



SANJAY KUMAR SUKUMAR, PhD
Postdoctoral Researcher, Institute
of Biomedicine, University of
Gothenburg

RESEARCH INTEREST

I am passionate about leveraging genetic tools to investigate fundamental questions in biology and medicine.

CONTACT

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MAIN REFERENCE PERSON

Ruth Palmer, PhD

Prof., Dept. of Medical Biochemistry and Cell Biology, Institute of Biomedicine, The Sahlgrenska Academy at the University of Gothenburg, Medicinargatan 9A, 41390 Gothenburg, SWEDEN
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(A list of all references and their contact details in page 3)

EDUCATION

- **PhD in Medical Science (May 2019 – September 2024)** Department of Medical Biochemistry and Cell Biology, Sahlgrenska Academy, University of Gothenburg.

PhD main Supervisor: Prof. Ruth Palmer

PhD thesis title: Investigating the function of Anaplastic Lymphoma Kinase (ALK) in neuronal tissues

PhD research summary: Anaplastic Lymphoma Kinase (ALK) is a receptor tyrosine kinase which is implicated in a wide range of cancers including neuroblastoma and lung cancer. My main PhD research involved characterising the targets of ALK signalling in neuronal cells using the *Drosophila* CNS model. We employed a multi-omics integration-based approach and observed a strong enrichment of ALK regulated genes in *Drosophila* neuroendocrine cells. I further identified and validated a newly characterized neuropeptide Sparkly as a target of Alk signalling in *Drosophila* CNS. The Study provided new insights into the evolutionarily conserved role of ALK signalling in neuroendocrine function.

- **Integrated Masters Program in Biomedical Sciences (2012-2017)**, Bharathidasan University, Tiruchirappalli, India.

RESEARCH EXPERIENCE AND EXCHANGES

- **Postdoctoral Researcher (October 2024 – present)** Department of Medical Biochemistry and Cell Biology, Sahlgrenska Academy, University of Gothenburg.
- **Guest Scientist (February 2024 – March 2024)**, Research exchange visit to Biozentrum, University of Basel, Switzerland.
- **Visiting Researcher (June 2018 – May 2019)**, Institute of Biomedicine, Sahlgrenska Academy, University of Gothenburg, Sweden.
- **Masters Project (November 2016-April 2017)**, National centre for biological sciences (NCBS), TIFR, Bangalore, India.

RESEARCH SKILLS/TECHNIQUES

- *Drosophila* genetics
- CRISPR/Cas9 genome editing
- Immunohistochemistry
- Protein-protein interaction studies
- Microscopy
- Bacteriology and molecular cloning
- LC-MS based peptidomics
- Transcriptomics
- Proteomics
- Basic bioinformatics
- R programming
- Scientific writing and presentation
- Preprint review

LANGUAGES

- English (Professional level)
- Malayalam (Native tongue)
- Tamil (elementary level)
- Hindi (elementary level)
- Swedish (elementary level)

TEACHING EXPERIENCE

- **Teaching Assistant (2020 - 2023)**, Department of Medical Biochemistry and Cell Biology, Sahlgrenska Academy, University of Gothenburg.
- **Main responsible teaching assistant (April 2023)** for recombinant DNA technology plasmid labs for medical students at the Sahlgrenska Academy.

GRANTS, COURSES, CONFERENCES AND PROFESSIONAL ACTIVITIES

- **Received research grant from Adlerbertska foundation, Sweden (September 2024)**
- **Received research grant from AG fond, Sweden (December 2023)**
- **SSMF travel grant for research exchange** to visit the Biozentrum, University of Basel. (February – March – 2024)
- **Cancer Research South School (CARES) fellow (2022-2023)** organised jointly by Gothenburg and Lund university
- **Received travel grant from Adlerbertka fondation** to attend 6th Neuroblastoma Research Symposium, Cambridge, UK organised by Neuroblastoma UK at University of Cambridge
- **Received travel grant from Cancerfonden (March 2023)** to attend GSA *Drosophila* Research Conference in Chicago, USA and presented a poster.
- **Received travel grant from Sahlgrenska academy (September 2022)** to attend European *Drosophila* neurobiology conference in St. Malo, France and presented a poster.
- **Served as a member of Board of Studies (2018-2021)** in my undergraduate alma mater (**Bharathidasan University**) and was involved in drafting regulation and curriculum structure.
- **Recipient of Indian National Science Academy (INSA) summer research fellowship – (2014 and 2015).**

MEMBERSHIP IN PROFESSIONAL/NON-PROFIT ORGANISATIONS

- **European Association for Cancer researcher (EACR) Member and Ambassador (2020-present)**
- **eLife's open science champions network member**
- **ASAPbio community member** and contributed to ASAPbio's crowd preprint review program – 2022.

PEER-REVIEWED ORIGINAL ARTICLES:

1. **Sukumar SK**, Antonydhason V, Molander L, Sandakly J, Kleit M, Umopathy G, Mendoza-Garcia P, Masudi T, Schlosser A, Nässel DR *et al* (2024) The Alk receptor tyrosine kinase regulates Sparkly, a novel activity regulating neuropeptide precursor in the *Drosophila* central nervous system. *eLife* 12: RP88985
2. Mendoza-Garcia P, Basu S, **Sukumar SK**, Arefin B, Wolfstetter G, Anthonydhason V, Molander L, Uçkun E, Lindehell H, Lebrero-Fernandez C *et al* (2021) DamID transcriptional profiling identifies the Snail/Scratch transcription factor Kahuli as an Alk target in the *Drosophila* visceral mesoderm. *Development (Cambridge, England)* 148
3. Uçkun E, Wolfstetter G, Anthonydhason V, **Sukumar SK**, Umopathy G, Molander L, Fuchs J, Palmer RH (2021) In vivo Profiling of the Alk Proximitome in the Developing *Drosophila* Brain. *Journal of Molecular Biology* 433: 167282
4. Wolfstetter G, Pfeifer K, Backman M, Masudi TA, Mendoza-García P, Chen S, Sonnenberg H, **Sukumar SK**, Uçkun E, Varshney GK *et al* (2020) Identification of the Wallenda JNKKK as an Alk suppressor reveals increased competitiveness of Alk-expressing cells. *Scientific reports* 10: 14954
5. Richhariya S, Jayakumar S, **Kumar Sukumar S**, Hasan G (2018) dSTIM- and Ral/Exocyst-Mediated Synaptic Release from Pupal Dopaminergic Neurons Sustains *Drosophila* Flight. *eNeuro* 5

LIST OF REFERENCES AND THEIR CONTACT INFORMATION:

1. **Ruth Palmer, PhD**
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Institute of Biomedicine,
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2. **Patricia Mendoza-Garcia, PhD**
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3. **Bengt Hallberg, PhD**
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