

Job Details

PhD candidate 'Maillard Glycation of Proteins'

Vacancy number	AFSG-FCH-0018
Location	Gelderland
Department	Wageningen University
Function type	Phd positions
Scientific field	
Closing date for applications	30 October 2012

We are looking for

A PhD candidate for the project “Glycation of proteins through the Maillard reaction and separation of reaction products”. The project aims at understanding and controlling the Maillard reaction between reactive carbohydrates and proteins in order to obtain tailored glycated proteins with specific functionalities. Using carbohydrates with different chemical structures and reactivities, intermediate- and final Maillard glycated products will be analysed and involved reaction mechanisms revealed. Separation techniques to fractionate the complex mixtures of (un)reacted proteins will be developed and mechanisms of separation will be investigated by analysing the distinct populations of modified proteins obtained.

Proteins modified by glycosyl moieties have been subject for investigation for a long time already, but a break-through of glycated proteins as food ingredient has not been achieved, mainly due to the fact that the Maillard reaction could not be controlled sufficiently and the reaction products included a wide range of (un-) reacted proteins. Recently, novel chromatographic and mass spectrometric strategies have been developed that allows following the progress of the Maillard reaction between proteins and various mono- and oligosaccharides. Within the crude reaction mixtures, individual reacted proteins could be monitored with respect to the amount of linked saccharides and the occurrence of subsequent dehydration steps. An important challenge to be tackled is to further fine-tune the Maillard reaction in order to avoid crosslinking of reacted proteins and other advanced reaction routes resulting in unstable protein structures. Another important challenge is the development of novel methods to separate proteins with different levels and locations of glycation. The latter will be done preferably by non-chromatographic techniques, while for analysis of the glycated proteins *state-of-the-art* mass spectrometric methods will be used. In particular, the identification of intermediate reaction products in order to come to stable, desired protein products will be pursued.

Requirements

For this position we are looking for a candidate with the following qualifications:
An MSc degree in Chemistry, Food Technology, Biotechnology or Molecular Life Sciences;
Experience with chromatography and mass spectrometry. Experience with carbohydrates and proteins will add to the suitability of a candidate for this post;
Excellent research skills;
Ability to work in a multi-disciplinary project;
Excellent communication skills and proficiency in English (both oral and written).

We offer

We offer you a temporary position for a period of 1.5 years with extension of 2.5 years after successful evaluation. Gross salary per month € 2042,- in the first year rising up to € 2612,- per month in the fourth year.

We not only offer a competitive salary but also good (study) leave and a pension of the ABP Pension Fund.

Additional information

For more information about this position, please contact dr H.A. Schols, associate professor Food Chemistry, telephone number +31 317 482 239.

For more information about the contractual aspects, please contact Bart Schaap, HR Adviseur telephone number +31 317486148.

Interested?

You can apply online at www.werkenbij.wur.nl/UK until October 30th, 2012.

The organization

We are

You will be a member of the Laboratory of Food Chemistry of Wageningen University, which is a group of active, successful and internationally oriented researchers (1 full professor, 3 endowed professors, 5 assistant/associate professors, ± 30 PhD students and ± 10 technicians/post-docs). Keywords that characterize the style of working within the group are: Joint research strategy and responsibility with extensive mutual collaboration by the group members, while being responsible for own research goals. The group has extensive expertise in analysis, modification (chemical, enzymatic, microbial), and properties of oligo/polysaccharides, proteins/peptides and phytonutrients. You can rely on a *state-of-the-art* laboratory with facilities such as ESI-iontrap MS, ESI-TOF-MS, MALDI-TOF-TOF-MS, GC-MS,(U) HPLC, CE, and preparative chromatography.

The Agrotechnology & Food Sciences Group is part of Wageningen UR where fundamental and applied sciences complement each other. As an important European player, we carry out top-level research and work alongside authoritative partners within the international business world as well as the government on “Healthy food in a biobased society”. We have a crucial role in innovations within the market. Entrepreneurship and professionalism are what define us. In short, we are an interesting, international employer of stature.

Wageningen University and Research centre

Delivering a substantial contribution to the quality of life. That's our focus – each and every day. Within our domain, healthy food and living environment, we search for answers to issues affecting society – such as sustainable food production, climate change and alternative energy. Of course, we don't do this alone. Every day, 6,500 people work on ‘the quality of life’, turning ideas into reality, on a global scale.

Could you be one of these people? We give you the space you need.

For further information about working at Wageningen UR, take a look at www.jobsat.wur.nl.

Acquisition regarding this vacancy is not appreciated.

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