Post-doctoral Researcher Chromatin Biology of Plant Cell Totipotency

Laboratory for Molecular Biology and Plant Development Systems, Wageningen University and Research

Project:

The plant kingdom is characterized by a high level of developmental plasticity, including the ability of plants to form embryos in the absence of fertilization. Microspore embryogenesis is a form of totipotency in which immature male haploid gametophytes (microspores and pollen) are induced to form embryos *in vitro*. These haploid embryos can be converted by chromosome doubling to diploid homozygous (doubled-haploid) plants in a single generation, placing this technology in the centre of numerous breeding and trait discovery applications. Although microspore embryogenesis is a widely-applied plant breeding tool, there are many genotypes, and even entire species, that remain recalcitrant for this process, including the model plant arabidopsis. The switch from pollen growth to embryo growth *in vitro* has been well-described at the cellular level, but the molecular mechanisms driving this process remain elusive (Soriano et al., 2013). We have shown that chemical inhibitors of histone deacetylases (HDACi), which epigenetically control gene expression, are potent inducers of plant cell totipotency in microspore embryo culture (Li et al., 2014). In this project, we will unravel the mechanism by which HDACi promote cell totipotency. We will use *Brassica napus* and arabidopsis as model systems to identify and characterize the specific HDAC proteins that repress totipotency and their target genes and proteins.

Qualifications:

We are looking for an enthusiastic and motivated post-doc with a background in chromatin- or transcription factor biology, bioinformatics analysis of NGS data sets, and general (plant) molecular biology. Affinity for tissue culture and/or developmental biology is preferred. Candidates should be proficient in English, proactive and independent, and should also enjoy working in an international 'team' environment. Candidates from non-plant fields are also encouraged to apply.

Conditions:

We offer you a temporary contract for 12 months, which will be extended with an additional two years upon satisfactory performance. The maximum gross salary per month is € 4.274,- (based on full-time employment). In addition, we offer a holiday allowance of 8%- and an end-of-the-year bonus of 8.3% of your annual salary.

Applications:

You can apply up and until June 7th, 2019
Please apply online (here)

Your application should comprise a single pdf file with 1) a *curriculum vitae*, 2) a motivation letter stating your background and research interests and 3) the contact information for three personal references.

For more information about this position, please contact Kim Boutilier (kim.boutilier@wur.nl; +31 317 480889).