

**Volker Dötsch**  
**Publications 2006-2011**

Ab E, Atkinson AR, Banci L, Bertini I, Ciofi-Baffoni S, Brunner K, Diercks T, **Dötsch V**, Engelke F, Folkers GE, Griesinger C, Gronwald W, Gunther U, Habeck M, de Jong RN, Kalbitzer HR, Kieffer B, Leeftang BR, Loss S, Luchinat C, Marquardsen T, Moskau D, Neidig KP, Nilges M, Piccioli M, Pierattelli R, Rieping W, Schippmann T, Schwalbe H, Trave G, Trenner J, Wöhnert J, Zweckstetter M, Kaptein R (2006) NMR in the SPINE structural proteomics project. *Acta Crystallogr D* 62:1150-1161

Browne G, Cipollone R, Lena AM, Serra V, Zhou HQ, van Bokhoven H, **Dötsch V**, Merico D, Mantovani R, Terrinoni A, Knight RA, Candi E, Melino G (2011) Differential altered stability and transcriptional activity of Delta Np63 mutants in distinct ectodermal dysplasias. *J Cell Sci* 124:2200-2207

Busche AEL, Aranko AS, Talebzadeh-Farooji M, Bernhard F, **Dötsch V**, Iwai H (2009) Segmental isotopic labeling of a central domain in a multidomain protein by protein trans-splicing using only one robust DnaE intein. *Angew Chem Int Edit* 48:6128-6131

Coutandin D, Lohr F, Niesen FH, Ikeya T, Weber TA, Schafer B, Zielonka EM, Bullock AN, Yang A, Guntert P, Knapp S, McKeon F, Ou HD, **Dötsch V** (2009) Conformational stability and activity of p73 require a second helix in the tetramerization domain. *Cell Death Differ* 16:1582-1589

Coutandin D, Ou HD, Lohr F, **Dötsch V** (2010) Tracing the protectors path from the germ line to the genome. *P Natl Acad Sci USA* 107:15318-15325

Deutsch GB, Zielonka EM, Coutandin D, **Dötsch V** (2011) Quality control in oocytes Domain-domain interactions regulate the activity of p63. *Cell Cycle* 10:1884-1885

Deutsch GB, Zielonka EM, Coutandin D, Weber TA, Schäfer B, Hannewald J, Luh LM, Durst FG, Ibrahim M, Hoffmann J, Niesen FH, Sentürk A, Kunkel H, Brutschy B, Schleiff E, Knapp S, Acker-Palmer A, Grez M, McKeon F, **Dötsch V** (2011) DNA damage in oocytes induces a switch of the quality control factor TAp63± from dimer to tetramer. *Cell* 144:566-576

Dikic I, **Dötsch V** (2009) Ubiquitin linkages make a difference. *Nat Struct Mol Biol* 16:1208-1210

**Dötsch V** (2009) On track to tenure-track. *EMBO Rep* 10:936-U8

**Dötsch V** (2011) How to create a specific recognition for an unspecific interaction. *Structure* 19:601-602

**Dötsch V**, Bernassola F, Coutandin D, Candi E, Melino G (2010) p63 and p73, the Ancestors of p53. *Cold Spring Harbor Perspect Biol* 2:14

Durst FG, Ou HD, Löhr F, **Dötsch V**, Straub WE (2008) The better tag remains unseen. *J Am Chem Soc* 130:14932-14933

Foldynova-Trantirkova S, Matulova J, **Dötsch V**, Lohr F, Cirstea I, Alexandov K, Breitling R, Lukes J, Trantirek L (2009) A Cost-effective Amino-acid-type Selective Isotope Labeling of Proteins Expressed in *Leishmania tarentolae*. *J Biomol Struct Dyn* 26:755-761

Hänsel R, Foldynova-Trantirkova S, Lohr F, Buck J, Bongartz E, Bamberg E, Schwalbe H, **Dötsch V**, Trantirek L (2009) Evaluation of parameters critical for observing nucleic acids inside living *Xenopus laevis* oocytes by in-cell NMR spectroscopy. *J Am Chem Soc* 131:15761-15768

Hänsel R, Lohr F, Foldynova-Trantirkova S, Bamberg E, Trantirek L, **Dötsch V** (2011) The parallel G-quadruplex structure of vertebrate telomeric repeat sequences is not the preferred folding topology under physiological conditions. *Nucleic Acids Res* 39:5768-5775

Hefke F, Bagaria A, Reckel S, Ullrich S, **Dötsch V**, Glaubitz C, Güntert P (2011) Optimization of amino acid type-specific (13)C and (15)N labeling for the backbone assignment of membrane proteins by solution- and solid-state NMR with the UPLABEL algorithm *J Biomol NMR* 49:75-84

Höller D, Hecker CM, Wagner S, Rogov V, **Dötsch V**, Dikic I (2007) E3-independent monoubiquitination of ubiquitin-binding proteins. *Mol Cell* 26:891-898

Ikeda F, Hecker CM, Rozenknop A, Nordmeier RD, Rogov V, Hofmann K, Akira S, **Dötsch V**, Dikic I (2007) Involvement of the ubiquitin-like domain of TBK1/IKK-i kinases in regulation of IFN-inducible genes. *EMBO J* 26:3451-3462

Junge F, Haberstock S, Roos C, Stefer S, Proverbio D, **Dötsch V**, Bernhard F (2011) Advances in cell-free protein synthesis for the functional and structural analysis of membrane proteins. *New Biotechnol* 28:262-271

Junge F, Luh LM, Proverbio D, Schafer B, Abele R, Beyermann M, **Dötsch V**, Bernhard F (2010) Modulation of G-protein coupled receptor sample quality by modified cell-free expression protocols: A case study of the human endothelin A receptor. *J Struct Biol* 172:94-106

Junge F, Schneider B, Reckel S, Schwarz D, **Dötsch V**, Bernhard F (2008) Large-scale production of functional membrane proteins. *Cell Mol Life Sci* 65:1729-1755

Kai L, Kaldenhoff R, Lian JZ, Zhu XC, **Dötsch V**, Bernhard F, Cen PL, Xu ZN (2010) Preparative scale production of functional mouse aquaporin 4 using different cell-free expression modes. *PLoS One* 5:8

Kantaputra PN, Malaivijitnond S, Vieira AR, Heering J, **Dötsch V**, Khankasikum T, Sripathomsawat W (2011) Mutation in SAM domain of TP63 is associated with nonsyndromic cleft lip and palate and cleft palate. *Am J Med Genet A* 155A:1432-1436

Keller T, Egenberger B, Gorboulev V, Bernhard F, Uzelac Z, Gorbunov D, Wirth C, Koppatz S, **Dötsch V**, Hunte C, Sitte HH, Koepsell H (2011) The large extracellular loop of organic cation transporter 1 influences substrate affinity and is pivotal for oligomerization. *J Biol Chem* 286:37874-37886

Keller T, Schwarz D, Bernhard F, **Dötsch V**, Hunte C, Gorboulev V, Koepsell H (2008) Cell free expression and functional reconstitution of eukaryotic drug transporters. *Biochemistry* 47:4552-4564

Kelly AE, Kranitz H, **Dötsch V**, Mullins RD (2006) Actin binding to the central domain of WASP/Scar proteins plays a critical role in the activation of the arp2/3 complex. *J Biol Chem* 281:10589-10597

Klammt C, Schwarz D, **Dötsch V**, Bernhard F (2007) Cell-free production of integral membrane proteins on a preparative scale. *Methods Mol Biol* 375:57-78

Klammt C, Schwarz D, Eifler N, Engel A, Piehler J, Haase W, Hahn S, **Dötsch V**, Bernhard F (2007) Cell-free production of G protein-coupled receptors for functional and structural studies. *J Struct Biol* 158:482-493

Klammt C, Schwarz D, Löhr F, Schneider B, **Dötsch V**, Bernhard F (2006) Cell-free expression as an emerging technique for the large scale production of integral membrane protein. *FEBS J* 273:4141-4153

Klammt C, Srivastava A, Eifler N, Junge F, Beyermann M, Schwarz D, Michel H, **Dötsch V**, Bernhard F (2007) Functional analysis of cell-free-produced human endothelin B receptor reveals transmembrane segment 1 as an essential area for ET-1 binding and homodimer formation. *FEBS J* 274:3257-3269

Kodama Y, Reese ML, Shimba N, Ono K, Kanamori E, **Dötsch V**, Noguchi S, Fukunishi Y, Suzuki E, Shimada I, Takahashi H (2011) Rapid identification of protein-protein interfaces for the construction of a complex model based on multiple unassigned signals by using time-sharing NMR measurements. *J Struct Biol* 174:434-442

Koeberle A, Rossi A, Zettl H, Pergola C, Dehm F, Bauer J, Greiner C, Reckel S, Hoernig C, Northoff H, Bernhard F, **Dötsch V**, Sautebin L, Schubert-Zsilavecz M, Werz O (2010) The Molecular

- Pharmacology and In Vivo Activity of 2-(4-Chloro-6-(2,3-dimethylphenylamino)pyrimidin-2-ylthio)octanoic acid (YS121), a Dual Inhibitor of Microsomal Prostaglandin E-2 Synthase-1 and 5-Lipoxygenase. *J Pharmacol Exp Ther* 332:840-848
- Koglin A, **Dötsch V**, Bernhard F (2010) Molecular engineering aspects for the production of new and modified biosurfactants Biosurfactants. Springer-Verlag Berlin, Berlin, pp 158-169 (Advances in Experimental Medicine and Biology vol 672)
- Koglin A, Klarmmt C, Trbovic N, Schwarz D, Schneider B, Schafer B, Lohr F, Bernhard F, **Dötsch V** (2006) Combination of cell-free expression and NMR spectroscopy as a new approach for structural investigation of membrane proteins. *Magn Reson Chem* 44:S17-S23
- Koglin A, Lohr F, Bernhard F, Rogov VV, Frueh DP, Strieter ER, Mofid MR, Guntert P, Wagner G, Walsh CT, Marahiel MA, **Dötsch V** (2008) Structural basis for the selectivity of the external thioesterase of the surfactin synthetase. *Nature* 454:907-911
- Koglin A, Mofid MR, Lohr F, Schafer B, Rogov VV, Blum MM, Mittag T, Marahiel MA, Bernhard F, **Dötsch V** (2006) Conformational switches modulate protein interactions in peptide antibiotic synthetases. *Science* 312:273-276
- Krstić I, Hänsel R, Romainczyk O, Engels JW, **Dötsch V**, Prisner TF (2011) Long-range distance measurements on nucleic acids in cells by pulsed EPR spectroscopy. *Angew Chem Int Edit* 50:5070-5074
- Ledwidge R, Hong B, **Dötsch V**, Miller SM (2010) NmerA of Tn501 mercuric ion reductase: structural modulation of the pK(a) values of the metal binding cysteine thiols. *Biochemistry* 49:8988-8998
- Lohr F, Hansel R, Rogov VV, **Dötsch V** (2007) Improved pulse sequences for sequence specific assignment of aromatic proton resonances in proteins. *J Biomol NMR* 37:205-224
- Lohr F, Reckel S, Stefer S, **Dötsch V**, Schmidt JM (2011) Improved accuracy in measuring one-bond and two-bond (15)N,(13)C(alpha) coupling constants in proteins by double-inphase/antiphase (DIPAP) spectroscopy. *J Biomol NMR* 50:167-190
- Ma Y, Munch D, Schneider T, Sahl HG, Bouhss A, Ghoshdastider U, Wang JF, **Dötsch V**, Wang XN, Bernhard F (2011) Preparative scale cell-free production and quality optimization of MraY homologues in different expression modes. *J Biol Chem* 286:38844-38853
- Matthies D, Haberstock S, Joos F, **Dötsch V**, Vonck J, Bernhard F, Meier T (2011) Cell-Free expression and assembly of ATP synthase. *J Mol Biol* 413:593-603
- Nomura AM, Marnett AB, Shimba N, **Dötsch V**, Craik CS (2006) One functional switch mediates reversible and irreversible inactivation of a herpesvirus protease. *Biochemistry* 45:3572-3579
- Novak I, Kirkin V, McEwan DG, Zhang J, Wild P, Rozenknop A, Rogov V, Lohr F, Popovic D, Occhipinti A, Reichert AS, Terzic J, **Dötsch V**, Ney PA, Dikic I (2010) Nix is a selective autophagy receptor for mitochondrial clearance. *EMBO Rep* 11:45-51
- Ou HD, Löhr F, Vogel V, Mäntele W, **Dötsch V** (2007) Structural evolution of C-terminal domains in the p53 family. *EMBO J* 26:3463-3473
- Pedo M, Lohr F, D'Onofrio M, Assfalg M, **Dötsch V**, Molinari H (2009) NMR Studies Reveal the Role of Biomembranes in Modulating Ligand Binding and Release by Intracellular Bile Acid Binding Proteins. *J Mol Biol* 394:852-863
- Petrosky KY, Lohr F, **Dötsch V** (2006) NMR assignment of the L27 heterodimer from LIN-2 and LIN-7 scaffold proteins. *J Biomol NMR* 36:15-15
- Rath P, Demange P, Saurel O, Tropis M, Daffe M, **Dötsch V**, Ghazi A, Bernhard F, Milon A (2011) Functional expression of the PorAH channel from corynebacterium glutamicum in cell-free expression systems: implications for the role of the naturally occurring mycolic acid modification. *J Biol Chem* 286:32525-32532

- Reckel S, Hansel R, Lohr F, **Dötsch V** (2007) In-cell NMR spectroscopy. *Prog Nucl Mag Res Sp* 51:91-101
- Reckel S, Sobhanifar S, Durst F, Lohr F, Shirokov VA, **Dötsch V**, Bernhard F (2010) Strategies for the cell-free expression of membrane proteins. *Methods Mol Biol* 607:187-212
- Reckel S, Sobhanifar S, Schneider B, Junge F, Schwarz D, Durst F, Lohr F, Guntert P, Bernhard F, **Dötsch V** (2008) Transmembrane segment enhanced labeling as a tool for the backbone assignment of alpha-helical membrane proteins. *P Natl Acad Sci USA* 105:8262-8267
- Reese ML, Dakoji S, Bredt DS, **Dötsch V** (2007) The guanylate kinase domain of the MAGUK PSD-95 binds dynamically to a conserved motif in MAP1a. *Nat Struct Mol Biol* 14:155-163
- Rogov VV, Lohr F, Rogova N, Klammt C, Koglin A, Bernhard F, **Dötsch V** (2007) NMR assignment of H-1, C-13 and N-15 resonances of the truncated Escherichia coli RcsC (700-949), including the phosphoreceiver domain. *J Biomol NMR* 38:165-165
- Rogov VV, Rogova NY, Bernhard F, Koglin A, Lohr F, **Dötsch V** (2006) A new structural domain in the Escherichia coli RcsC hybrid sensor kinase connects histidine kinase and phosphoreceiver domains. *J Mol Biol* 364:68-79
- Rogov VV, Rogova NY, Bernhard F, Lohr F, **Dötsch V** (2011) A disulfide bridge network within the soluble periplasmic domain determines structure and function of the outer membrane protein RCSF. *J Biol Chem* 286:18775-18783
- Rogov VV, Schmoe K, Löhr F, Rogova NY, Bernhard F, **Dötsch V** (2008) Modulation of the Rcs-mediated signal transfer by conformational flexibility. *Biochem Soc T* 36:1427-1432
- Rozenknop A, Rogov VV, Rogova NY, Lohr F, Guntert P, Dikic I, **Dötsch V** (2011) Characterization of the interaction of GABARAPL-1 with the LIR Motif of NBR1. *J Mol Biol* 410:477-487
- Schneider B, Junge F, Shirokov VA, Durst F, Schwarz D, **Dötsch V**, Bernhard F (2010) Membrane protein expression in cell-free systems. *Methods Mol Biol* 601:165-86
- Schwarz D, Daley D, Beckhaus T, **Dötsch V**, Bernhard F (2010) Cell-free expression profiling of E. coli inner membrane proteins. *Proteomics* 10:1762-1779
- Schwarz D, **Dötsch V**, Bernhard F (2008) Production of membrane proteins using cell-free expression systems. *Proteomics* 8:3933-3946
- Schwarz D, Junge F, Durst F, Frolich N, Schneider B, Reckel S, Sobhanifar S, **Dötsch V**, Bernhard F (2007) Preparative scale expression of membrane proteins in Escherichia coli-based continuous exchange cell-free systems. *Nat Protoc* 2:2945-2957
- Schwarz D, Klammt C, Koglin A, Lohr F, Schneider B, **Dötsch V**, Bernhard F (2007) Preparative scale cell-free expression systems: New tools for the large scale preparation of integral membrane proteins for functional and structural studies. *Methods* 41:355-369
- Serber Z, Selenko P, Hansel R, Reckel S, Lohr F, Ferrell JE, Wagner G, **Dötsch V** (2006) Investigating macromolecules inside cultured and injected cells by in-cell NMR spectroscopy. *Nat Protoc* 1:2701-2709
- Siemoneit U, Koeberle A, Rossi A, Dehm F, Verhoff M, Reckel S, Maier TJ, Jauch J, Northoff H, Bernhard F, **Dötsch V**, Sautebin L, Werz O (2011) Inhibition of microsomal prostaglandin E-2 synthase-1 as a molecular basis for the anti-inflammatory actions of boswellic acids from frankincense. *Br J Pharmacol* 162:147-162
- Sobhanifar S, Reckel S, Junge F, Schwarz D, Kai L, Karbyshev M, Lohr F, Bernhard F, **Dötsch V** (2010) Cell-free expression and stable isotope labelling strategies for membrane proteins. *J Biomol NMR* 46:33-43

Sobhanifar S, Schneider B, Löhr F, Gottstein D, Ikeya T, Mlynarczyk K, Pulawski W, Ghoshdastider U, Kolinski M, Filippek S, Güntert P, Bernhard F, **Dötsch V** (2010) Structural investigation of the C-terminal catalytic fragment of presenilin 1. *P Natl Acad Sci USA* 107:9644-9649

Sripathomsawat W, Tanpaiboon P, Heering J, **Dötsch V**, Hennekam RCM, Kantaputra P (2011) Phenotypic analysis of Arg227 mutations of TP63 with emphasis on dental phenotype and micturition difficulties in EEC syndrome. *Am J Med Genet A* 155A:228-232

Stefer S, Reitz S, Wang F, Wild K, Pang YY, Schwarz D, Bomke J, Hein C, Löhr F, Bernhard F, Denic V, **Dötsch V**, Sinning I (2011) Structural basis for tziel-anchored membrane protein biogenesis by the Get3-receptor complex. *Science* 333:758-762

Straub WE, Weber TA, Schafer B, Candi E, Durst F, Ou HD, Rajalingam K, Melino G, **Dötsch V** (2010) The C-terminus of p63 contains multiple regulatory elements with different functions. *Cell Death Dis* 1:8

Wagner S, Carpentier I, Rogov V, Kreike M, Ikeda F, Lohr F, Wu CJ, Ashwell JD, **Dötsch V**, Dikic I, Beyaert R (2008) Ubiquitin binding mediates the NF-kappa B inhibitory potential of ABIN proteins. *Oncogene* 27:3739-3745

Wild P, Farhan H, McEwan DG, Wagner S, Rogov VV, Brady NR, Richter B, Korac J, Waidmann O, Choudhary C, **Dötsch V**, Bumann D, Dikic I (2011) Phosphorylation of the autophagy receptor optineurin restricts salmonella growth. *Science* 333:228-233