

## **Promotor**

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## **Leden van de examencommissie**

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### **Prof. Thierry Facon**

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### **Prof. Fritz Offner**

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Vrije Universiteit Brussel

FACULTEIT GENEESKUNDE EN FARMACIE

## **Doctoraat in de Medische Wetenschappen**

Academiejaar 2011-2012

## **UITNODIGING**

Voor de openbare verdediging van het  
doctoraatsproefschrift van

**Jinsong HU**

donderdag 12 januari 2012

U wordt vriendelijk uitgenodigd op de openbare verdediging van het proefschrift van

**Jinsong HU**

**'Stress-induced resistance in multiple myeloma: the biological and clinical implications for treatment'**

Op **donderdag 12 januari** om **16 uur** in auditorium **R. Vanden Driessche** van de Faculteit Geneeskunde & Farmacie Laarbeeklaan 103, 1090 Brussel

### **Situering van het proefschrift**

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Multiple myeloma (MM) is a fatal B-cell malignancy characterized by the production of a monoclonal paraprotein, hypercalcemia, increased bone marrow (BM) angiogenesis, destructive bone disease. Over the past decade, progress in the treatment of MM has transformed our therapeutic approaches and improves the outcome of affected patients. However, MM still remains incurable, and has a high rate of relapse and drug resistance.

In this work, we identified two kinds of stresses (one is environmental stress: the hypoxic niche in the BM; the other is proteasome inhibition induced endoplasmic reticulum stress) and their roles in MM biology. Firstly, we discovered that hypoxia is a key feature of the MM BM microenvironment by using murine 5T33MM model. Importantly, we further demonstrated that the hypoxic niche in MM BM could be used as a target for treatment of MM, and successfully introduced hypoxia-activated treatment strategy into leukemia for the first time. Secondly, focusing on the effect of proteasome inhibition (bortezomib) in MM, we demonstrated the mechanism how bortezomib induces Mcl-1 expression via endoplasmic reticulum stress signaling. The results provide the molecular basis for better understanding the mechanism of bortezomib-resistance in MM.

### **Curriculum Vitae**

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Jinsong Hu was born on December 12, 1973 in China. He got his Bachelor's degree in biology at Shaanxi Normal University (China). He then worked as a teaching assistant and lecturer at medical school of Xi'an Jiaotong University (China) until 2006. In 2003, he got his Master's degree in medical science at Xi'an Jiaotong University. He registered as a PhD student since 2004, and got his first PhD degree at Fourth Military Medical University (China) in 2008. In October 2006, Jinsong Hu got a scholarship from China Scholarship Council (CSC) and started his second PhD studies at Vrije Universiteit Brussel (Belgium). He focused on the mechanisms of stress-induced resistance to therapy in multiple myeloma, and published 3 papers in high-ranked journals.