Issue Editor for International Journal of Molecular Sciences
2020 – Present Cancer Research Network - The University of Sydney (Steering Committee)
2016 – Present European Association for Cancer Research (Ambassador)
2016 – Present Reviewer (Nature, Cell, Frontiers, International Journal of Molecular Sciences, Modern Pathology, Pigment Cell Melanoma Research)

Mentorship

2016 – Present Supervisor for PhD, Honours, MD-PhD students – The University of Sydney
- Lead supervisor for PhD students; completed 2 PhD students with merit.
- Lead/Co-supervisor for Honours students; completed 4 Honours students awarded with all High Distinction Score and first-class Honours, and 1 as University Medal.

Contributions to analysis tools for research

- Multimodal Integration Toolkit – https://github.com/cameliaquek/singlecell_spatial_multiomics
- FunRich: Functional Enrichment Analysis Tool – http://www.funrich.org
- iSRAP: Integrated Small RNA Analysis Pipeline – https://israp.sourceforge.net

Contributions to large datasets for research

- EGAS50000000339: https://ega-archive.org/studies/EGAS50000000339
- EGAS50000000238: https://ega-archive.org/studies/EGAS50000000238
- PRJEB52880: https://www.ebi.ac.uk/ena/browser/view/PRJEB52880
- EGAS00001006977: https://ega-archive.org/studies/EGAS00001006977
- PRJEB54666: https://www.ebi.ac.uk/ena/browser/view/PRJEB54666
- EGAS00001006982: https://ega-archive.org/studies/EGAS00001006982
- PRJEB45846: https://www.ebi.ac.uk/ena/browser/view/PRJEB45779
- PRJEB23709: https://www.ebi.ac.uk/ena/browser/view/PRJEB23709

Media

- MIA's LabLife blog series – Dr Camelia Quek
  https://bit.ly/3xS1NkR or https://melanoma.org.au/news/camelia-quek-lablife/?utm_content=300715011&utm_medium=social&utm_source=linkedin&hss_channel=lcp-720442
- Scientific Malaysian Magazine Issue 14 – Cancer. Article entitled "Untangling the genetic mysteries of cancer using computational tools")
  https://www.scientificmalaysian.com/2018/02/04/scientific-malaysian-magazine-issue-14/
- iSRAP – a one-touch research tool for rapid profiling of small RNA-seq data
  https://www.rna-seqblog.com/israp-a-one-touch-research-tool-for-rapid-profiling-of-small-rna-seq-data/

Impact of previous research

My research has biological and clinical impact. I was the first co-author for the Cancer Cell (IF38.5), first or mid senior co-authors for 6xClinical Cancer Research and Cell Reports, and co-last senior author in Nature Communications to report EOMES+CD69+CD45RO+ cells, intratumoural natural killer, T cells and stoma-infiltrating immune cells are sensitive or resistance to immune-based drugs. The signature-driven response markers are now translated into our Personalised Immunotherapy Program at Melanoma Institute Australia. Clinicians can now use these markers to manage treatment decision making for patients.