

**Cover**

The ribosome 'fishing' for elongation factors (EF) via the L7/12 stalk (ribosome: blue; L7/12 stalk: red; EF-G: tan; EF-Tu: light green; aminoacyl-transfer-RNA: green). For further details on ribosome-ligand dynamics by electron cryomicroscopy, see the article by Niels Fischer on pages 231–235.

B.I.F. INTERNAL

- 165** Attraktive Wissenschaft?
269 Particulars
271 Events, Imprint

SCIENCE

- 167** Interview with Ivan Dikic
 'My life is relatively simple'
 At the age of 44, Prof. Dr. Dr. Ivan Dikic can already look back on an impressive career. He worked at New York University, USA and at the Ludwig Institute for Cancer Research in Uppsala, Sweden, before moving to Germany. Dikic is now ready to mould the future of molecular life sciences at Frankfurt's largest university: he wants to form a new flagship institute at Goethe University. B.I.F. FUTURA met the dynamic scientist in Frankfurt.

PROJECTS

- 170** *In-vitro* reconstitution of a self-organizing microtubule cytoskeleton inside liposomes • Identifying epigenetic regulators of antigenic variation in *Plasmodium falciparum* • Investigation of biochemical and structural properties of yeast polymerase ζ • Characterization of murine inducible brown adipocytes • Recognition of intracellular DNA by the innate immune system • Investigating the function of a p63–p73 heterotetramer by structure-based mutagenesis • Expression and functional characterization of gustatory IRs in *Drosophila melanogaster* • Validation and characterization of human embryonic stem cell-derived motor neurons • Chronic *in-vivo* imaging of adult-born neurons • Defining the physiological role of olfactory trace amine-associated receptors • Functional characterization of multiple tissue opsins • Role of the NKG2D receptor for CD1d-restricted T cells • The HIV-1 assembly compartment in macrophages and its role in virological synapses • Functional characterization of GABAergic inhibition in olfactory processing • Regulation of chromosomal stability by the von Hippel

Lindau (VHL) protein • Regulation of the A disintegrin and metalloproteinase ADAM10 • To bind or not to bind: post-transcriptional regulators step on the stage • Molecular analysis and modelling of the metaphase-to-anaphase transition • Electron microscopy studies of transcription initiation control by non-coding RNAs • Chromatin-associated protein degradation • A neural circuit for restoring spontaneous activity in the developing retina • Functional analysis of the mitotic checkpoint proteins BUB1 and BUBR1 • Neuronal basis of olfactory choice behaviour in *Caenorhabditis elegans* • Activation mechanism of a hypochlorite-specific bacterial transcription factor • Biochemical characterization of the human RNA exosome • The functions of rhomboid-like proteins in *Drosophila melanogaster* • Structural and functional studies of neurotransmitter: sodium symporter proteins • Function of hepatic stellate cells in gut homing of lymphocytes • Analysing Ubr1's mechanism in protein quality control and regulated proteolysis • Plasticity of a highly flexible nucleoporin • Polycomb-mediated repression in early mouse embryogenesis • Reconstitution of the pre-initiation complex *in vitro* • The role of feedback signals in regulating cell-fate switch during neocorticalogenesis • Analysis of polar body extrusion during meiotic maturation in mouse oocytes • Eukaryotic Mre11–Rad50–Nbs1 complex in double-strand break repair • Regulated degradation of mature microRNAs • Import motor regulation during precursor translocation into mitochondria • Relationship between replication, transcription and chromatin modifications in embryonic stem cells • Mechanisms of synaptic active zone assembly in *Drosophila* • Animal metamorphosis and patterns of bilaterian nervous system diversification • Characterization of snail neurotoxins using an engineered bacterial secretion system • Peroxidases – the missing link in hydrogen peroxide signalling? • Dorsoventral pattern-

ing in *Tribolium castaneum* • Assembly of caveolae: architecture and functional determinants • Identification of glial functions in modulating motor co-ordination in *Drosophila* • Molecular mechanism of light activation in BLUF photoreceptors • Structural and functional characterization of the human μ -opioid receptor • Assessing the cellular origin of breast cancer • Organisation and regulation of triacylglycerol synthesis • Molecular analysis of gene products involved in FGF2 secretion

RESULTS

- 227** Xavier C. Ding
Mechanism of microRNA-mediated gene silencing in C. elegans
- 231** Niels Fischer
Dynamics of ribosome–ligand complexes as revealed by electron cryomicroscopy
- 235** Florian Karreth
Modulation of oncogenic transformation by Raf proteins
- 239** Michael Krieg
Cell adhesion and cortex contractility guide germ layer formation
- 243** Caroline Kumsta
Cellular effects of oxidative stress on C. elegans
- 246** Nadja Makki
Hoxa1 regulates mammalian hindbrain, inner ear and neural crest development
- 250** Sarah Märki
KLHL21: a specificity factor for Cul3-mediated regulation of Aurora B
- 254** Catharina Netter
Functional diversity of RNA recognition motifs – an example from the minor spliceosome
- 258** Thomas Reißner
DNA polymerase ζ mediated bypass of a cis-platin 1,3-GTG intrastrand cross-link
- 262** Daniel Schmidt
Lipid chemistry modulates membrane protein function
- 265** Lasse Weinmann
Isolation and characterization of microRNA-containing human Argonaute protein complexes