

## Best Paper Award 2004



We are pleased to announce that the winner of the award for the Best Paper published in 2004 is Rui Monteiro for the paper entitled 'Spatio-temporal activation of Smad1 and Smad5 in vivo: monitoring transcriptional activity of Smad proteins' (Monteiro et al., 2004).

The prize, \$1000, is awarded annually to the first author of the paper that is judged by the Editors and Editorial Board to be the best published in the Journal that year. To be considered for the prize, the first author must be a student or postdoc of no more than five years standing.

Rui Monteiro was born in Beja, Portugal. At the age of 18 he 'migrated' to Lisbon, where he completed a degree in Biochemistry at the Faculty of

Sciences of the University of Lisbon. His first contact with embryology and molecular biology was through an undergraduate thesis on the molecular and functional characterization of the transcription factor *cEspl2*, a chick enhancer of split homolog. Under the supervision of Domingos Henrique at the Faculty of Medicine, he sequenced the *cEspl2* gene (remember the sequencing gels?) and used in ovo electroporation to study its function in vivo. Many chick eggs later, there was a point of no return; the developmental biology 'bug' was there! As a biochemist, this whole new perspective on science was very exciting. The opportunity to switch from chick to mouse embryology arose after a visit to Christine Mummery's lab at the Hubrecht Laboratory in The Netherlands. Here, Rui started his PhD in April 2000. The project was ambitious and involved the generation of reporter mice for TGF $\beta$  superfamily signalling. After a rough start, with several unsuitable promoter sequences, collaboration with Peter ten Dijke's group at the Netherlands Cancer Institute started paying off. A new BMP response element (BRE) (Korchynskiy and ten Dijke, 2002) allowed Rui to design new reporter constructs and to generate mice transgenic for BRE-LacZ and BRE-Luc constructs (Monteiro et al., 2004). This set the stage for a different approach to the study of canonical BMP signalling; for the first time the transcriptional activity of BMP target genes could be monitored in vivo. More recently, Rui developed a BRE-EGFP reporter mouse that is proving

useful for imaging in live cells from adult organs. He will shortly submit this paper which will add further to the repertoire of mice available for the study of BMP signalling in development and disease. Rui is also studying the effects of mutations in BMP pathway genes in overall BMP signalling by crossing the reporter mice with various mutant strains. Plenty of work still to do!

In parallel, and with the help of Freek van Eeden, Rui started studying BMP signalling in another excellent model for vertebrate development available at the Hubrecht Laboratory: zebrafish. Using the same BRE reporter constructs, he showed that in vivo monitoring of the BMP signalling pathway is also possible in zebrafish. This project, together with the BMP reporter mice, form the basis for his PhD dissertation. At the moment, he is planning to continue his academic career as a post-doc in a developmental biology lab somewhere in Europe.

**Fiona Watt**  
(Editor-in-Chief)

### References

- Korchynskiy, O. and ten Dijke, P.** (2002). Identification and functional characterization of distinct critically important bone morphogenetic protein-specific response elements in the Id1 promoter. *J. Biol. Chem.* **277**, 4883-4891.
- Monteiro, R. M., de Sousa Lopes, S. M., Korchynskiy, O., ten Dijke, P. and Mummery, C. L.** (2004). Spatio-temporal activation of Smad1 and Smad5 in vivo: monitoring transcriptional activity of Smad proteins. *J. Cell Sci.* **117**, 4653-4663.