

## GUEST EDITOR

## Bio-sketch for Oncogene Review Issue on Wnt signalling

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Dr Mariann Bienz

Mariann Bienz obtained her undergraduate degree and PhD at the University of Zürich (Switzerland). She did her postdoctoral research at the MRC Laboratory of Molecular Biology in Cambridge, England, where she worked on the control of heat shock gene expression in *Xenopus* oocytes and mammalian tissue culture cells. In 1986, she moved back to Switzerland to become a professor at the University of Zürich. With her own research group, she started to work on the control of homeotic gene transcription in *Drosophila* development.

## References

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- Riese J, Yu X, Munnerlyn A, Eresh S, Hsu S-C, Grosschedl R *et al.* (1997). LEF-1, a nuclear factor coordinating signalling inputs from *wingless* and *decapentaplegic*. *Cell* **88**: 777–787.

This led her to the study of the embryonic midgut where she discovered an induction cascade between the visceral mesoderm and endoderm mediated by secreted growth factors (Immerglück *et al.*, 1990). She thus focussed on the question how these growth factors – in particular *Wingless* – control the transcription of their homeotic target genes.

In 1991, Dr Bienz returned to Cambridge, to become a senior staff member at the MRC Laboratory of Molecular Biology. This marked the beginning of her interest in the molecular mechanisms of Wnt signal transduction. She pinpointed the *Wingless*-responsive element within the midgut enhancer from the homeotic gene *Ultrabithorax*, and demonstrated that TCF/LEF factors acted through this element to mediate the *Wingless* response (Riese *et al.*, 1997). Soon after this, the critical role of the Wnt signalling pathway in cancer began to emerge. This drew her attention to Wnt signalling components that are particularly relevant for cancer, such as the adenomatous polyposis coli tumour suppressor whose cell-biological properties she began to study in *Drosophila* epithelia, and also in colorectal cancer cells and in mammalian epithelial cell lines (reviewed by Bienz, 2002). She began to exploit *Drosophila* as a tool to discover new Wnt signalling components and their functions, which led to a new nuclear protein called Pygopus with a function in the transcription of Wnt target genes (Thompson *et al.*, 2002). She continues to use a parallel approach spanning *Drosophila* and mammalian cells to examine the molecular interactions between Wnt signalling components and their relevance for colorectal cancer.

Dr Bienz has been an EMBO Member since 1989, and was elected Fellow of the Royal Society in 2003. Her recent election as Fellow of the Academy of Medical Sciences recognizes her interests in cancer research.

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