Biochemical and structural insights in bacterial B-type vitamin transporters of the Pnu family
Singh, Rajkumar

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2020

Link to publication in University of Groningen/UMCG research database

Citation for published version (APA):

Copyright
Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

Take-down policy
If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): http://www.rug.nl/research/portal. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.
ACKNOWLEDGEMENTS

I would like to express my sincere gratitude to those who have contributed to the work described in this thesis.

First and foremost, I thank Prof Dr. Dirk Jan Slotboom, for accepting me as a PhD scholar in your group. Dear Dirk, thank you for guidance, support, motivation and encouragement throughout whole PhD journey. Your stimulating suggestions, enthusiastic approach and positive view (all the time you keep saying, it will work) towards research helped me a lot in my research and completing this thesis. You have been a great mentor and a person who has contributed a lot in my scientific development. I could not have imagined having a better supervisor and mentor for my PhD than him. You have contributed to a rewarding experience by giving me intellectual freedom in my work, supporting my attendance at various conferences, engaging me in new ideas and demanding a high quality of work in all my endeavors.

I greatly benefitted from Prof Dr. Bert Poolman, and sincerely thank him for all the discussion and help during my stay in membrane enzymology group. I also thank you for being in my thesis evaluation committee and your valuable inputs and suggestions. I would also like thanks to all other thesis reading committee members, Prof AJM Driessen and Prof V Borshchevskiv for taking time out to read my thesis and their valuable inputs.

Albert, it was an honour to work with you, you are good friend and excellent scientist. You came as senior post doc, when I started my first year PhD and now you are a group leader, many congratulations to you. Here, I would like to say thank you for all your help either with protein crystallization, problem discussion or with synchrotron trip, you were always there for support and help. Thank you so much for all your time and help during my thesis work also.

During my PhD in Netherland, there were so many people around and I would like to thank you all of them for their help and support. Ria, thank you so much for your help mainly in PnuT project and help showing me all the enzymology lab during my initial days PhD. Gea, thank you so much for your help and support in ITC and LCP crystallization.

Here, I would take this opportunity to acknowledge and say thank you to Lotteke Swier and Artem Stetsenko, to be paranymphs for my PhD defence. Lotteke Swier, you are a super active and brilliant PhD fellow, I am glad we worked for some time on same ECF-project, where you and Weronika, moved with those projects and I worked with Pnu projects. Artem, it was really good to work with you, when you joined your PhD. It was good opportunity to know more about Russia and I still had those memories when you learnt biking while your short stay at my
place. I would like to thank you both in advance for your time and help for being my paranymphs.
Weronika, another super active and motivated PhD student, and it was really nice to have your working table next to mine. You were the savior for many times, whenever something needed, either with specific antibiotic agar plates or some calculation re-checking. It was you and Franz who were always there around in lab. Franz, I noticed you are sitting in same office and table and everything looks so familiar on your table, one can easily see some PCR pictures, some primers order sheet and extra pair of running shoes lying under your table. Thank you Weronika and Franz for all your help and valuable time.
Sonja and Dorith, I still remember the day I came for PhD interview and you two got the responsibility to show me lab and all the facility. Though we discussed many things that day but it was really nice when Dorith show me crystallization room and to learn more about the project from Sonja. During that visit, I had a chance to interact with Marysia and when I met her, I had impression that I speak so fast but then she explained one of her poster so quickly and told that this is all what we do. I must say it was really good to work with all of you and thank you for being such a nice lab mates.
Hendrik and Ruslon, you both are wonderful guys and it was really nice to have a full international team in work. We always had so many different things to talk. I remember Hendrik joined in master project in lab and did so well and now he is research student with Bert. Many congratulations and all the best to you for your work.
Michael, our work started at the moment when you discussed with Dirk that one person cannot deal with all Pnu project and then we started working together. I am glad that I could do some fruitful work with you. I am sure some project are still ongoing in Dirk’s supervision, so thank you for your help and detail discussion about PnuT project. Alisa, when you came to lab and start working with PnuX project, I passed on all the details to you. In beginning you had some issue with lactic transformation but at the end everything worked and later you moved to other project. It was good to work with you, thank you for all your efforts. Valentina, you also tried to work with PnuT crystallization, I can imagine, it is very challenging project to work but nevertheless thank you for your help with PnuT project. Barbora, as master student you did very good work and now you are PhD student in university, so all the best and thank you for your help.
I would like to say special thanks to Pranav, Vaishali, Nobina and Hansraj who helped me a lot, especially with accommodation in beginning of PhD when I came to Groningen, and also for many dinner at your places. It was really nice to have some Indian friend around, so thank
you for all your support and help. I would also like to thankyou Dipayan for your magical fish curry, and also all kind of scientific discussion, thank you everyone for all the help and support. I would like to acknowledge all the people from Membrane Enzymology such as Paul, Stephan, Joris, Stephanie, Joana, Hallie, Aditya, Gainluca, Inda, Joury, France, Tjeerd and Patricia and to all technical staff and my colleagues working in this or another group for their assistant in some way or other. The high quality weekly seminars conducted by the group members were much beneficial thing for my research career.

During my PhD in Groningen, I came to know about some other Indian masters, PhD and Post-doc students. I feel so glad to know Shubham, and still remember the day when you came to Groningen and stayed with me in my studio apartment. Thereafter, I had a chance to know you more and more and how systematic and organized you are in your everyday life. If I start to write about you and your help, then I need enormous time, but you are one of brilliant, energetic, active and helpful person, I have ever met. You are always there whenever I asked or need something. It was really great to have you around. It has a long time since I have known you and but now when you are getting married, we need to plan more gatherings and spent some more time to know more of you are your wife as a couple. Anurag, who introduced Shubham is another close Indian friend who is very jolly, social and high spirit person. Your knowledge in different fields makes you very dynamic and a very easy person to go along. He as President of GISA organized some very good cultural activities and Indian festive events. Thank you to both of you for all your kind help and wish you both very good luck in your PhD.

This thesis is incomplete without a special big thanks and a heartfelt gratitude to Siddharth Omar (Sid), who not just helped me in providing a nice, friendly, cosy and homely environment during my multiples stay at your place but also helped me in providing tips on how to make a good thesis with nice graphs, useful feedback and insightful comments on my work. Because of you many things went smooth and on time. You are an extraordinary researcher and deserve my special thanks for your generous help in writing my thesis. I would be glad if I could be of any help to you in future and wishing you best for your new job and happy move to Eindhoven. Now, I am smiling when I write about Dhwani, though she is very mature employee of Deloitte, but for me, she is like a kid or teenager but the one and only female leader of our Indian group. Dhwani you are smart, intelligent, independent and it feels so good to see you how you have progressed in your professional career. You have a special talent in cooking and interest in
cooking new dishes and recipes, like cup cake (the cup and chocolate are still lying on Sid table, I think you need to come back again to Sid place and make something new this time, and we would keep in mind to clean everything this time). It was really a great time spent with you guys and thanks for a great company. I always feel at home, when you guys were around.

I must say about my squash team mate Ketan, a person who always prefer to book the last slot of aclo for squash and we played some good matches. Ketan, you came as master student and now have moved to Eindhoven for your job so all the best for job and I must say it was really helpful to have around, thank you for your help and support.

I want to thanks Satish, post doc in Cryo EM group as it was always good to have a discussion with him on EM and some related development. Akash, you are a smart and energetic PhD student (now post doc at ICL, UK), you were very helpful to me during the end of my PhD. You are also a very good person and in thanks for your company in fun stuffs (mud walk, squash, day out trips etc.). Thank you so much for your help and many lunch and dinner party at your places and most importantly the coffee break in Green building.

Sumit, I am also thankful to you for your help, much needed coffee break and some serious discussion on any problems (Biology, chemistry or physics). You are very hardworking student and many congratulations for successful defending your thesis, Many Congratulations Dr Sumit and all the best for future.

I want to thanks Satish, former post doc in Cryo EM group as it was always good to have a discussion with him on EM and some related development. Akash, you are a smart and energetic PhD student (now post doc at ICL, UK), you were very helpful to me during the end of my PhD. You are also a very good person and in thanks for your company in fun stuffs (mud walk, squash, day out trips etc.). Thank you so much for your help and many lunch and dinner party at your places and most importantly the coffee break in Green building. Here I would like to thank you to all the NCL-team, Wuerzburg core AG group (Kushal, Anindya and Sanj-the external member for our coffee break), it was really nice to have you guys around and thank you for all your help and support. Same time, I must say Thank you to whole upcol team in EPFL Lausanne for your help during my stay there. Also a big thank you to both of you, Shivohum and Saumya for your special Maggi and organizing trip to Interlaken, you both are now PhD at DKFZ Heidelberg and Princeton university, so many congratulation to both of you and all the best for your research.
This acknowledgement is incomplete without the mention of my family, my biggest support system. I can’t express in words, that how much I owe you my dearest Baba (Grandfather). What or where I am today, is only because of you. Your support, faith and extreme care in some of the hard phases of our life has altogether made me a different person. Though, you are physically not here but you are always in my mind and thoughts. Whenever I feel low, I close my eyes and think of you and then suddenly there is a light of happiness all around. You always gave me encouragement to be positive and inspiration to always move on in my life. Your space is unfilled by anyone else as you are the hero of my life. I love you so much. Mummy and Papa, thank you for staying behind me and always pushing me ahead. Thank you to both Uncle and aunt, and my special thanks to my sister Premsheela, Priyanka, and brother Bhanu Pratap Singh, Abhishek, and Manoj Mall, Abhimanyu Singh for their support. I would like to say thank you to my wife Shveta and in laws for your help and support throughout this time. I must say, specially to my wife Shveta without you, this would have not been possible, a big Thank you for all your patience and support.

In the end, I would like to thanks and acknowledge all of those, whose names are not here but are part of my life and have not just helped in my PhD but also giving motivation and encouragement to be a good and successful person.