



## PhD Program between the Freie Universität Berlin (FUB) and the China Scholarship Council (CSC)

### Open PhD position at FUB for CSC scholarship candidates 2018

*Please note: the PhD position is only offered to Chinese PhD candidates for application in the framework of the FUB-CSC PhD Program.*

<b><u>Department/Institute:</u></b>	Department of Veterinary Medicine / Institute of Veterinary Physiology
<b><u>Subject area:</u></b>	Gastrointestinal physiology, Amino acid metabolism
<b><u>Name of Supervisor:</u></b>	Prof. Dr. Jörg R. Aschenbach
<b><u>Number of open PhD positions:</u></b>	1
<b><u>Type of the PhD Study:</u></b>	Full-time
<b><u>Project title:</u></b>	Intestinal metabolism of methionine and methionine analogues in the pig

#### PhD Project description:

Methionine is an essential amino acid (AA) in all vertebrate animal species. It is not synthesized de novo by the body but must be introduced with diet. It is efficiently absorbed from the gastrointestinal tract and 30% is metabolized during absorption. As methionine represents the second limiting AA in pigs, feed supplementation with Met has been widely applied in monogastric nutrition and many studies have been conducted using DL-Met and the hydroxy analogue DL-HMTBA as feed additive. The latter has been suggested to be superior in terms of animal growth and performance because it is less metabolised to homocysteine, an undesired intermediate product which accumulates and cannot be remethylated to methionine when intracellular methionine levels are high. The here described PhD project will aim to explore the regional expression of main transport systems and metabolic pathways for DL-HMTBA in the gastrointestinal tract of pigs and to investigate the DL-HMTBA transport in the porcine small intestine in the presence of different transport and metabolism inhibitors. The latter experiments will include flux and uptake measurements on vital intestinal tissue ex vivo (Using chamber technique) using radiolabelled DL-HMTBA. To quantify the extent of intestinal HMTBA metabolism, metabolites like homocysteine and methionine will be measured in different intestinal segments using radio-HPLC techniques.

#### Language requirements:

German: TestDaf: 16 or DSH 2 **OR** English: IELTS: 6.5 or TOEFL: 95 ibt.

#### Academic requirements:

Veterinary medicine or Master degree related to biochemistry, physiology, biotechnology or biology

#### Information of the professor or research group leader:

The host laboratory has long-standing experience with gastrointestinal physiology and metabolism in farm animal species (mainly ruminants and pigs). We specialize in integrative physiology; extending from animal trials to ex vivo and in vitro work on tissues and cultured cells, and finally to molecular targets. We have state-of-the-art and fully equipped laboratories for several types of functional studies (Using chamber, microelectrode, patch clamp, spectrofluorometry; including facilities for radiotracer studies) as well as facilities for molecular and immunohistological studies. We regularly have PhD candidates that are top performer and achieve the highest grade (summa cum laude) for their thesis.

Web link:

[http://www.vetmed.fu-berlin.de/einrichtungen/institute/we02/mitarbeiter/interne/aschenbach\\_joerg/index.html](http://www.vetmed.fu-berlin.de/einrichtungen/institute/we02/mitarbeiter/interne/aschenbach_joerg/index.html)

Pub-Med link:

<https://www.ncbi.nlm.nih.gov/pubmed/?term=%22Aschenbach+JR%22>

**Please note:** In a first step, the complete application must be submitted to the Beijing Office for evaluation by January 4<sup>th</sup>, 2018. Please do not contact the professor before. He/She will get in contact with you after having received the complete application via the Beijing Office in January.