Best Paper Award 2003

We are pleased to announce that the winner of the award for the Best Paper published in 2003 is Jochen Kirchner for the paper entitled 'Live cell monitoring of tyrosine phosphorylation' (Kirchner et al., 2003).

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 post-doc of no more than five years' standing.

Jochen Kirchner was born in Bad Godesberg, Germany. He studied both biochemistry and mathematics at Tübingen University and for his PhD joined the laboratory of Manfred Schliwa at the Adolf-Butenandt Institute for Cell Biology in Munich. There, he studied the interaction of the microtubule motor protein kinesin with its presumed cargo. He first tried to purify a kinesin-binding activity from organelles from the filamentous fungus *Neurospora crassa*. When that proved too difficult, he characterized several functionally important regions in the tail and stalk domains of *Neurospora* conventional kinesin, together with his co-worker Stephan Seiler. By using the viable *Neurospora* kinesin null mutant, they located a functionally essential cargo binding site in the tail and gained important insights into the regulatory role of the stalk (Kirchner et al., 1999; Seiler et al., 2000).

Owing to his fascination with quantitative light microscopy, Jochen joined the laboratory of Benjamin Geiger at the Weizmann Institute of Science for his postdoctoral studies. There, he studied the dynamics of focal adhesions (FA) in living cells using GFP-technology. Although quantitative studies of protein dynamics in FA were already available (e.g. Zamir et al., 1999), the development of suitable GFP-tools for the study of signalling processes in live cells and in real time had so far been very difficult. He addressed the problem of tyrosine phosphorylation dynamics in FA by joining two SH2-domains of $pp60^{c\text{-}Src}$ (these domains can bind to tyrosine-phosphorylated residues) and fusing them C-terminally to YFP. The new fluorescent reporter molecule binds to phosphotyrosine in FA with an affinity that is high enough to produce a visible signal without affecting focal adhesion assembly. Excitingly, it even proved suitable for quantitative work, and provides the opportunity to study the sequence of molecular events involved in localized signalling at the single cell level and at high light microscopy resolution. Jochen demonstrated that in nocodazole-triggered FA growth, protein recruitment precedes tyrosine phosphorylation, which suggests that phosphotyrosine signalling plays a role in late stages of focal adhesion formation or in focal adhesion turnover. This new tool provides another method for studying signaling dynamics in live cells.

Fiona Watt
(Editor-in-Chief)

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