

## Jürgen Brosius

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NATIONALITY, YEAR OF BIRTH: German, 1948

EDUCATION: 1971 Intermediate Examination Pharmacy, Wiesbaden (Germany)  
1974 State Examination Pharmacy, Frankfurt  
1976 Ph.D. Biochemistry, Berlin

### RESEARCH AND PROFESSIONAL EXPERIENCE

2004 - present	Evaluator for European Union grants
2015 - present	Editorial Board member "Scientific Reports"
2010 - present	Editorial Board member "PLoS ONE"
2009 - present	Associate Editor "PLoS Genetics"
2008 - present	Editorial Board member "International Journal of Integrative Biology"
2007 - present	Editorial Board member "Biology Direct"
2004 - present	Editorial Board member "RNA Biology"
2001 - present	Editorial Board member "RepBase Reports"
2009 - 2018	Editorial Board member "Mobile DNA"
2004 - 2012	Associate Editor "Journal of Molecular Evolution"
1986 - 2011	Editorial board member and European Editor "DNA and Cell Biology".

1985 - 1987	Cold Spring Harbor Laboratory, Instructor: "Advanced Molecular Cloning".
1989 - 1990	Above course with the same instructors at Mount Sinai School of Medicine. Course director: J.B.
1985 - 1994	Reviewer and/or member of NIH site visits and study sections.
1993 - 1994	Consultant and expert witness to patent law firms concerning biotechnology matters.
2019 - present	Western China Hospital, Sichuan University, Chengdu, China; Distinguished Professor of the Institutes for Systems Genetics
2015 - 2018	Brandenburg Medical School Theodor Fontane (MHB), Neuruppin, Germany; Visiting Professor and Extraordinary Senior Professor.
2013 - 2015	Senior Professor, Inst. of Experimental Pathology
1994 - 2013	Director, Institute of Experimental Pathology, Center for Molecular Biology of Inflammation (ZMBE), Westfälische Wilhelms-Universität WWU), Münster, Germany; University Professor. Research projects: RNAs as modular units of genome evolution and cellular function. Gene regulation, evolution, structure, sub-cellular location, and function of non-messenger RNPs in the nervous system. Small stable RNAs in genome projects. Retroposition as driving force in evolution. Evolutionary approaches to bioethical questions. Our laboratory provides the WWU campus with a comprehensive service generating transgenic, gene-depleted or gene-modified mouse models. This encompasses design and generation of DNA constructs, ES cell work, microinjections and genetic analysis of mice. Teaching includes "Biology for Medical Students" and "Advanced Topics in Molecular and Cell Biology".
1988 - 1994	Fishberg Research Center for Neurobiology, Mount Sinai School of Medicine, New York, Associate Professor. Research projects: Gene regulation, evolution, structure, sub-cellular location, and function of non-messenger RNPs in the nervous system. Transport and function of RNAs in dendrites of neurons. Regulation of alternative splicing of clathrin light chain mRNAs. Neural receptors and neuropeptide precursors. Development of multifunctional cloning and expression vector systems. Teaching responsibilities included courses in "Molecular Neurobiology" and "Molecular Biology" for graduate students.
1982 - 1988	Centre for Neurobiology & Behaviour, Columbia University, New York. Assistant Professor for Genetics and Development. Structure and anatomical localization of small non-messenger RNAs that are developmentally regulated in the rat nervous system. Molecular biology of receptors and neuropeptides that

modulate behaviour. Expression of foreign proteins in heterologous systems. Molecular genetics of coated vesicles. Teaching responsibilities included a variety of courses (e.g. "Eukaryotic Molecular Biology" and co-directorship of "Prokaryotic Molecular Biology" for graduate students.

1980 - 1982

Biological Laboratories, Harvard University,  
Postdoctoral fellow with Prof. W. Gilbert.  
Regulation, structure, function of transcription promoters and terminators *in vivo*. High level expression of eukaryotic genes in *E. coli*. Protein secretion. Structure, expression and evolution of interferon genes.

1977 - 1980

Division of Natural Sciences, University of California, Santa Cruz.  
Postdoctoral fellow with Prof. H.F. Noller.  
Structure function relationships of ribosomal RNA. Complete nucleotide sequence of a rRNA operon from *E. coli*. Secondary structure of rRNA. Human insulin gene.

1974 - 1977

Max-Planck-Institute for Molecular Genetics, Berlin, Germany.  
Graduate student with Prof. H.G. Wittmann  
Structure and function of the ribosome. Purification and micro sequence analysis of ribosomal proteins. Parameters determining protein-RNA interactions.

## **MEMBERSHIPS**

American Association for the Advancement of Science  
Society for Neuroscience  
RNA Society  
American Society for Microbiology  
International Society for Molecular Evolution

## **HONOURS AND AWARDS**

1977	Fogarty International Fellowship
1980	Fellowship of the Deutsche Forschungsgemeinschaft
1983	Alfred P. Sloan Research Fellowship
1984	Irma T. Hirschl Career Scientist Award
	Several NIH grants, several grants of DFG, BMBF, NGFN

**LIST OF PUBLICATIONS** (Abstracts, etc. not included; number of citations as of February 13, 2020 shown in bold; >100 citations are highlighted in yellow)

*h*-index (Web of Science): **75**, if all publications from my laboratory are included; otherwise: **66**, those with my authorship

- Brosius, J., Schiltz, E., Chen, R. (1975) **49**  
The primary structure of the 5S RNA binding protein L18 from *Escherichia coli* ribosomes. FEBS Lett. 56, 359-361.
- Brosius, J., Chen, R. (1976) **64**  
The primary structure of protein L16 located at the peptidyltransferase center of *Escherichia coli* ribosomes. FEBS Lett. 68, 105-109.
- Chen, R., Brosius, J., Wittmann-Liebold, B., Schäfer, W. (1977) **48**  
Occurrence of methylated amino acids as N-termini of proteins from *Escherichia coli* ribosomes. J. Mol. Biol. 111, 173-181.
- Brosius, J. (1978) **25**  
Primary structure of *Escherichia coli* ribosomal protein L31. Biochemistry 17, 501-508.
- Brosius, J., Arfsten, U. (1978) **9**  
Primary structure of protein L19 from the large subunit of *Escherichia coli* ribosomes. Biochemistry 17, 508-516.
- Newberry, V., Brosius, J., Garrett, R. (1978) **24**  
Fragment of protein L18 from the *Escherichia coli* ribosome that contains the 5S RNA binding site. Nucleic Acids Res. 5, 1753-1766.
- Brosius, J., Palmer, M.L., Kennedy, P.J., Noller, H.F. (1978) **2107**  
Complete nucleotide sequence of a 16S ribosomal RNA gene from *Escherichia coli*. Proc. Natl. Acad. Sci. U.S.A. 75, 4801-4805.
- Brosius, J., Dull, T. J. and Noller, H.F. (1980) **426**  
Complete nucleotide sequence of a 23S ribosomal RNA gene from *Escherichia coli*. Proc. Natl. Acad. Sci. U.S.A. 77, 201-204.
- Woese, C. R., Magrum, L. J., Gupta R., Siegel, R. B., Stahl, D. A., Kop, J., Crawford, N., Brosius, J., Gutell, R., Hogan, J. J., Noller, H. F. (1980) **288**  
Secondary structure model for bacterial 16S ribosomal RNA: phylogenetic, enzymatic and chemical evidence. Nucleic Acids Res. 8, 2275-2293.
- Ullrich, A., Dull, T. J., Gray, A., Brosius, J., Sures, I. (1980) **132**  
Genetic variation in the human insulin gene. Science 209, 612-615.
- Brosius, J., Dull, T. J., Sleeter, D. D., Noller H. F., (1981) **1531**  
Gene organization and primary structure of a ribosomal RNA operon from *Escherichia coli*. J. Mol. Biol. 148, 107-127.

- Pribnow, D., Sigurdson, D. C., Gold, L., Swebilius Singer, B., Napoli, C., Brosius, J., Dull, T. J., Noller, H. F. (1981) **147**  
 rII cistrons of the bacteriophage T4: DNA sequence around the intercistronic divide and positions of genetic landmarks. *J. Mol. Biol.* 149, 337-376.
- Brosius, J., Ullrich A., Raker, M. A., Gray, A., Dull, T. J., Gutell, R. R., Noller, H. F. (1981) **454**  
 Construction and fine mapping of recombinant plasmids containing the *rnmB* ribosomal RNA operon of *E. coli*. *Plasmid* 6, 112-118.
- Noller, H. F., Kop, J., Wheaton, V., Brosius, J., Gutell, R. R., Kopylov, A., M., Dohme, F., Herr, W., Stahl, D. A., Gupta, R., Woese, C. R. (1981) **321**  
 Secondary structure model for 23S ribosomal RNA. *Nucleic Acids Res.* 9, 6167-6189.
- Talmadge, K., Brosius, J., Gilbert, W. (1981) **67**  
 An internal signal sequence directs secretion and processing of proinsulin in bacteria. *Nature* 294, 176-178.
- Brosius, J., Walz, A. (1982) **10**  
 DNA sequences flanking an *E. coli* insertion element IS2 in the yeast *TRP5* gene. *Gene* 17, 223-228.
- Brosius, J., Cate, R. L., Perlmutter, A. P. (1982) **222**  
 Precise location of two promoters for the beta-lactamase gene of pBR322; S1 mapping of RNA isolated from *E. coli* or synthesized *in vitro*. *J. Biol. Chem.* 257, 9205-9210.
- Amann, E., Brosius, J., Ptashne, M. (1983) **671**  
 Vectors bearing a hybrid *trp-lac* promoter useful for the regulated expression of cloned genes in *Escherichia coli*. *Gene* 25, 167- 178.
- Brosius, J. (1984) **430**  
 Plasmid vectors for the selection of promoters. *Gene* 27, 151-160.
- Brosius, J. (1984) **168**  
 Toxicity of an overproduced foreign gene product in *Escherichia coli* and its use in plasmid vectors for the selection of transcription terminators. *Gene* 27, 161-172.
- Barta, A., Steiner, G., Brosius, J., Noller, H. F., Kuechler, E. (1984) **158**  
 Identification of a site on 23S ribosomal RNA located at the peptidyltransferase center, *Proc. Natl. Acad. Sci. U.S.A.* 81, 3607-3611.
- Brosius, J., Holy, A. (1984) **501**  
 Regulation of ribosomal RNA promoters with a synthetic *lac* operator, *Proc. Natl. Acad. Sci. U.S.A.* 81. 6929-6933.
- Thayer, G. C., Brosius, J., (1985) **12**  
*In vivo* transcription from deletion mutations introduced near *E. coli* ribosomal RNA promoter P2. *Mol. Gen. Genet.* 199, 55-58.
- Mulligan, M. E., Brosius, J., and McClure, W. R. (1985) **121**  
 Characterization *in vitro* of the effects of spacer-length on the activity of *E. coli* RNA polymerase at the *tac* promoter. *J. Biol. Chem.* 260, 3529-3538.

- Brosius, J., Erfle, M., Storella, J. (1985) **172**  
Spacing of the -10 and -35 regions in the *tac* promoter: Effect on its *in vivo* activity. J. Biol. Chem. 260, 3539-3541.
- Amann, E., Brosius, J. (1985) **385**  
'ATG vectors' for regulated high-level expression of cloned genes in *Escherichia coli*. Gene 40. 183-190.
- Henco., K., Brosius, J., Fujisawa, A., Fujisawa, J-I., Haynes, J. R., Hochstadt, J., Kovacic, T., Pasek, M., Schamböck, A., Schmid, J., Todokoro, K., Wälchli, M., Nagata, S. Weissmann, C. (1985) **190**  
Structural relationship of human interferon alpha genes and pseudogenes. J. Mol. Biol. 185, 227-260.
- Mocchetti, I., Einstein, R., Brosius, J. (1986) **113**  
Putative diazepam-binding inhibitor peptide: cDNA clones from rat. Proc. Natl. Acad. Sci. U.S.A 83, 7221-7225.
- Sherbany, A. A., Parent, A. S., Brosius, J. (1987) **42**  
Rat Calmodulin cDNA. DNA 6, 267-272.
- Kirchhausen, T., Scarmato, P., Harrison, S. C., Monroe, J. J., Chow, E. P., Mattaliano, R. J., Ramachandran, K. L., Smart, J. E., Ahn, A. H., Brosius, J. (1987) **87**  
Clathrin light chains LCA and LCB are similar, polymorphic, and share repeated heptad motifs. Science 236, 320-324.
- Kirchhausen, T., Harrison, S. C., Chow, E. P., Mattaliano, R. J., Ramachandran, K. L., Smart, J. E., Brosius, J. (1987) **89**  
Clathrin heavy chain: Molecular cloning and complete primary structure. Proc. Natl. Acad. Sci. U.S.A. 84, 8805-8809.
- DeChiara, T. M., Brosius, J. (1987) **118**  
Neural BC1 RNA: cDNA clones reveal nonrepetitive sequence content. Proc. Natl. Acad. Sci. U.S.A. 84, 2624-2628.
- Alho, H., Fremeau, R. T., Tiedge, H., Wilcox, J., Bovolin, P., Brosius, J., Roberts, J. L., Costa, E. (1988) **100**  
Diazepam binding inhibitor gene expression: Location in brain and peripheral tissues of rat. Proc. Natl. Acad. Sci. U.S.A. 85, 7018-7022.
- Thurieau, C., Brosius, J., Burne, C., Jolles, P., Keen, J., Mattaliano, R.J., Ping Chow, Ramachandran, K. L., Kirchhausen, T. (1988) **43**  
Molecular cloning and complete amino acid sequence of AP50, an assembly protein associated with clathrin coated vesicles. DNA 7, 663-669.
- Brosius, J. (1989) **145**  
Superlinkers in cloning and expression vectors. DNA 8, 759-777.
- Stamm, S., Gillo, B., Brosius, J. (1991) **3**  
Temperature recording from thermocyclers used for PCR. Biotechniques 10, 430-435.

- Stamm, S., Brosius, J. (1991) **9**  
 SANCHORED PCR: PCR with cDNA coupled to solid phase. *Nucleic Acids Res.* 19, 1350.
- Tiedge, H., Fremeau, R. T., Weinstock, P.H., Arancio, O., Brosius, J. (1991) **207**  
 Dendritic location of neural BC1 RNA. *Proc. Natl. Acad. Sci. U.S.A.* 88, 2093-2097.
- Brosius, J. (1991) **266**  
 Retroposons - seeds of evolution. *Science* 251, 753.
- Kennedy, J.L., Honer, W.G., Kaufmann, C.A., Martignetti, J.A., Brosius, J., Kidd, K.K. (1992) **1**  
 Two RFLPs near HOX2@/NGFR at locus D17S444E. *Nucleic Acids Res.* 20, 1171.
- Brosius, J., Konings, D. (1992) **1**  
 Familial Alzheimer's mutation: mRNA structure revisited. *Neurobiol. Aging* 13, 449-451.
- Tiedge, H., Dräger, U.C., Brosius, J. (1992) **8**  
 Murine BC1 RNA in dendritic fields of retinal inner plexiform layer. *Neurosci. Lett.* 141, 136-138.
- Stamm, S., Casper, D., Dinsmore, J., Kaufmann, C.A., Brosius, J., Helfman, D.M. (1992) **38**  
 Clathrin light chain B: Gene structure and neuron-specific splicing. *Nucleic Acids Res.* 20, 5097-5103.
- Brosius, J., Gould, S.J. (1992) **214**  
 On Genomenclature: A comprehensive (and respectful) taxonomy for pseudogenes and other 'junk DNA'. *Proc. Natl. Acad. Sci. U.S.A.* 89, 10706-10710.
- Tiedge, H., Chen, W., Brosius, J. (1993) **164**  
 Primary structure, neural-specific expression, and dendritic location of human BC200 RNA. *J. Neurosci.* 13, 2382-2390.
- Miller, M.W., Beushausen, S., Cropper, E.C., Eisinger, K., Stamm, S., Vilim, F.S., Vitek, A., Zajc, A., Kupfermann, I., Brosius, J., Weiss, K.R. (1993) **50**  
 The buccalin-related neuropeptides: Isolation and characterization of an *Aplysia* cDNA clone encoding a family of peptide cotransmitters. *J. Neurosci.* 13, 3346-3357.
- Miller, M.W., Beushausen, S., Vitek, A., Stamm, S., Kupfermann, I., Brosius, J., Weiss, K.R. (1993) **51**  
 The myomodulin-related neuropeptides: Characterization of a gene encoding a family of peptide cotransmitters in *Aplysia*. *J. Neurosci.* 13, 3358-3367.
- Longo, F., Martignetti, J.A., Le Beau, J.M., Zhang, J.S., Barnes, J.P., Brosius, J. (1993) **71**  
 LAR receptor-linked tyrosine phosphatase: mRNA expression is developmentally regulated in rat brain and modulated by NGF and cell density *in vitro*. *J. Biol. Chem.* 268, 26503-26511.
- Tiedge, H., Zhou, A., Thorn, N., Brosius, J. (1993) **48**  
 Neural BC1 RNA in hypothalamo-neurohypophyseal axons. *J. Neurosci.* 13, 4214-4219.
- Brosius, J., Gould, S.J. (1993) **12**



- Molecular constructivity. *Nature* 365, 102.
- Martignetti, J.A., Brosius, J. (1993) **88**  
Neural BC1 RNA as an evolutionary marker: Guinea pig remains a rodent. *Proc. Natl. Acad. Sci. U.S.A.* 90, 9698-9702.
- Martignetti, J.A., Brosius, J. (1993) **114**  
BC200 RNA: A neural RNA polymerase III product encoded by a monomeric Alu element. *Proc. Natl. Acad. Sci. U.S.A.* 90, 11563-11567.
- Kim, J., Martignetti, J.A., Shen, M.R., Brosius, J., Deininger, P.L. (1994) **102**  
Rodent BC1 RNA gene as a master gene for ID element amplification. *Proc. Natl. Acad. Sci. U.S.A.* 91, 3607-3611.
- Gonatas, J.O., Mourelatos, Z., Stieber, A., Lane, W.S., Brosius, J., Gonatas, N.K. (1995) **50**  
MG-160, a membrane sialoglycoprotein of medial cisternae of the rat Golgi apparatus, binds basic fibroblast growth factor and exhibits a high level of sequence identity to a chicken fibroblast growth factor receptor. *J. Cell. Sci.* 108, 457-467.
- Martignetti, J.A., Brosius, J. (1995) **50**  
BC1 RNA: transcriptional analysis of a neural cell-specific RNA polymerase III transcript. *Mol. Cell. Biol.* 15, 1642-1650.
- Fu, D.-Y., Skryabin, B.V., Brosius, J., Robakis, N.K. (1995) **19**  
Molecular cloning and characterization of the mouse dopamine D<sub>3</sub> receptor gene: An additional intron and a mRNA variant. *DNA Cell Biol.* 14, 485-492.
- Adari, H., Andrews, B., Ford, P.J., Hanning, G., Brosius, J., Makrides, S.C. (1995) **7**  
Expression of the human T cell receptor V $\beta$ 5.3 in *Escherichia coli* by thermal induction of the *trc* promoter. Nucleotide sequence of the *lacTs* gene. *DNA Cell Biol.* 14, 945-950.
- Brosius, J., Tiedge, H. (1995) **67**  
Reverse transcriptase - mediator of genomic plasticity. *Virus Genes* 11, 163-179.
- Cheng, J.-G., Tiedge, H., Brosius, J. (1996) **45**  
Identification and characterization of BC1 RNP particles. *DNA Cell Biol.* 15, 549-559.
- Brosius, J. (1996) **21**  
More *Haemophilus* and *Mycoplasma* genes. *Science* 271, 1302.
- Tiedge, H., Brosius, J. (1996) **168**  
Translational machinery in dendrites of hippocampal neurons in culture. *J. Neurosci.* 16, 7171-7181.
- Shen, M.R., Brosius, J., Deininger, P.L. (1997) **24**  
BC1 RNA, the transcript from a master gene for ID element amplification, is able to prime its own reverse transcription. *Nucleic Acids Res.* 25, 1641-1648.
- Chen, W., Heierhorst, J., Brosius, J., Tiedge, H. (1997) **30**  
Expression of neural BC1 RNA: Induction in murine tumors. *Eur. J. Cancer* 33, 288-292.

- Cheng, J.-G., Tiedge, H., Brosius, J. (1997) **19**  
 Expression of dendritic BC200 RNA component of a 11.4 S ribonucleoprotein particle, is conserved in humans and simians. *Neurosci. Lett.* 224, 206-210.
- Chen, W., Böcker, W., Brosius, J., Tiedge, H. (1997) **137**  
 Expression of neural BC200 RNA in human tumours. *J. Pathol.* 183, 345-351.
- Taylor, B.A., Navin, A., Skryabin, B.V., Brosius, J. (1997) **2**  
 Localization of the mouse gene (*Bc1*) encoding neural BC1 RNA near the fibroblast growth factor 3 locus (*Fgf3*) on distal Chromosome 7. *Genomics* 144, 153-154.
- op de Bekke, A., Kiefmann, M., Kremerskothen, J., Vornlocher, H.-P., Sprinzl, M., Brosius, J. (1998) **2**  
 The 10Sa RNA gene of *Thermus thermophilus*. *DNA Seq.* 9, 31-35.
- Kremerskothen, J., Zopf, D., Walter, P., Cheng, J.-G., Nettermann, M., Niewerth, U., Maraia, R.J., Brosius, J. (1998) **28**  
 Heterodimer SRP9/14 is an integral part of the neural BC200 RNP in primate brain. *Neurosci. Lett.* 245, 123-126.
- Skryabin, B.V., Kremerskothen, J., Vassilacopoulou, D., Disotell, T.R., Kapitonov, V., Jurka, J., Brosius, J. (1998) **38**  
 The BC200 RNA gene and its neural expression are conserved in anthropoidea. *J. Mol. Evol.* 47, 677-685.
- Kremerskothen, J., Nettermann, M., op de Bekke, A., Bachmann, M., Brosius, J. (1998) **30**  
 Identification of the human autoantigen La/SS-B as a BC1/BC200 RNA-binding protein. *DNA Cell Biol.* 17, 751-759.
- Basile, V., Vicente, A., Martignetti, J.A., Skryabin, B.V., Brosius, J., Kennedy, J.L. (1998) **8**  
 Assignment of the human BC200 gene (BCYRN1) to chromosome 2p16 by radiation hybrid mapping. *Cytogenet. Cell Genet.* 82, 271-272.
- Muslimov, I.A., Banker, G.A., Brosius, J., Tiedge, H. (1998) **67**  
 Activity-dependent regulation of dendritic BC1 RNA in hippocampal neurons in culture. *J. Cell. Biol.* 141, 1601-1611.
- Jung, M.-Y., Skryabin, B.V., Arai, M., Abbondanzo, S., Fu, D.-Y., Brosius, J., Robakis, N.K., Polites, H.G., Pintar, J.E. and Schmauss, C. (1999) **115**  
 Potentiation of the D<sub>2</sub>-mutant motor phenotype in mice lacking dopamine D<sub>2</sub> and D<sub>3</sub> receptors. *Neuroscience* 91, 911-924.
- Brosius, J. (1999) **272**  
 RNAs from all categories generate retrosequences that may be exapted as novel genes or regulatory elements. *Gene* 238, 115-134.
- Brosius, J. (1999) **20**  
 Transmutation of tRNA over time. *Nat. Genet.* 22, 8-9.
- Brosius, J. (1999) **43**  
 Many G-coupled receptors are encoded by retrogenes. *Trends Genet.* 14, 304-305.

- Brosius, J. (1999) **130**  
 Genomes were forged by massive bombardments with retroelements and retrosequences. *Genetica* 107, 209-238.
- Lühn, K., Makalowski, W., Brosius, J. (2000) **1**  
 A tRNA pseudogene in the Archaeon *Methanococcus jannaschii*. *DNA Seq.* 11, 97-99.
- Brosius, J., Kreitman, M. (2000) **8**  
 Eugenics – evolutionary nonsense? *Nat. Genet.* 25, 253.
- Cavaillé, J., Buiting, K., Kiefmann, M., Lalande, M., Brannan, C.I., Horsthemke, B., Bachellerie, J.-P., Brosius, J., Hüttenhofer, A. (2000) **398**  
 Identification of brain-specific and imprinted small nucleolar RNA genes exhibiting an unusual genomic organization. *Proc. Natl. Acad. Sci. U.S.A.* 97, 14311-14316.
- Lin, Y., Brosius, J., Tiedge, H. (2001) **18**  
 Neuronal expression of BC1 RNA: Correlation with GAP-43 mRNA. *Neuroscience* 103, 465-479.
- Rozhdestvensky, T., Kopylov, A., Brosius, J., Hüttenhofer, A. (2001) **55**  
 Neuronal BC1 RNA structure: evolutionary conversion of a tRNA<sup>Ala</sup> domain into an extended stem-loop structure. *RNA* 7, 722-730.
- Hüttenhofer, A., Kiefmann, M., Meier-Ewert, S., O'Brien, J., Lehrach, H., Bachellerie, J.-P., Brosius, J. (2001) **238**  
 RNomics: an experimental approach that identifies 201 candidates for novel, small, non-messenger RNAs in mouse. *EMBO J.* 20, 2943-2953.
- Kuryshv, V.Yu., Skryabin B.V., Kremerskothen, J., Jurka, J., Brosius, J. (2001) **34**  
 Birth of a gene: Locus of neuronal BC200 snmRNA in three prosimians and human BC200 pseudogenes as archives of change in the *Anthropoidea* lineage. *J. Mol. Biol.* 309, 1049-1066.
- Brosius, J. (2001) **18**  
 tRNAs in the spotlight during protein biosynthesis. *Trends Biochem. Sci.* 26, 653 – 656.
- Tang, T.H., Rozhdestvensky, T.S., Clouet d'Orval, B., Bortolin, M.-L., Huber, H., Charpentier, B., Branlant, C., Bachellerie, J.-P., Brosius, J., Hüttenhofer A. (2002) **83**  
 RNomics in Archaea reveals a further link between splicing of archaeal introns and rRNA processing. *Nucleic Acids Res.* 30, 921-930.
- Muslimov, I.A., Lin, Y., Heller, M., Brosius, J., Zakeri, Z., Tiedge, H. (2002) **23**  
 A small RNA in testis and brain: Implications for male germ cell development. *J. Cell Sci.* 115, 1243-1250.
- Tang, T.-H., Bachellerie, J.-P., Rozhdestvensky, Bortolin, M.-L., T., Huber, H., Drungowski, M., Elge, T., Brosius, J., Hüttenhofer, A. (2002) **232**  
 Identification of 86 candidates for small non-messenger RNAs from the archaeon *Archaeoglobus fulgidus*. *Proc. Natl. Acad. Sci. U.S.A.* 99, 7536-7541.

- Muddashetty, R.S., Khanam, T., Kondrashov, A., Bundman, M., Iacoangeli, A., Kremerskothen, J., Duning, K., Barnekow, A., Hüttenhofer, A., Tiedge, H., Brosius, J. (2002) **105**  
Poly(A) binding protein is associated with neuronal BC1 and BC200 ribonucleoprotein particles. *J. Mol. Biol.* 321, 433-445.
- Marker, C., Zemann, A., Terhörst, T., Kiefmann, M., Kastenmayer, J.P., Green, P., Bachellerie, J.-P., Brosius, J., Hüttenhofer, A. (2002) **97**  
Experimental RNomics: identification of 140 candidates for small, non-messenger RNAs in the plant *Arabidopsis thaliana*. *Curr. Biol.* 12, 2002-2013.
- Rozhdestvensky, T.S., Tang, T.H., Tchirkova, I.V., Brosius, J., Bachellerie, J.-P., Hüttenhofer, A. (2003) **158**  
Binding of L7Ae protein to the K-turn of archaeal snoRNAs: a shared RNA binding motif for C/D and H/ACA box snoRNAs in Archaea. *Nucleic Acids Res.* 31, 869-877.
- Brosius, J. (2003) **23**  
Gene duplication and other evolutionary strategies: from the RNA world to the future. *J. Struct. Funct. Genomics* 3, 1-17.
- Yuan, G., Klämbt, C., Bachellerie, J.-P., Brosius, J., Hüttenhofer, A. (2003) **76**  
RNomics in *Drosophila melanogaster*: identification of 66 candidates for novel non-messenger RNAs. *Nucleic Acids Res.* 31, 2495-2507
- Brosius, J. (2003) **101**  
The contribution of RNAs and retroposition to evolutionary novelties. *Genetica* 118, 99-116.
- Brosius, J. (2003) **5**  
From Eden to a hell of uniformity? Directed evolution in humans. *BioEssays* 25, 815-821.
- Skryabin, B.V., Sukonina, V., Jordan, U., Lewejohann, L., Sachser, N., Muslimov, I., Tiedge, H., Brosius, J. (2003) **47**  
Neuronal untranslated BC1 RNA: targeted gene elimination in mice. *Mol. Cell. Biol.* 23, 6435-6441.
- Lewejohann, L., Skryabin, B.V., Sachser, N., Prehn, C., Heiduschka, P., Thanos, S., Jordan, U., Vyssotski, A.L., Pleskacheva, M.G., Lipp, H.-P., Tiedge, H., Brosius, J., Prior, H. (2004) **108**  
Role of a neuronal small non-messenger: behavioral alterations in BC1 RNA-deleted mice. *Behav. Brain Res.* 154, 273-289.
- Schneider, C., Will, C.L., Brosius, J., Frilander, M.J., Lührmann, R. (2004) **21**  
Identification of an evolutionarily divergent U11 small nuclear ribonucleoprotein particle in *Drosophila*. *Proc. Natl. Acad. Sci. U.S.A.* 101, 9584-9589.
- Singer, S.S., Männel, D.N., Hehlhans, T., Brosius, Schmitz, J. (2004) **60**  
From “junk” to gene: *Curriculum vitae* of a primate receptor isoform gene. *J. Mol. Biol.* 341, 883-886.
- Cristofanilli, M., Thanos, S., Brosius, J., Kindler, S., Tiedge, H. (2004) **13**

- Neuronal MAP2 mRNA: Species-dependent differential dendritic targeting competence. *J. Mol. Biol.* 341, 927-934.
- Schmitz, J., Churakov, G., Zischler, H., Brosius, J. (2004) **37**  
A novel class of mammalian-specific tailless retroseudogenes. *Genome Res.* 14, 1911-1915.
- Brosius, J., Tiedge, H. (2004) **27**  
RNomenclature. *RNA Biol.* 1, 81-83.
- Kriegs, J.O., Schmitz, J., Makalowski, W., Brosius, J. (2005) **6**  
Does the AD7c-NTP locus encode a protein? *Biochim. Biophys. Acta* 1727, 1-4.
- Churakov, G., Smit, A.F.A., Brosius, J., Schmitz, J. (2005) **31**  
A novel abundant family of transposable elements (DAS-SINEs) in the nine-banded armadillo (*Dasypus novemcinctus*). *Mol. Biol. Evol.* 22, 886-893.
- Brosius, J. (2005) **34**  
Echoes from the past – are we still in an RNP world? *Cytogenet. Genome Res.* 110, 8-24.
- Brosius, J. (2005) **84**  
Waste not, want not – transcript excess in multicellular Eukaryotes. *Trends Genet.* 21, 287-288.
- Brosius, J. (2005) **15**  
Disparity, causation, adaptation, exaptation, and contingency at the genome level. *Paleobiology* 31, 1-16.
- Ludwig, A., Rozhdestvensky, T.S., Kuryshev, V.Yu., Schmitz, J., Brosius, J. (2005) **24**  
An unusual primate locus that attracted two independent Alu insertions *and* facilitates their transcription. *J. Mol. Biol.* 350, 200-214.
- Krull, M., Brosius, J., Schmitz, J. (2005) **98**  
Alu SINE exonization: en route to protein coding function. *Mol. Biol. Evol.* 22, 1702-1711.
- Kondrashov, A.V., Kiefmann, M., Ebnet, K., Khanam, T., Muddashetty, R.S., Brosius, J. (2005) **78**  
Inhibitory effect of naked neural BC1 RNA or BC200 RNA on eukaryotic *in vitro* translation systems is reversed by poly(A)-binding protein (PABP). *J. Mol. Biol.* 353, 88-103.
- Kriegs, J.O., Churakov, G., Kiefmann, M., Jordan, U., Brosius, J., Schmitz, J. (2006) **183**  
Retroposed elements as archives for the evolutionary history of placental mammals. *PLoS Biol.* 4, 537-544.
- Zemann, A., op de Bekke, A., Kiefmann, M., Brosius, J., Schmitz, J. (2006) **58**  
Evolution of small nucleolar RNAs in nematodes. *Nucleic Acids Res.* 34, 2676-2685.
- Muslimov, I.A., Iacoangeli, A., Brosius, J., Tiedge, H. (2006) **36**  
Spatial codes in dendritic BC1 RNA. *J. Cell Biol.* 174, 427-439.

- Farwick, A., Jordan, U., Fuellen, G., Huchon, D., Catzeflis, F., Brosius, J., Schmitz, J. (2006) **19**  
Automated scanning for phylogenetically informative transposed elements in rodents. *Syst. Biol.*, 55, 936-948.
- Khanam, T., Muddashetty, R.S., Kahvejian, A., Sonenberg, N., Brosius, J. (2006) **24**  
Poly(A)-binding protein binds to A-rich sequences via RNA-binding domains 1+2 and 3+4. *RNA Biol.* 3, 170-177.
- Khanam, T., Rozhdestvensky, T.S., Bundman, M., Galiveti, C.R., Handel, S., Sukonina, V., Jordan, U., Brosius, J., Skryabin, B.V. (2007) **25**  
Two primate-specific small non-protein-coding RNAs in transgenic mice: neuronal expression, subcellular localization and binding partners. *Nucleic Acids Res.* 35, 529-539.
- Kriegs, J.O., Churakov, G., Jurka, J., Brosius, J., Schmitz, J. (2007) **139**  
Evolutionary history of 7SL RNA-derived SINEs in Supraprimates. *Trends Genet.* 23, 158-161.
- Huchon, D., Chevret, P., Jordan, U., Kilpatrick, W., Ranwez, V., Jenkins, P.D., Brosius, J., Schmitz, J. (2007) **101**  
Multiple molecular evidences for a living mammalian fossil. *Proc. Natl. Acad. Sci. U.S.A.* 104, 7495-7499.
- Rozhdestvensky, T.S., Crain, P.F., Brosius, J. (2007) **10**  
Isolation and posttranscriptional modification analysis of native BC1 RNA from mouse brain. *RNA Biol.* 4, 11-15.
- Krull, M., Petrusma, M., Makalowski, W., Brosius, J., Schmitz, J. (2007) **66**  
Functional persistence of exonized Mammalian-wide Interspersed Repeat elements. *Genome Res.* 17, 1139-1145.
- Khanam, T., Raabe, C.A., Kiefmann, M., Handel, S., Skryabin, B.V., Brosius, J. (2007) **12**  
Can ID repetitive elements serve as cis-acting dendritic targeting elements? An in vivo Study. *PLoS ONE* 2(9): e961. doi:10.1371/journal.pone.0000961
- Möller-Krull, M., Delsuc, F., Churakov, G., Marker, C., Superina, M., Brosius, J., Douzery, E.J.P., Schmitz, J. (2007) **54**  
Retroposed elements and their flanking regions resolve the evolutionary history of Xenarthran mammals (Armadillos, Anteaters and Sloths). *Mol. Biol. Evol.* 24, 2573-2582.
- Kriegs, J.O., Matzke, A., Churakov, G., Kuritzin, A., Mayr G., Brosius, J., Schmitz, J. (2007) **56**  
Waves of genomic hitchhikers characterize the evolution of gamebirds (Aves: Galliformes). *BMC Evol. Biol.* 7, 190
- Skryabin, B.V., Gubar, L., Seeger, B., Pfeiffer, J., Handel, S., Robeck, T., Karpova, E., Rozhdestvensky, T.S., Brosius, J. (2007) **112**  
Deletion of MBII-85 snoRNA gene cluster in mice results in postnatal growth retardation. *PLoS Genet.* 3, 2529-2539.

- Iacoangeli, A., Rozhdestvensky, T.S., Dolzhanskaya, N., Tournier, B., Schütt, J., Brosius, J., Denman, R.B., Khandjian, E.W., Kindler, S., Tiedge, H. (2008) **55**  
On BC1 RNA and the fragile X mental retardation protein. *Proc. Natl. Acad. Sci. U.S.A.* 105, 734-739.
- Warren, W.C., Hillier, L.W., Marshall Graves, J.A., Birney, E., Ponting, C.P., Grützner, F., Belov, K., Miller, W., Clarke, L., Chinwalla, A.T., Yang, S.-P., Heger, A., Locke, D., Miethke, P., Waters, P.D., Veyrunes, F., Fulton, L., Fulton, B., Graves, T., Wallis, J., Puente, X.S., López-Otín, C., Ordóñez, G.R., Eichler, E.E., Chen, L., Cheng, Z., Deakin, J.E., Alsop, A., Thompson, K., Kirby, P., Papenfuss, A.T., Wakefield, M.J., Olender, T., Lancet, D., Huttley, G.A., Smit, A.F.A., Pask, A., Temple-Smith, P., Batzer, M.A., Walker, J.A., Konkel, M.K., Harris, R.S., Whittington, C.M., Wong, E.S.W., Gemmell, N., Buschiazzi, E., Vargas-Jentzsch, I.M., Merkel, A., Schmitz, J., Zemann, A., Churakov, G., Kriegs, J.O., Brosius, J., Murchison, E., Sachidanandam, R., Smith, C., Hannon, G., Tsend-Ayush, E., McMillan, D., Attenborough, R., Rens, W., Ferguson-Smith, M., Lefèvre, C.M., Sharp, J.A., Nicholas, K.R., Ray, D.A., Kube, M., Reinhard, R., Pringle, T.H., Taylor, J., Jones, R.C., Nixon, B., Dacheux, J.-L., Niwa, H., Sekita, Y., Huang, X., Stark, A., Kheradpour, P., Kellis, M., Flicek, P., Chen, Y., Webber, C., Hardison, R., Nelson, J., Hallsworth-Pepin, K., Delehaunty, K., Markovic, C., Minx, P., Feng, Y., Kremitzki, C., Mitreva, M., Glasscock, J., Wylie, T., Wohldmann, P., Thiru, P., Nhan, M.N., Pohl, C.S., Smith, S.M., Hou, S., Nefedev, M., de Jong, P.J., Renfree, M., Mardis, E.R., Wilson, R.K. (2008) **469**  
Genome analysis of the platypus reveals unique signatures of evolution. *Nature* 453, 175-183.
- Schmitz, J., Zemann, A., Churakov, G., Kuhl, H., Grützner, F., Reinhardt, R., Brosius, J. (2008) **44**  
Retroposed SNOfall – a mammalian-wide comparison of platypus snoRNAs. *Genome Res.* 18, 1005-1010.
- Möller-Krull, M., Zemann, A., Roos, C., Brosius, J., Schmitz, J. (2008) **34**  
Beyond DNA: RNA editing and steps toward Alu-exonization in primates. *J. Mol. Biol.* 382, 601-609.
- Baertsch R, Diekhans M, Kent WJ, Haussler D, Brosius J. (2008) **60**  
Retroposition contributions to the evolution of the human genome. *BMC Genomics* 9, 466.
- Churakov, G., Kriegs, J.O., Baertsch R, Zemann, A., Brosius J., Schmitz, J. (2009) **60**  
Mosaic retroposon insertion patterns in placental mammals. *Genome Res.* 19, 868-875.
- Brosius, J. (2009) **12**  
The fragmented gene. *Ann. N.Y. Acad. Sci.* 1178, 186-193.
- Raabe, C.A., Sanchez, C.P., Randau, G., Robeck, T., Skryabin, B.V., Chinni, S.V., Kube, M., Reinhardt, R., Ng, G.-H., Manickam, R., Kuryshv, V.Y., Lanzer, M., Brosius, J., Tang, T.-H., Rozhdestvensky, T.S. (2010) **54**  
A global view of the non-protein coding transcriptome in *Plasmodium falciparum*. *Nucleic Acids Res.* 38, 608-617.
- Galiveti, C., Rozhdestvensky, T.S., Brosius, J., Lehrach, H., Konthur, Z. (2010) **57**  
Application of housekeeping npcRNAs for quantitative expression analysis of human transcriptome by real-time PCR. *RNA* 16, 450-461.

- Abu-Qatouseh, L.F., Chinni, S.V., Seggewiss, J., Proctor, R.A., Brosius, J., Rozhdestvensky, T.S., Peters, G., von Eiff C., Becker K. (2010) **80**  
 Identification of differentially expressed small non-protein-coding RNAs in *Staphylococcus aureus* displaying both the normal and the small-colony variant phenotype. *J. Mol. Med.* 88, 565-575.
- Churakov, G., Sadasivuni, M.K., Rosenbloom, K.R., Huchon, D., Brosius, J., Schmitz, J. (2010) **90**  
 Rodent Evolution: Back to the Root. *Mol. Biol. Evol.* 27, 1315-1326.
- Chinni, S.V., Raabe, C.A., Zakaria, R., Randau, G., Hock, H.C., Manickam, R., Zemmann, A., Brosius, J., Tang, T.H., Rozhdestvensky, T.S. (2010) **32**  
 Experimental identification and characterization of 97 novel npcRNA candidates in *Salmonella enterica* serovar Typhi. *Nucleic Acids Res.*, 38, 5893-5908.
- Kriegs, J.O., Zemmann, A., Churakov, G., Matzke, A., Ohme, M., Zischler, H., Brosius, J., Kryger, U., Schmitz, J. (2010) **11**  
 Retroposon insertions provide insights into deep lagomorph evolution. *Mol Biol Evol.* 27, 2678-2681.
- Nilsson, M.A., Churakov, G., Sommer, M., Tran, V., Brosius, J., Schmitz, J. (2010) **98**  
 Tracking marsupial evolution using archaic genomic retroposon insertions. *PLoS Biol.* 8, e1000437.
- Churakov, G., Grundmann, N., Kuritzin, A., Brosius, J., Makałowski, W., Schmitz, J. (2010) **30**  
 A novel web-based TinT application and the chronology of the Primate Alu retroposon activity. *BMC Evol. Biol.* 10, 376.
- Raabe, C.A., Hoe, C.H., Randau, G., Brosius, J., Tang, T.H., Rozhdestvensky, T.S. (2011) **27**  
 The rocks and shallows of deep RNA sequencing: Examples in the *Vibrio cholerae* RNome. *RNA* 17, 1357-1366.
- Suh, A., Kriegs, J.O., Brosius, J., Schmitz, J. (2011) **26**  
 Retroposon insertions and the chronology of avian sex chromosome evolution. *Mol. Biol. Evol.* 28, 2993-2997.
- Suh, A., Paus, M., Kiefmann, M., Churakov, G., Franke, F.A., Brosius, J., Kriegs, J.O., Schmitz, J. (2011) **104**  
 Mesozoic retroposons reveal parrots as the closest living relatives of passerine bird. *Nature Communications* 2, 443; DOI: 10.1038/ncomms1448
- Matzke, A., Churakov, G., Berkes, P., Arms, E.M., Kelsey, D., Brosius, J., Kriegs, J.O., Schmitz, J. (2012) **26**  
 Retroposon insertion patterns in birds: Strong evidence for an extensive incomplete lineage sorting era. *Mol. Biol. Evol.* 29, 1497-1501.
- Suh, A., Kriegs, J.O., Donnellan, S. Brosius, J., Schmitz, J. (2012) **17**  
 A universal method for the study of CR1 retroposons in non-model bird genomes. *Mol. Biol. Evol.*, 29, 2899-2903.



- Zemann, A., Churakov, G., Donnellan, S., Grützner, F., Zhao, F., Brosius, J., Schmitz, J. (2013) **5**  
Ancestry of the Australian Termitivorous Numbat. *Mol. Biol. Evol.* 30, 1041-1045.
- Hartig G., Churakov, G., Warren, W., Brosius, J., Makalowski, W., Schmitz, J. (2013) **26**  
Retrophylogenomics Place Tarsiers on the Evolutionary Branch of Anthropoids. *Sci. Rep.* 3, 1756. doi: 10.1038/srep01756.
- Suh, A., Brosius, J., Schmitz, J. Kriegs, J.O. (2013) **34**  
The genome of a Mesozoic paleovirus and the evolution of hepatitis B viruses. *Nature Commun.* 4, 1791. doi: 10.1038/ncomms2798
- Mo, D., Raabe, C.A., Reinhardt, R., Brosius, J., Rozhdestvensky, T.S. (2013) **7**  
Alternative processing as evolutionary mechanism for the origin of novel non-protein coding RNAs. *Genome Biol. Evol.* 5, 2061-2071.
- Raabe, C.A., Tang, T.H., Brosius, J., Rozhdestvensky, T.S. (2014) **97**  
Biases in small RNA deep sequencing data. *Nucleic Acids Res.* 42, 1414-1426; doi:10.1093/nar/gkt1021
- Brosius, J. (2014) **6**  
The Persistent Contributions of RNA to Eukaryotic Gen(om)e Architecture and Cellular Function. *Cold Spring Harb. Perspect. Biol.* doi: 10.1101/cshperspect.a016089.
- Suh, A., Churakov, G., Ramakodi, M.P., Platt, R.N., Jurka, J., Kojima, K.K., Caballero, J., Smit, A.F., Fleet, K.A., Hoffmann, F.G., Brosius, J., Green, R.E., Braun, E.L., Ray, D.A., Schmitz, J. (2015) **29**  
Multiple lineages of ancient CR1 retroposons shaped the early genome evolution of amniotes. *Genome Biol. Evol.* 7, 205-217.
- Noll, A., Grundmann, N., Churakov, G., Brosius, J., Makalowski, W., Schmitz, J. (2015) **4**  
GPAC - Genome Presence/Absence Compiler: A Web Application to comparatively visualize multiple genome-level changes. *Mol. Biol. Evol.* 32, 275-286.
- Noll, A., Raabe, C.A., Churakov, G., Brosius, J., Schmitz, J. (2015) **6**  
Ancient traces of tailless retropseudogenes in therian genomes. *Genome Biol Evol.* 7, 889-900.
- Boergeling, Y., Rozhdestvensky, T., Schmolke, M., Resa-Infante, P., Robeck, T., Randau, G., Wolff, T., Gülsah, G., Brosius, J., Ludwig, S. (2015) **11**  
Evidence for a novel mechanism of Influenza virus-induced type I Interferon expression by a defective RNA-encoded protein. *PLoS Pathog.* 11(5): e1004924. doi:10.1371/journal.ppat.1004924.
- Doronina, L., Churakov, G., Shi, J., Brosius, J., Baertsch, R., Clawson, H., Schmitz, J. (2015) **12**  
Exploring massive incomplete lineage sorting in Arctoids (Laurasiatheria, Carnivora). *Mol. Biol. Evol.* 32, 3194-3204. doi: 10.1093/molbev/msv188. Epub 2015 Sep 3. PMID: 26337548
- Brosius, J., Raabe, C.A. (2016) **5**  
What is an RNA? A top layer for RNA classification. *RNA Biol.* 13, 140-144.

- Rozhdestvensky, T.S., Robeck, T., Galiveti, C.R., Raabe, C.R., Seeger, B., Wolters, A., Gubar, L.V., Brosius, J., Skryabin, B.V. (2016) **7**  
 Maternal transcription of non-protein coding RNAs from the PWS-critical region rescues growth retardation in mice. *Sci. Rep.* 6:20398. doi: 10.1038/srep20398.
- Robeck, T., Skryabin, B.V., Rozhdestvensky, T.S., Skryabin, A.B., Brosius, J., (2016) **5**  
 BC1 RNA motifs required for dendritic transport in vivo. *Sci. Rep.* 6:28300. doi: 10.1038/srep28300.
- Schmitz, J., Noll, A., Raabe, C., Churakov, G., Voss, R., Kieffmann, M., Rozhdestvensky, T.S., Brosius, J., Baertsch, R., Clawson, H., Roos, C., Zimin, A., Minx, P., Montague, M.J., Wilson, R.K., Warren, W.C. (2016) **9**  
 New insights from the basal haplorrhine primate genome of *Tarsius syrichta* reveals unusual insertions. *Nature Commun.*, 10.1038/ncomms12997
- Suh, A., Bachg, S., Donnellan, S., Joseph, L., Brosius, J., Kriegs, J.O., Schmitz, J. (2017) **2**  
 De-novo emergence of SINE retroposons during the early evolution of passerine birds. *Mobile DNA* 8, 21 doi: 10.1186/s13100-017-0104-1
- Pande A., Brosius J., Makalowska, I., Makalowski, W., Raabe, C.A. (2018) **1**  
 Transcriptional interference by small transcripts in proximal promoter regions. *Nucleic Acids Res.* doi: 10.1093/nar/gkx1242
- Sparwel, M., Doronina, L., Churakov, G., Stegemann, A., Brosius, J., Robinson, T.J., Schmitz, J. (2019) **1**  
 The Volcano Rabbit in the Phylogenetic Network of Lagomorphs. *Genome Biol. Evol.* 1, 11-16. doi: 10.1093/gbe/evy257.
- Raabe, C.A., Voss, R., Kummerfeld, D.M., Brosius J., Galiveti, C.R., Wolters, A., Seggewiss, J., Hüge, A., Skryabin, B.V., Rozhdestvensky, T.S. (2019) **0**  
 Ectopic expression of Snord115 in choroid plexus interferes with editing but not splicing of 5-Ht2c receptor pre-mRNA in mice. *Sci. Rep.* Mar 12;9(1):4300. doi: 10.1038/s41598-019-39940-6.
- Hohoff, C., Zhang, M., Ambree, O., Kravchenko, M., Buschert, J., Kerkenberg, N., Gorinski, N., Abdel Galil, D., Schettler, C., vom Werth, K.L., Wewer, M.F.J., Schneider, I., Grotegerd, D., Wachsmuth, L., Faber, C., Skryabin, B.V., Brosius, J., Ponimaskin, E., Zhang, W. (2019) **0**  
 Deficiency of the palmitoyl acyltransferase ZDHHC7 impacts brain and behavior of mice in a sex-specific manner. *Brain Struct. and Funct.* 224, 2213-2230. <https://doi.org/10.1007/s00429-019-01898-6>
- Mo, D., Li1, X., Raabe, C.A., Cui, D., J Vollmar, J.F., Rozhdestvensky, T.S., Skryabin, B.V., Brosius, J. (2019) **0**  
 A universal approach to investigate circRNA protein coding function. *Sci. Rep.* 9, 11684. <https://doi.org/10.1038/s41598-019-48224-y>
- Skryabin, B.V., Gubar, L., Seeger, B., Kaiser, H., Roth, J., Meuth, S., Pavenstädt, H., Pap, T., Brosius, J., Rozhdestvensky, T.S. (2019) **0**  
 CRISPR/Cas9 – mediated genome editing: unwanted head-to-tail multiplications of DNA templates at sites of integration. *Science Advances*, in press.

Pande, A., Brosius, J., Makalowski, W., Raabe, C.A. (2019) **0**  
Transcriptional interference at human enhancer domains: A computational perspective. *Nucleic Acids Res.*, in revision

The work (or part thereof) leading to the following papers has been carried out in our laboratory:

Stamm, S., Longo, F.M. (1990) **3**  
Direct sequencing of PCR products using the Maxam-Gilbert method. *Genet. Anal. Tech.* 7, 142-143.

Tiedge, H. (1991) **26**  
The use of UV light as a cross-linking agent for cells and tissue sections in *in situ* hybridization. *DNA Cell Biol.* 10, 143-147.

Harris, D.A., Sherbany, A.A. (1991) **8**  
Cloning of non-polyadenylated RNAs from rat brain. *Mol. Brain Res.* 9, 83-90.

Skryabin, B., Vassilacopoulou D. (1993) **1**  
A simple and fast method for cloning and analyzing polymerase chain-reaction products *Genetic Analysis - Biomolecular Engineering* 10, 113-115.

Wirth, J., Back, E., Hüttenhofer, A., Nothwang, H.-G., Lich, C., Gross, S., Menzel, C., Schinzel, A., Kioschis, P., Tommerup, N., Ropers, H.-H., Horsthemke, B., Buiting, K. (2001) **48**  
A translocation breakpoint cluster disrupts the newly defined 3' end of the SNURF-SNRPN transcription unit on chromosome 15. *Hum. Mol. Genet.* 10, 201-210.

Mergenthaler, J., Haverkamp, W., Hüttenhofer, A., Skryabin, B., Mußhoff, U., Borggrefe, M., Speckmann, E.-J., Breithardt, G., Madeja, M. (2001) **32**  
Blocking effects of the antiarrhythmic drug propafenone on the HERG potassium channel. *Naunyn-Schmiedberg's Archives of Pharmacology* 363, 472-480.

Cavaillé, J., Vitali, P., Basyuk, E., Hüttenhofer, A. and Bachellerie, J.-P. (2001) **58**  
A novel brain-specific box C/D small nucleolar RNA processed from tandemly repeated introns of a non-coding RNA gene in rats. *J. Biol. Chem.* 276, 26374-26383.

Runte, M., Hüttenhofer, A., Groß, S., Kiefmann, M., Horsthemke, B., Buiting, K. (2001) **254**  
The *IC-SNURF-SNRPN* transcript serves as a host for multiple small nucleolar RNA species and as an antisense RNA for *UBE3A*. *Hum. Mol. Genet.* 10, 2687-2700.

Holtwick, R., Gotthardt, M., Skryabin, B., Steinmetz, M., Potthast, R., Zetsche, B., Hammer, R.E., Herz, J., Kuhn, M. (2002) **208**  
Smooth muscle-selective deletion of guanylyl cyclase-A prevents the acute but not chronic effects of ANP on blood pressure. *Proc. Natl. Acad. Sci. U.S.A.* 99, 7142-7147.

- Pennekamp, P., Karcher, C., Fischer, A., Schweickert, A., Skryabin, B., Horst, J., Blum, M., Dworniczak, B. (2002) **310**  
The ion channel polycystin-2 is required for left-right axis determination in mice. *Curr. Biol.* 12, 938-943.
- Bachellerie, J.-P., Cavallé, J., Hüttenhofer A. (2002) **428**  
The expanding snoRNA world. *Biochimie* 84, 775-790.
- Brown, J.W.S., Echeverria, M., Qu, L.H., Lowe, T.M., Bachellerie, J.-P., Hüttenhofer, A., Kastenmayer, P., Green, P.J., Shaw, P., Marshall, D.F. (2003) **63**  
Plant snoRNA database. *Nucleic Acids Res.* 31, 432-435.
- Manitz, M.P., Horst, B., Seeliger, S., Strey, A., Skryabin, B.V., Gunzer, M., Frings, W., Schonlau, F., Roth, J., Sorg, C., Nacken, W. (2003) **209**  
Loss of S100A9 (MRP14) results in reduced interleukin-8-induced CD11b surface expression, a polarized microfilament system, and diminished responsiveness to chemoattractants in vitro. *Mol. Cell. Biol.* 23, 1034-1043.
- Holtwick, R., van Eickels, M., Skryabin, B.V., Baba, H.A., Bubikat, A., Begrow, F., Schneider, M.D., Garbers, D.L., Kuhn, M. (2003) **241**  
Pressure-independent cardiac hypertrophy in mice with cardiomyocyte-restricted inactivation of the atrial natriuretic peptide receptor guanylyl cyclase-A. *J. Clin. Invest.* 111, 1399-1407.
- Vogel, J., Bartels, V., Tang, T.H., Churakov, G., Slagter-Jager, J.G., Hüttenhofer, A., Wagner, E.G.H. (2003) **314**  
RNomics in *Escherichia coli* detects new sRNA species and indicates parallel transcriptional output in bacteria. *Nucleic Acids Res.* 31, 6435-6443.
- Vitali, P., Royo, H., Seitz, H., Bachellerie, J.P., Hüttenhofer, A., Cavallé, J. (2003) **61**  
Identification of 13 novel human modification guide RNAs. *Nucleic Acids Res.* 31, 6543-6551.
- Schmitz, J., Zischler H. (2003) **41**  
A novel family of tRNA-derived SINEs in the colugo and two new retrotransposable markers separating dermopterans from primates. *Mol. Phylogenet. Evol.* 28, 341-349.
- Loser, K., Mehling, A., Apelt, J., Ständer, S., Andres, P.G., Reinecker, H.C., Eing, B.R., Skryabin, B.V., Varga, G., Schwarz, T., Beisert, S. (2004) **16**  
Enhanced contact hypersensitivity and antiviral immune responses *in vivo* by keratinocyte-targeted overexpression of IL-15. *Eur. J. Immunol.* 34, 2022-2031
- Skryabin, B.V., Holtwick, R., Fabritz, L., Kruse, M.N., Veltrup, I., Stypmann, J., Kirchhof, P., Sabrane, K., Bubikat, A., Voß, M., Kuhn, M. (2004) **17**  
Hypervolemic Hypertension in Mice With Systemic Inactivation of the (Floxed) Guanylyl Cyclase-A Gene by  $\mu$ MHC-Cre-Mediated Recombination. *Genesis* 39, 288-298.
- Roos, C., Schmitz, J., Zischler, H. (2004) **151**  
Primate jumping genes elucidate strepsirrhine phylogeny. *Proc. Natl. Acad. Sci. U.S.A.* 101, 10650-10654.

- Schmitz, J., Roos, C., Zischler, H. (2005) **53**  
Primate phylogeny: molecular evidence from retroposons. *Cytogenet. Genome Res.* 108, 26-37.
- Schmitz, J., Piskurek, O., Zischler, H. (2005) **44**  
Forty million years of independent evolution: A mitochondrial gene and its corresponding nuclear pseudogene in primates. *J. Mol. Evol.* 61, 1-11.
- Tang, T.H., Polacek, N., Zywicki, M., Huber, H., Brugger, K., Garrett, R., Bachellerie, J.P., Hüttenhofer, A. (2005) **150**  
Identification of novel non-coding RNAs as potential antisense regulators in the archaeon *Sulfolobus solfataricus*. *Mol. Microbiol.* 55, 469-481.
- Sabrane, K., Kruse, M.N., Fabritz, L., Zetsche, B., Mitko, D., Skryabin, B.V., Zwiener, M., Baba, H.A., Yanagisawa, M., Kuhn, M. (2005) **103**  
Vascular endothelium is critically involved in the hypotensive and hypovolemic actions of atrial natriuretic peptide. *J. Clin. Invest.* 115, 1666-1674.
- Willkomm, D.K., Minnerup, J., Hüttenhofer, A., Hartmann, R.K. (2005) **50**  
Experimental RNomics in *Aquifex aeolicus*: Identification of small non-coding RNAs and the putative 6S RNA homolog. *Nucleic Acids Res.* 33, 1949-1960.
- Kuryshv, V.Y., Vorobyov, E., Zink, D., Schmitz, J., Rozhdestvensky, T.S., Münstermann, E., Ernst, U., Wellenreuther, R., Moosmayer, P., Bechtel, S., Schupp, I., Horst, J., Korn, B., Poustka, A., Wiemann, S. (2006) **19**  
An anthropoid-specific segmental duplication on human chromosome 1q22: Structure and evolution of the affected genes. *Genomics* 88, 143-151.
- Lung, B., Zemann, A., Madej, M., Schuelke, M., Techritz, S., Ruf, S., Bock, R., Hüttenhofer, A. (2006) **111**  
Identification of small non-coding RNAs from mitochondria and chloroplasts. *Nucleic Acids Res.* 34, 3842-3852.
- Dworniczak B., Skryabin B., Tchinda .J., Heuck S., Seesing F.J., Metzger D., Chambon P., Horst J., Pennekamp P. **14**  
(2007) Inducible Cre/loxP recombination in the mouse proximal tubule. *Nephron Exp Nephrol.* 106, e11-e20.
- Chen, S., Rozhdestvensky, T.S., Collins, L.J., Schmitz, J., Penny, D. (2007) **21**  
Combined experimental and computational approach to identify non-protein-coding RNAs in the deep-branching eukaryote *Giardia intestinalis*. *Nucleic Acids Res.* 35, 4619-4628.
- Qiu, H., Taudien, S., Herlyn, H., Schmitz, J., Zhou, Y., Chen, G., Roberto, R., Rocchi, M., Platzer, M., Wojnowski, L. (2008) **16**  
CYP3 phylogenomics: evidence for positive selection of CYP3A4 and CYP3A7. *Pharmacogenetics and Genomics* 18, 53-66.
- Bak, M., Silaharoglu, A., Møller, M., Christensen, M., Rath, M.F., Skryabin, B., Tommerup, N., Kauppinen, S. (2008) **333**  
microRNA expression in the adult mouse central nervous system. *RNA* 14, 432-444.

- Friedrichs, F., Henckaerts, L., Vermeire, S., Kucharzik, T., Seehafer, T., Möller-Krull, M., Bornberg-Bauer, E., Stoll, M., Weiner, J. (2008) **7**  
The Crohn's disease susceptibility gene *DLG5* as a member of the CARD interaction network. *J. Mol. Med.* 86, 423-432.
- Hartmann, M., Skryabin, B.V., Müller, T., Gazinski, A., Schröter, J., Gaßner, B., Nikolaev, V.O., Bünemann, M., Kuhn, M. (2008) **9**  
Alternative splicing of the guanylyl cyclase-A receptor modulates atrial natriuretic peptide signaling. *J. Biol. Chem.* 283, 28313-28320.
- Bäumer, N., Tickenbrock, L., Tschanter, P., Lohmeyer, L., Diederichs, S., Bäumer, S., Skryabin, B.V., Zhang, F., Agrawal-Singh, S., Köhler, G., Berdel, W.E., Serve, H., Koschmieder, S., Müller-Tidow, C. (2011) **10**  
Inhibitor of CDG interacting with cyclin A1 (*INCA1*) regulates proliferation and is repressed by oncogenic signaling. *J. Biol. Chem.* 286, 28210-28222.
- Klaiber, M., Dankworth, B., Kruse, M., Hartmann, M., Nikolaev, V.O., Yang, R.B., Völker, K., Gassner, B., Oberwinkler, H., Feil, R., Freichel, M., Groschner, K., Skryabin, B.V., Frantz, S., Birnbaumer, L., Pongs, O., Kuhn, M. (2011) **29**  
A cardiac pathway of cyclic GMP-independent signaling of guanylyl cyclase A, the receptor for atrial natriuretic peptide. *Proc. Natl. Acad. Sci. U.S.A.* 108, 18500-18505.
- Erpenbeck, D., Schmitz, J., Churakov, G., Huchon, D., Wörheide, G., Degnan, B.M. (2012) **0**  
First evidence of miniature transposable elements in sponges (Porifera). *Hydrobiologia* 687, 43-47.
- Lippe, R., Ohl, K., Varga, G., Rauen, T., Crispin, J.C., Juang, Y.T., Kuerten, S., Tacke, F., Wolf, M., Roebrock, K., Vogl, T., Verjans, E., Honke, N., Ehrchen, J., Foell, D., Skryabin, B., Wagner, N., Tsokos, G.C., Roth, J., Tenbrock, K. (2012) **22**  
*CREM $\alpha$*  overexpression decreases IL-2 production, induces a TH17 phenotype and accelerates autoimmunity. *J. Mol. Cell. Biol.* 4, 121-123.
- Schmitz, J. (2012) SINEs as driving forces in genome evolution. *Genome Dyn.* 7, 92-107.  
doi: 10.1159/000337117.
- Camacho-Vanegas, O., Camacho, S.C., Till, J., Miranda-Lorenzo, I., Terzo, E., Ramirez, M.C.M., Schramm, V., Cordovano, G., Watts, G., Mehta, S., Kimonis, V., Hoch, B., Philibert, K.D., Raabe, C.A., Bishop, D.F., Glucksman, M.J., Martignetti, J.A. (2012) **20**  
Primate genome gain and loss: An autosomal dominant bone dysplasia/muscular dystrophy/bone cancer syndrome resulting from mutation of retroviral-derived *MTAP* transcripts. *Am. J. Hum. Genet.* 90, 614-627.
- Schmeisser, M.J., Ey, E., Kuebler, A., Bockmann, J., Shiban, E., Spilker, C., Balschun, D., Skryabin, B.V., tom Dieck, S., Smalla, K.H., Montag, D., Leblond, C., Faure, P., Torquet, N., Le Sourd, A.M., Wegener, S., Stempel, A.V., Shoichet, S.A., Schmitz, D., Kreutz, M.R., Bourgeron, T., Gundelfinger, E.D., Boeckers, T.M. (2012) **302**  
Hyperactivity and autistic-like behaviours in mice lacking *ProSAP1/Shank2*. *Nature* 486, 256-260. doi:10.1038/nature11015

- Khayrullina, G.A., Raabe, C.A., Hoe, C.H., Becker, K., Reinhardt, R., Tang, T.H., Rozhdestvensky, T.S., Kopylov, A.M. (2012) **9**  
 Transcription analysis and small non-protein coding RNAs associated with bacterial ribosomal protein operons. *Curr. Med. Chem.* 19:5187-5198.
- Suh, A. (2012) **0**  
 A retroposon-based view on the temporal differentiation of sex chromosomes. *Mob. genet. Elements* 2, 168-162.
- Hoe, C. H., Raabe, C.A., Rozhdestvensky, T.F., Tang, T.H. (2013) **63**  
 Bacterial sRNAs: Regulation in stress. *Int. J. Med. Microbiol.* 303, 217-229.
- Quiskamp, N., Poeter, M., Raabe, C.A., Hohenester, U.M., König, S., Gerke, V., Rescher, U. (2013) **10**  
 The tumor suppressor annexin A10 is a novel component of nuclear paraspeckles. *Cell. Mol. Life Sc.*, DOI 10.1007/s00018-013-1375-4.
- Retser, E., Schied, T., Skryabin, B.V., Vogl, T., Kanczler, J.M., Hamann, N., Niehoff, A., Hermann, S., Eisenblätter, M., Wachsmuth, L., Pap, T., van Lent, P.L., Loser, K., Roth, Zaucke, F., Ludwig, S., Wixler, V. (2013). **12**  
 Doxycycline-induced expression of transgenic human tumor necrosis factor  $\alpha$  in adult mice results in psoriasis-like arthritis. *Arthritis Rheum.* 65, 2290-2300. doi: 10.1002/art.38026.
- Vogt-Eisele, A., Krüger, C., Duning, K., Weber, D., Spoelgen, R., Pitzer, C., Plaas, C., Eisenhardt, G., Meyer, A., Vogt, G., Krieger, M., Handwerker, E., Wennmann, D.O., Weide, T., Skryabin, B.V., Klugmann, M., Pavenstädt, H., Huentelmann, M.J., Kremerskothen, J., Schneider, A. (2013) **37**  
 KIBRA (Kidney/BRAin protein) regulates learning and memory and stabilizes Protein kinase M $\zeta$ . *J Neurochem.* 128, 686-700.
- Frank, S., Skryabin, B.V., Greber, B. (2013) **27**  
 A modified TALEN-based system for robust generation of knock-out human pluripotent stem cell lines and disease models. *BMC Genomics* 9, 773.
- Muslimov I.A., Tuzhilin A., Tang T.H., Wong R.K., Bianchi R., Tiedge H. (2014) **2**  
 Interactions of noncanonical motifs with hnRNP A2 promote activity-dependent RNA transport in neurons. *J. Cell Biol.* 205, 493-510.
- Wennmann, D.O., Schmitz, J., Wehr, M.C., Krahn, M.P., Koschmal, N., Gromnitza, S., Schulze, U., Weide, T., Chekuri, A., Skryabin, B.V., Gerke, V., Pavenstädt, H., Duning, K., Kremerskothen, J. (2014) **24**  
 Evolutionary and molecular facts link the WWC protein family to Hippo signaling. *Mol. Biol. Evol.* 31, 1710-23. doi: 10.1093/molbev/msu115.
- Poeter, M., Brandherm, I., Rossaint, J., Rosso, G., Shahin, V., Skryabin, B.V., Zarbock, A., Gerke, V., Rescher, U. (2014) **22**  
 Annexin A8 controls leukocyte recruitment to activated endothelial cells via cell surface delivery of CD63. *Nat. Commun.* 5:3738. doi: 10.1038/ncomms4738.
- Faria, D., Kunzelmann, K., Schreiber, R., Skryabin, B., Rock, J. (2014) **0**

Anoctamins form the intestinal secretory Ca<sup>2+</sup> dependent Cl<sup>-</sup> channel. *Acta Physiol. (Oxf)* 210, 208-210.

Galiveti, C.R., Raabe, C.A., Konthur, Z., Rozhdestvensky, T.S. (2014) **11**  
Differential regulation of non-protein coding RNAs from Prader-Willi Syndrome locus. *Sci. Rep.* 4, doi:10.1038/srep06445

Green, R.E., Braun, E.L., Armstrong, J., Earl, D., Nguyen, N., Hickey, G., Vandewege, M.W., St John, J.A., Capella-Gutiérrez, S., Castoe, T.A., Kern, C., Fujita, M.K., Opazo, J.C., Jurka, J., Kojima, K.K., Caballero, J., Hubley, R.M., Smit, A.F., Platt, R.N., Lavoie, C.A., Ramakodi, M.P., Finger Jr., J.W., Suh, A., Isberg, S.R., Miles, L., Chong, A.Y., Jaratlerdsiri, W., Gongora, J., Moran, C., Iriarte, A., McCormack, J., Burgess, S.C., Edwards, S.V., Lyons, E., Williams, C., Breen, M., Howard, J.T., Gresham, C.R., Peterson, D.G., Schmitz, J., Pollock, D.D., Haussler, D., Triplett, E.W., Zhang, G., Irie, N., Jarvis, E.D., Brochu, C.A., Schmidt, C.J., McCarthy, F.M., Faircloth, B.C., Hoffmann, F.G., Glenn, T.C., Gabaldón, T., Paten, B., Ray, D.A. (2014) **134**  
Three crocodylian genomes reveal ancestral patterns of evolution among archosaurs. *Science* 346, 1335+ DOI: 10.1126/science.1254449.

Schreiber, R., Faria, D., Skryabin, B.V., Wanitchakool, P., Rock, J.R., Kunzelmann, K. (2015) **37**  
Anoctamins support calcium-dependent chloride secretion by facilitating calcium signaling in adult mouse intestine. *Pflugers Arch.* 467, 1203-1213.

Wixler, V., Cromme, C., Retser, E., Meyer, L.H., Smyth, N., Mühlenberg, K., Korb-Pap, A., Koers-Wunrau, C., Sotsios, Y., Bassel-Duby, R., Baeten, D., Tak, P.P., Niederreiter, B., Redlich, K., Bertrand, J., Skryabin, B.V., Ludwig, S., Pap, T. (2015) **8**  
FHL2 regulates the resolution of tissue damage in chronic inflammatory arthritis. *Ann. Rheum. Dis.* 74, 2216-2223 doi: 10.1136/annrheumdis-2013-205061.

Erdmann, F., Kügler, S., Blaesse, P., Lange, M., Skryabin, B.V., Pape, H.C., Jüngling, K. (2015) **13**  
Neuronal Expression of the Human Neuropeptide S Receptor NPSR1 Identifies NPS-Induced Calcium Signaling Pathways. *PLoS ONE* e0117319.

Catania, F., Schmitz, J. (2015) **6**  
On the path to genetic novelties: insights from programmed DNA elimination and RNA splicing. *Wiley Interdiscip Rev RNA.* 2015 Sep-Oct;6(5):547-61. doi: 10.1002/wrna.1293.

Warren, W.C., Jasinska, A.J., García-Pérez, R., Svardal, H., Tomlinson, C., Rocchi, M., Archidiacono, N., Capozzi, O., Minx, P., Montague, M.J., Kyung, K., Hillier, L.W., Kremitzki, M., Graves, T., Chiang, C., Hughes, J., Tran, N., Huang, Y., Ramensky, V., Choi, O.W., Jung, Y.J., Schmitt, CA, Juretic, N, Wasserscheid, J, Turner, TR, Wiseman, RW, Tuscher, JJ, Karl, JA, Schmitz, J.E., Zahn, R., O'Connor, D.H., Redmond, E., Nisbett, A., Jacquelin, B., Müller-Trutwin, M.C., Brenchley, J.M., Dione, M., Antonio, M., Schroth, G.P., Kaplan, J.R., Jorgensen, M.J., Thomas, G.W., Hahn, M.W., Raney, B.J., Aken, B., Nag, R., Schmitz, J., Churakov, G., Noll, A., Stanyon, R, Webb, D, Thibaud-Nissen, F, Nordborg, M, Marques-Bonet, T, Dewar, K, Weinstock, G.M., Wilson, R.K., Freimer, N.B. (2015) **7**  
The genome of the vervet (*Chlorocebus aethiops sabaeus*). *Genome Res.* 25, 1921-1933. doi: 10.1101/gr.192922.115. Epub 2015 Sep 16. PMID: 26377836

Kuritzin, A., Kischka, T., Schmitz, J., Churakov, G. (2016) **12**



Incomplete Lineage Sorting and Hybridization Statistics for Large-Scale Retroposon Insertion Data. *PLoS Comp. Biol.* e1004812; DOI: 10.1371/journal.pcbi.1004812

- Kathum, O.A., Schröder, T., Anhlan, D., Nordhoff, C., Liedmann, S., Pande, A., Mellmann, A., Ehrhardt, C., Wixler, V., Ludwig, S. (2016) **0**  
Phosphorylation of influenza A virus NS1 protein at threonine 49 suppresses its interferon antagonistic activity. *Cellular Microbiology*, 18, 784-791.
- Mason, V.C., Li G., Minx, P., Schmitz, J., Churakov, G., Doronina, L., Melin, A.D., Dominy, N.J., Lim, N.T., Springer, M.S., Wilson, R.K., Warren, W.C., Helgen, K.M., Murphy, W.J. (2016) **29**  
Genomic analysis reveals hidden biodiversity within colugos, the sister group of primates. *Sci. Adv.* 2, e1600633. doi: 10.1126/sciadv.1600633.
- Kuehnl, A., Musiol, A., Raabe, C.A., Rescher, U. (2016) **9**  
Emerging functions as host cell factors – an encyclopedia of annexin-pathogen interactions. *Biol. Chem* 397, 949-959. doi: 10.1515/hsz-2016- 0183..
- Doronina, L., Matzke, A., Churakov, G., Stoll, M., Hüge, A., Schmitz, J. (2017) **7**  
The beaver's phylogenetic lineage illuminated by retroposon reads. *Sci. Rep.* 7, 43562. doi: 10.1038/srep43562.
- Stolle, A.S., Norkowski, S., Körner, B., Schmitz, J., Lüken, L., Frankenberg, M., Rüter, C., Schmidt, M.A. (2017) **0**  
T3SS-Independent Uptake of the Short-Trip Toxin-Related Recombinant NleC Effector of Enteropathogenic *Escherichia coli* Leads to NF- $\kappa$ B p65 Cleavage. *Front. Cell. Infect. Microbiol.* 7:119. doi: 10.3389/fcimb.2017.00119.
- Doronina, L., Churakov, G., Kuritzin, A., Shi, J., Baertsch, R., Clawson, H., Schmitz, J. (2017) **7**  
Speciation network in Laurasiatheria: retrophylogenomic signals. *Genome Res.* 27, 997-1003. doi: 10.1101/gr.210948.116. Epub 2017 Mar 15.
- Kanniappan, P., Ahmed, S.A., Rajasekaram, G., Marimuthu, C., Ch'ng, E.S., Lee, L.P., Raabe, C.A., Rozhdestvensky, T.S., Tang, T.H. (2017) **0**  
RNomic identification and evaluation of npcTB\_6715, a non-protein-coding RNA gene as potential biomarker for the detection of *Mycobacterium tuberculosis*. *J. Cell. Mol. Med.* 21, 2276-2283. doi: 10.1111/jcmm.13148.
- Feigin, C.Y., Newton, A.H., Doronina, L., Schmitz, J., Hipsley, C.A., Mitchell, K.J., Gower, G., Llamas, B., Soubrier, J., Heider, T.N., Menzies, B.R., Cooper, A., O'Neill, R.J., Pask, A.J. (2018) **16**  
Genome of the Tasmanian tiger provides insights into the evolution and demography of an extinct marsupial carnivore. *Nat. Ecol. Evol.* 2, 182-192. doi: 10.1038/s41559- 017-0417-y.
- Cheah, H.L., Raabe, C.A., Lee, L.P., Rozhdestvensky, T.S., Citartan, M., Ahmed, S.A., Tang, T.H. (2018) **1**  
Bacterial regulatory RNAs: complexity, function, and putative drug targeting. *Crit. Rev. Biochem. Mol. Biol.* 53, 335-355. doi: 10.1080/10409238.2018.1473330.
- Schmitz, J., Doronina, L. (2018) **0**  
How Ancient Sex Drove Mammalian Lineage Evolution. *Bioessays* 40: e1800064. doi: 10.1002/bies.201800064

- Schrader, L., Schmitz, J. (2019) **11**  
The impact of transposable elements in adaptive evolution. *Mol. Ecol.* 28, 1537-1549.  
doi: 10.1111/mec.14794. Epub 2018 Aug 4.
- Doronina, L., Reising., O., Clawson, H., Ray, D.A., Schmitz, J. (2019) **3**  
True Homoplasy of Retrotransposon Insertions in Primates. *Syst Biol.* 68, 482-493.  
doi: 10.1093/sysbio/syy076.
- Raabe, C.A., Gröper, J., Rescher, U. (2019) **3**  
Biased perspectives on formyl peptide receptors. *Biochim. Biophys. Acta Mol. Cell. Res.* 1866, 305-316. doi: 10.1016/j.bbamcr.2018.11.015.
- Ahmed, S.A., Raabe, C.A., Cheah, H.L., Hoe, C.H., Rozhdestvensky, T.S., Tang, T.H. (2019) **0**  
Utilization of small RNA genes to distinguish *Vibrio cholerae* biotypes via multiplex PCR. *Am. J. Tropical Med. Hyg.*, in press
- Tan, L.L., Ahmed, S.A., Ng, S.K., Citartan, M., Raabe, C.A., Rozhdestvensky, T.S., Tang, T.H. (2019) **0**  
Rapid detection of porcine DNA in processed food samples by combination of a streamlined DNA extraction method and SYBR Green real-time PCR assay (SyG-qPCR). *Food Chemistry*, in press

## BOOK CHAPTERS, MEETING REPORTS, AND INVITED REVIEWS

- Brosius, J., Lupski, J. (1987) **37**  
Plasmids for the selection and analysis of prokaryotic promoters. *Methods Enzymol.* 153, 54-68.
- Brosius, J. (1988) **19 + 8**  
Expression vectors employing lambda-, *trp*-, *lac*-, and *lpp*-derived promoters. In *Vectors: A survey of molecular cloning vectors and their uses.* (R. L. Rodriguez & D. T. Denhardt, eds.) Butterworth Publishers, Stoneham, MA, pp.205-225.
- Brosius, J. (1988) **7**  
Expression vectors employing lambda-, *trp*-, *lac*-, and *lpp*-derived promoters. *Biotechnology* 10, 205-225.
- Probst, W.C., Snyder, L.A., Schuster, D.I., Brosius, J., Sealfon, S.C. (1992) **736**  
Sequence alignment of the G-protein coupled receptor superfamily. *DNA Cell Biol.* 11, 1-20.
- Brosius, J. (1992) **50**  
Compilation of superpolylinker vectors. *Methods Enzymol.*, 216, 469-483.

- Stamm, S., Brosius, J. (1995)  
Solid phase PCR. In PCR2 - A practical approach. (M.J. McPherson et al., eds.) Oxford University Press, pp. 55-70.
- Brosius, J., Tiedge, H. (1995) **27**  
Neural BC1 RNA: Dendritic localization and transport. In Localized RNAs. (H.D. Lipshitz, ed.) R.G. Landes, Austin, TX, pp. 289-300.
- Deininger, P.L., Tiedge, H., Kim, J., Brosius, J. (1996) **28**  
Evolution, expression, and possible function of a master gene for amplification of an interspersed repeated DNA family in rodents. In: Progr. Nucleic Acids Res. (W.E. Cohn and K. Moldave, eds.) 52, 67-88.
- Brosius, J. (1999)  
Expression vectors employing the *trc* promoter. In: Gene Expression Systems: using nature for the art of expression. (J. Fernandez and J.P. Hoeffler, eds.) Academic Press, San Diego, CA, pp. 45-64.
- Brosius, J., Tiedge, H. (2001) **14**  
Neuronal BC1 RNA: Intracellular transport and activity-dependent modulation. In: Cell polarity and subcellular RNA localization (D. Richter, ed.), Springer Verlag, Berlin, pp. 129-138.
- Hüttenhofer, A., Brosius, J., Bachellerie, J.-P. (2002) **98**  
RNomics: identification and function of small, non-messenger RNAs. Curr. Opin. Chem. Biol. 6, 835-843.
- Brosius, J. (2003)  
Vom Garten Eden in die Hölle der Einförmigkeit. Gerichtete Evolution beim Menschen. In: Evolution. Geschichte und Zukunft des Lebens. (E.P. Fischer, K. Wiegandt, eds.) pp. 338-351.
- Hüttenhofer, A., Brosius, J. (2003)  
Experimental RNomics. In: Frontiers in Computational Genomics Volume 3 in the Functional Genomics Series (M.Y. Galperin, E.V. Koonin, eds.), pp. 217-240.
- Brosius, J., Hüttenhofer, A., Tiedge, H. (2003)  
Brain-specific non-messenger RNAs. In: Non-coding RNAs: Molecular biology and molecular medicine. (J. Barciszewski, V.A. Erdmann, eds.), Landes Bioscience, Georgetown, TX, pp. 159-169.
- Volff, J.-N., Brosius, J. (2007) **26**  
Modern genomes with retro-look: retrotransposed elements, retroposition and the origin of new genes. In: Gene and Protein Evolution. Genome Dynamics (J.-N. Wolff, ed.) Karger, Basel, pp. 175-190.
- Schmitz, J., Brosius, J. (2011) **74**  
Exonization of transposed elements: A challenge and opportunity for evolution. Biochimie 93, 1928-1934.
- Brosius, J. (2012)  
RNAissance. In: From Nucleic Acids Sequences to Molecular Medicine, RNA

Technologies (V.A. Erdmann, J. Barciszewski, eds.). Springer-Verlag Berlin Heidelberg, pp. 1-18.

Arkhipova, I.R., Batzer, M.A., Brosius, J., Feschotte, C., Moran, J.V., Schmitz, J., Jurka, J. (2012) **12**  
Genomic impact of eukaryotic transposable elements. *Mobile DNA* 3, 19.

Brosius, J. (2014)  
Molekularbiologische Evolution. In: *Studium generale* (L. Saner, ed.). Springer-Verlag Berlin Heidelberg, pp. 109-123.

Raabe, C.A., Brosius, J. (2015) **3**  
Does every transcript originate from a gene? *Ann. N.Y. Acad. Sci.* 1341, 136-148.

Brosius, J. (2019) **0**  
Exaptation at the molecular genetic level. *Sci. China Life Sci.*, Dec 12. doi: 10.1007/s11427-018-9447-8. [Epub ahead of print]

## BOOKS

Brosius, J. Freneau, R.T., Editors (1991)  
Molecular genetic approaches to neuropsychiatric diseases. Academic Press, San Diego, CA. ISBN: 0-121-35790-2

Erdmann, V.A., Brosius, J. Barciszewski, J., Editors (2006)  
RNA Towards Medicine. Series: *Handbook of Experimental Pharmacology*, Vol. 173. Springer Verlag, Berlin, Heidelberg, New York. ISBN: 3-540-27261-5

## PATENTS

Tiedge, H., Brosius, J. (1997)  
Human BC200 RNA probes and a method of screening for breast cancer using the probes thereof.  
U.S. # 5,670,318

Tiedge, H., Brosius, J. (1998)  
Method for testing for the presence of Alzheimer's disease.  
U.S # 5,736,329.

Suh, A., Schmitz, J., Kriegs, J. O., Brosius, J. (2012) Molecular sexing of avian subjects.  
United States patent application 13/361,847.

Suh, A., Schmitz, J., Kriegs, J. O., Brosius, J. (2011) Molecular sexing of avian subjects.  
European patent application EP 11 152 645.5.

