

Valdeko Kruusvee

Skilled biochemist with years of experience in protein expression, purification and characterisation using a range of biochemical and biophysical techniques looking to pivot into an industrial role. Experienced at protocol development and optimisation to deliver high-quality results. Highly competent in standard laboratory techniques. Comfortable writing up and presenting results to (non)technical audiences.

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🌐 www.kruusv.ee

🎓 EDUCATION

- 2017-2013 • **University of Edinburgh** 📍 Edinburgh, UK
PhD Structural and Molecular Biology
- 2013-2009 • **University of Edinburgh** 📍 Edinburgh, UK
BSc Hons. Biochemistry

📋 WORK EXPERIENCE

- Dec 2022 | May 2019 • **Postdoctoral Research Scientist** 📍 Copenhagen, Denmark
University of Copenhagen
 - Developed a novel bioinformatic pipeline written in C++ to identify a class of small proteins regulating fundamental plant development from proteomes.
 - Lead and supported the development of small-scale protein purification and characterisation protocols for proteins involved in plant shade avoidance.
 - Wrote and contributed to the writing and critical assessment of several published manuscripts.
 - Analysed IsoSeq and PEATseq RNA datasets to identify novel alternatively spliced transcripts.
 - Advised and trained lab members in bioinformatic data analysis techniques.
- April 2019 | Oct 2016 • **Postdoctoral Research Scientist** 📍 Edinburgh, UK
University of Edinburgh
 - Utilised SPR and FP assays, and analytical SEC to show that pathological mutations of Rett syndrome and related neurodevelopmental disorders disrupt the formation of a critical corepressor complex
 - Created bacterial protein purification protocols for multiple zinc-finger protein constructs and mutants involved in a stem cell maintenance disorder using ÄKTA FPLC system.
 - Analysed zinc finger protein complexes using directed mutagenesis, pulldown assays and chemical crosslinking with LC-MS to determine the critical residues mediating protein-protein interactions.
 - Used competitive EMSA and FP binding assays to determine which specific nucleotides are critical in mediating zinc finger-DNA complex interactions.
 - Worked on the identification of novel protein partners of a nuclear corepressor complex using SILAC
 - Planned and supervised one Bachelor's and one Master's thesis project, and trained summer interns and visiting PhD researchers.
- July 2017 | Sept 2013 • **PhD student** 📍 Edinburgh, UK
University of Edinburgh
 - Developed bacterial and baculoviral expression and purification protocols for high-purity production of multiple mammalian proteins using ÄKTA FPLC system.
 - Crystallised and analysed a protein complex central to a neurodevelopmental disorder to identify the critical binding interface residues through mutational studies using TDA, FP, and SPR assays.
 - Developed a 96-well fluorescence-based binding assay for medium-throughput drug screening in collaboration with a team from the University of Montreal.
 - Designed and supervised 3 Bachelor's projects, and trained 3 undergraduate interns.



ADDITIONAL SKILLS

Gibson assembly, Ligation-Independent cloning, Western Blotting, Co-IP, EMSA, SDS-PAGE, sterile tissue culture, protein quantification, spectroscopy, Benchling, GraphPad Prism, PyMol, C++, Python



PUBLICATIONS

- 2024 ● **A shade-responsive microProtein in the Arabidopsis ATHB2 gene regulates elongation growth and root development**
eLife DOI: 10.7554/eLife.96725.1
Edwards, A., Chiurazzi, M.J., Blaakmeer, A., Vittozzi, Y., Sharma, A., Matton, S., **Kruusvee, V.**, Straub, D., Sessa, G., Carabelli, M., Morelli, G., Wenkel, S.
- 2023 ● **Structure of SALL4 zinc finger domain reveals link between AT-rich DNA binding and Okihiro syndrome**
Life Sci. Alliance DOI: 10.26508/lsa.202201588
Watson, J.A., Pantier, R., Jayachandran, U., Chhatbar, K., Alexander-Howden, B., **Kruusvee, V.**, Predecki, M., Bird, A., Cook, A.G.
- 2022 ● **Microproteins — lost in translation**
Nat. Chem. Biol. DOI: 10.1038/s41589-022-01007-5
Kruusvee, V., Wenkel, S.
- 2022 ● **Stop CRYing! Inhibition of cryptochrome function by small proteins**
Biochem. Soc. Trans. DOI: 10.1042/BST20190062
Kruusvee, V., Toft, A.M., Aguida, B., Ahmad, M., Wenkel, S.
- 2022 ● **FIONA1-mediated methylation of the 3'UTR of FLC affects FLC transcript levels and flowering in Arabidopsis**
PLoS Genetics DOI: 10.1371/journal.pgen.1010386
Sun, B., Bhati, K.K., Song, P., Edwards, A., Petri, L., **Kruusvee, V.**, Blaakmeer, A., Dolde, A., Rodrigues, V., Straub, D., Yang, J., Jia, G., Wenkel, S.
- 2020 ● **Global Analysis of cereal microProteins suggests diverse roles in crop development and environmental adaptation**
G3 DOI: 10.1534/g3.120.400794
Bhati, K.K., **Kruusvee, V.**, Straub, D., Chandran, A.K.N., Jung, K., Wenkel, S.
- 2020 ● **Light affects tissue patterning of the hypocotyl in the shade-avoidance response**
PLoS Genetics, DOI: 10.1371/journal.pgen.1008678
Botterweg-Paredes, E., Blaakmeer, A., Hong, S-Y., Sun, B., Mineri, L., **Kruusvee, V.**, Xie, Y., Straub, D., Ménard, D., Pesquet, E., Wenkel, S.
- 2017 ● **Structure of the MeCP2-TBLR1 complex reveals a molecular basis for Rett syndrome and related disorders**
Proc. Natl. Acad. Sci. DOI: 10.1073/pnas.1700731114
Kruusvee, V., Lyst, M., Taylor, C., Tarnauskaite, Z., Bird, A.P., Cook, A.G.