PhD position / Promotionsstelle

The Center for Biotechnology – CeBiTec – of Bielefeld University, Proteome and Metabolome Research (Prof. Dr. Karsten Niehaus, Prof. Dr. Alfred Pühler) offers

2 PhD positions
in the working group of Prof. Dr. Karsten Niehaus and Prof. Dr. Alfred Pühler

Project Titles

- Establishment of genetic tools to analyze and enhance the production of polysaccharides by *Sphingomonas elodea* and other bacteria
- Isolation of genes that encode novel enzymes that degrade bacterial polysaccharides

Application deadline: 15. April 2019

Project Description:

The γ-proteobacterium *Xanthomonas campestris* pv. *campestris* (Xcc) B100 synthesize the exopolysaccharide (EPS) xanthan. Xanthan is used in the food and cosmetic industry as well as for technical applications. Since xanthan cannot be re-metabolized by *Xanthomonas*, the cells have to make a principal decision to invest energy and metabolites in cell growth and division or in the production of xanthan. In our previous work, we established the genome sequence of Xcc B100 (Vorhölter et al. 2008, Alkhateeb et al. 2017). In addition, extensive research was carried out on the transcriptome and metabolome level (Alkhateeb et al., 2016, 2017; Schatschneider et al., 2014, 2011; Frese et al., 2014).

Aims of the projects is the molecular understanding and biotechnological optimization of the biosynthesis of polysaccharides in *Sphingomonas elodea* with respect to quantity and quality.

To reach this goal in the first project entitled “Establishment of genetic tools to analyze and enhance the production of polysaccharides by *Sphingomonas elodea* and other...
bacteria” is focussed on the establishment of a suitable tool box for the analysis of the involved genes.

In the second project entitled “Isolation of genes that encode novel enzymes that degrade bacterial polysaccharides” has a strong focus on the degradation of the polysaccharide Xanthan, synthesized by Xanthomonas campestris pv. campestris. Within this approach, we would like to identify genes that code for enzymes that degrade Xanthan. These enzymes will be expressed, purified and enzymatically characterized.

Qualification profile

Applicants must have a first class Master’s degree with a background in molecular biological sciences. Applicants should have a solid background in molecular biology, genetics or biochemistry. Besides creativity, a strong ability for problem solving through analytical thinking combined with an enthusiasm for scientific research is highly desirable. Additionally, we expect excellent communication, writing and organizational skills and the ability for teamwork.

What we offer

The Centre for Biotechnology (CeBiTec) at Bielefeld University offers an infrastructure, which comprises state-of-the-art instrumentation, bioinformatics plus long standing experience in wet lab techniques and mathematical modelling.

Closing Date for Applications: 15th of April 2021
Expected Date for interviews: End of April 2021
Are you interested? Then send us your application including cover letter, CV and certificates preferably by email (PDF) at stipendium-biotech@ceBiTec.Uni-Bielefeld.de.

1. Write a Letter of Application. Include further information about your qualification and your motivation to participate in this program. Give a brief outline of your scientific interests.
2. Include a CV.
3. Include a resume and any relevant certificates.
4. Include certified English or German translations of all of official documents that are not in English or German.
5. Include copies of your publications and theses (optional).

Contact

Please submit your application including cover letter, CV and certificates by email as one PDF document at stipendium-biotech@ceBiTec.Uni-Bielefeld.de. Reference code: Xanthomonas_0219
Sidhu et al. BMC 2008, Microbiol. 8:87-91