

Petra Knaus

List of Publications by Year in descending order

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101
papers

7,434
citations

57758

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104
times ranked

9363
citing authors

#	ARTICLE	IF	CITATIONS
1	The Mode of Bone Morphogenetic Protein (BMP) Receptor Oligomerization Determines Different BMP-2 Signaling Pathways. <i>Journal of Biological Chemistry</i> , 2002, 277, 5330-5338.	3.4	484
2	Signal transduction of bone morphogenetic protein receptors. <i>Cellular Signalling</i> , 2004, 16, 291-299.	3.6	484
3	Recent advances in BMP receptor signaling. <i>Cytokine and Growth Factor Reviews</i> , 2009, 20, 343-355.	7.2	404
4	Bone Morphogenetic Protein Receptor Complexes on the Surface of Live Cells: A New Oligomerization Mode for Serine/Threonine Kinase Receptors. <i>Molecular Biology of the Cell</i> , 2000, 11, 1023-1035.	2.1	263
5	Different Routes of Bone Morphogenetic Protein (BMP) Receptor Endocytosis Influence BMP Signaling. <i>Molecular and Cellular Biology</i> , 2006, 26, 7791-7805.	2.3	230
6	Activating and deactivating mutations in the receptor interaction site of GDF5 cause symphalangism or brachydactyly type A2. <i>Journal of Clinical Investigation</i> , 2005, 115, 2373-2381.	8.2	192
7	Structural insights into BMP receptors: Specificity, activation and inhibition. <i>Cytokine and Growth Factor Reviews</i> , 2016, 27, 13-34.	7.2	187
8	A portrait of Transforming Growth Factor β 2 superfamily signalling: Background matters. <i>International Journal of Biochemistry and Cell Biology</i> , 2012, 44, 469-474.	2.8	182
9	Expression of Synaptophysin During Postnatal Development of the Mouse Brain. <i>Journal of Neurochemistry</i> , 1986, 47, 1302-1304.	3.9	166
10	Integration of the TGF- β 2 pathway into the cellular signalling network. <i>Cellular Signalling</i> , 2002, 14, 977-988.	3.6	164
11	Bone morphogenetic protein signaling in bone homeostasis. <i>Bone</i> , 2015, 80, 43-59.	2.9	163
12	Mutations in bone morphogenetic protein receptor 1B cause brachydactyly type A2. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2003, 100, 12277-12282.	7.1	161
13	Structure of the Bone Morphogenetic Protein Receptor ALK2 and Implications for Fibrodysplasia Ossificans Progressiva. <i>Journal of Biological Chemistry</i> , 2012, 287, 36990-36998.	3.4	159
14	BMP signaling in vascular biology and dysfunction. <i>Cytokine and Growth Factor Reviews</i> , 2016, 27, 65-79.	7.2	136
15	Dysregulated Bone Morphogenetic Protein Signaling in Monocrotaline-Induced Pulmonary Arterial Hypertension. <i>Arteriosclerosis, Thrombosis, and Vascular Biology</i> , 2007, 27, 1072-1078.	2.4	127
16	Synaptoporin, a novel putative channel protein of synaptic vesicles. <i>Neuron</i> , 1990, 5, 453-462.	8.1	126
17	Noggin. <i>International Journal of Biochemistry and Cell Biology</i> , 2011, 43, 478-481.	2.8	124
18	p38 Inhibitors Prevent TGF- β 2-Induced Myofibroblast Transdifferentiation in Human Tenon Fibroblasts. , 2006, 47, 1500.		122

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19	miR-181a promotes osteoblastic differentiation through repression of TGF- β signaling molecules. International Journal of Biochemistry and Cell Biology, 2013, 45, 696-705.	2.8	120
20	A Particle-Associated Glycoprotein Signal Peptide Essential for Virus Maturation and Infectivity. Journal of Virology, 2001, 75, 5762-5771.	3.4	112
21	The Soluble Exoplasmic Domain of the Type II Transforming Growth Factor (TGF)- β Receptor. Journal of Biological Chemistry, 1995, 270, 2747-2754.	3.4	108
22	MicroRNAs Differentially Expressed in Postnatal Aortic Development Downregulate Elastin via 3' UTR and Coding-Sequence Binding Sites. PLoS ONE, 2011, 6, e16250.	2.5	100
23	Modulation of GDF5/BRI-b signalling through interaction with the tyrosine kinase receptor Ror2. Genes To Cells, 2004, 9, 1227-1238.	1.2	98
24	YAP-Mediated Mechanotransduction in Skeletal Muscle. Frontiers in Physiology, 2016, 7, 41.	2.8	98
25	BMP2 and mechanical loading cooperatively regulate immediate early signalling events in the BMP pathway. BMC Biology, 2012, 10, 37.	3.8	91
26	Proteins associated with type II bone morphogenetic protein receptor (BMPRII) and identified by two-dimensional gel electrophoresis and mass spectrometry. Proteomics, 2004, 4, 1346-1358.	2.2	89
27	Dynamics and interaction of caveolin-1 isoforms with BMP-receptors. Journal of Cell Science, 2005, 118, 643-650.	2.0	89
28	Nanoscale Control of Surface Immobilized BMP-2: Toward a Quantitative Assessment of BMP-Mediated Signaling Events. Nano Letters, 2015, 15, 1526-1534.	9.1	87
29	Constitutively Active ALK2 Receptor Mutants Require Type II Receptor Cooperation. Molecular and Cellular Biology, 2013, 33, 2413-2424.	2.3	85
30	Transforming growth factor-beta1 reduces megalin- and cubilin-mediated endocytosis of albumin in proximal-tubule-derived opossum kidney cells. Journal of Physiology, 2003, 552, 471-481.	2.9	84
31	Role of bone morphogenetic proteins in sprouting angiogenesis: differential BMP receptor-dependent signaling pathways balance stalk vs. tip cell competence. FASEB Journal, 2017, 31, 4720-4733.	0.5	83
32	Homomeric and heteromeric complexes among TGF- β and BMP receptors and their roles in signaling. Cellular Signalling, 2011, 23, 1424-1432.	3.6	76
33	Oligomeric interactions of TGF- β and BMP receptors. FEBS Letters, 2012, 586, 1885-1896.	2.8	74
34	BMPRII acts as a gatekeeper to protect endothelial cells from increased TGF- β responses and altered cell mechanics. PLoS Biology, 2019, 17, e3000557.	5.6	71
35	Novel crosstalk to BMP signalling: cGMP-dependent kinase I modulates BMP receptor and Smad activity. EMBO Journal, 2009, 28, 1537-1550.	7.8	69
36	VE-Cadherin facilitates BMP-induced endothelial cell permeability and signaling. Journal of Cell Science, 2016, 129, 206-18.	2.0	69

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37	MiR-497 ¹ /195 Cluster MicroRNAs Regulate Osteoblast Differentiation by Targeting BMP Signaling. <i>Journal of Bone and Mineral Research</i> , 2015, 30, 796-808.	2.8	65
38	Surface immobilization of bone morphogenetic protein 2 via a self-assembled monolayer formation induces cell differentiation. <i>Acta Biomaterialia</i> , 2012, 8, 772-780.	8.3	64
39	A novel R486Q mutation in BMPR1B resulting in either a brachydactyly type C/symphalangism-like phenotype or brachydactyly type A2. <i>European Journal of Human Genetics</i> , 2006, 14, 1248-1254.	2.8	63
40	Quantitative analysis of <i>TGFBR2</i> mutations in Marfan-syndrome-related disorders suggests a correlation between phenotypic severity and Smad signaling activity. <i>Journal of Cell Science</i> , 2010, 123, 4340-4350.	2.0	58
41	SMAD versus Non-SMAD Signaling Is Determined by Lateral Mobility of Bone Morphogenetic Protein (BMP) Receptors. <i>Journal of Biological Chemistry</i> , 2012, 287, 39492-39504.	3.4	55
42	Effect of the distribution and clustering of the type I A BMP receptor (ALK3) with the type II BMP receptor on the activation of signalling pathways. <i>Journal of Cell Science</i> , 2003, 116, 3277-3284.	2.0	53
43	BMPs are mediators in tissue crosstalk of the regenerating musculoskeletal system. <i>Cell and Tissue Research</i> , 2012, 347, 521-544.	2.9	50
44	Cell-specific responses to the cytokine <i>TGF-β2</i> are determined by variability in protein levels. <i>Molecular Systems Biology</i> , 2018, 14, e7733.	7.2	50
45	A member of the transforming growth factor- β 2 receptor family from <i>Echinococcus multilocularis</i> is activated by human bone morphogenetic protein 2. <i>Molecular and Biochemical Parasitology</i> , 2006, 146, 265-271.	1.1	49
46	Small Molecules Dorsomorphin and LDN-193189 Inhibit Myostatin/GDF8 Signaling and Promote Functional Myoblast Differentiation. <i>Journal of Biological Chemistry</i> , 2015, 290, 3390-3404.	3.4	46
47	Load-induced osteogenic differentiation of mesenchymal stromal cells is caused by mechano-regulated autocrine signaling. <i>Journal of Tissue Engineering and Regenerative Medicine</i> , 2019, 13, 1992-2008.	2.7	45
48	BMP growth factor signaling in a biomechanical context. <i>BioFactors</i> , 2014, 40, 171-187.	5.4	43
49	BMPs as new insulin sensitizers: enhanced glucose uptake in mature 3T3-L1 adipocytes via PPAR β and GLUT4 upregulation. <i>Scientific Reports</i> , 2017, 7, 17192.	3.3	43
50	PP2A regulates BMP signalling by interacting with BMP receptor complexes and by dephosphorylating both the C-terminus and the linker region of Smad1. <i>Journal of Cell Science</i> , 2009, 122, 1248-1257.	2.0	42
51	BMPR2 inhibits activin- and BMP-signaling via wild type ALK2. <i>Journal of Cell Science</i> , 2018, 131, .	2.0	42
52	Cofilin-1 phosphorylation catalyzed by ERK1/2 alters cardiac actin dynamics in dilated cardiomyopathy caused by lamin A/C gene mutation. <i>Human Molecular Genetics</i> , 2018, 27, 3060-3078.	2.9	42
53	BMP10 as a potent inducer of trophoblast differentiation in human embryonic and induced pluripotent stem cells. <i>Biomaterials</i> , 2013, 34, 9789-9802.	11.4	41
54	B Cell-Specific Deficiency for Smad2 In Vivo Leads to Defects in TGF- β 2-Directed IgA Switching and Changes in B Cell Fate. <i>Journal of Immunology</i> , 2006, 176, 2389-2396.	0.8	39

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55	Identification and characterisation of two distinct Smad proteins from the fox-tapeworm <i>Echinococcus multilocularis</i> . <i>International Journal for Parasitology</i> , 2003, 33, 1665-1677.	3.1	38
56	Spatial Segregation of BMP/Smad Signaling Affects Osteoblast Differentiation in C2C12 Cells. <i>PLoS ONE</i> , 2011, 6, e25163.	2.5	37
57	Impaired proteoglycan glycosylation, elevated TGF- β 2 signaling, and abnormal osteoblast differentiation as the basis for bone fragility in a mouse model for gerodermia osteodysplastica. <i>PLoS Genetics</i> , 2018, 14, e1007242.	3.5	36
58	Nerve growth factor mediates activation of the Smad pathway in PC12 cells. <i>FEBS Journal</i> , 2004, 271, 920-931.	0.2	35
59	BMP signalling in a mechanical context – Implications for bone biology. <i>Bone</i> , 2020, 137, 115416.	2.9	35
60	The pro-form of BMP-2 interferes with BMP-2 signalling by competing with BMP-2 for IA receptor binding. <i>FEBS Journal</i> , 2009, 276, 6386-6398.	4.7	34
61	Of flies, mice and men: a systematic approach to understanding the early life origins of chronic lung disease. <i>Thorax</i> , 2013, 68, 380-384.	5.6	34
62	The Role of Titanium Surface Nanostructuring on Preosteoblast Morphology, Adhesion, and Migration. <i>Advanced Healthcare Materials</i> , 2017, 6, 1601244.	7.6	34
63	Antagonism of CxxPC fragments ameliorates manifestations of aortic disease in Marfan syndrome mice. <i>Human Molecular Genetics</i> , 2013, 22, 433-443.	2.9	33
64	Formation of Stable Homomeric and Transient Heteromeric Bone Morphogenetic Protein (BMP) Receptor Complexes Regulates Smad Protein Signaling. <i>Journal of Biological Chemistry</i> , 2011, 286, 19287-19296.	3.4	32
65	BMP2-induced chemotaxis requires PI3K p51 β /p110 α -dependent phosphatidylinositol (3,4,5)-triphosphate production and LL5 β recruitment at the cytocortex. <i>BMC Biology</i> , 2014, 12, 43.	3.8	31
66	Sex-specific metabolic and functional differences in human umbilical vein endothelial cells from twin pairs. <i>Atherosclerosis</i> , 2019, 291, 99-106.	0.8	31
67	New insights into the molecular mechanism of multiple synostoses syndrome (SYNS): Mutation within the GDF5 knuckle epitope causes noggin-resistance. <i>Journal of Bone and Mineral Research</i> , 2012, 27, 429-442.	2.8	30
68	Mapping of a dominant immunogenic region of synaptophysin, a major membrane protein of synaptic vesicles. <i>FEBS Letters</i> , 1990, 261, 358-360.	2.8	29
69	It Takes Two to Tango: Endothelial TGF β 2/BMP Signaling Crosstalk with Mechanobiology. <i>Cells</i> , 2020, 9, 1965.	4.1	29
70	Modulation of Matrix Metalloprotease-2 Levels by Mechanical Loading of Three-Dimensional Mesenchymal Stem Cell Constructs: Impact on <i>In Vitro</i> Tube Formation. <i>Tissue Engineering - Part A</i> , 2010, 16, 3139-3148.	3.1	27
71	Molecular characterisation of a second structurally unusual AR-Smad without an MH1 domain and a Smad4 orthologue from <i>Echinococcus multilocularis</i> . <i>International Journal for Parasitology</i> , 2008, 38, 161-176.	3.1	24
72	The ‘Artificial Artery’ as In Vitro Perfusion Model. <i>PLoS ONE</i> , 2013, 8, e57227.	2.5	24

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73	Enhanced Biological Activity of BMP-2 Bound to Surface-Grafted Heparan Sulfate. <i>Advanced Biology</i> , 2017, 1, e1600041.	3.0	24
74	Interaction and functional cooperation between the serine/threonine kinase bone morphogenetic protein type II receptor with the tyrosine kinase stem cell factor receptor. <i>Journal of Cellular Physiology</i> , 2006, 206, 457-467.	4.1	22
75	Biochemical and functional characterization of the Ror2/BRIb receptor complex. <i>Biochemical and Biophysical Research Communications</i> , 2009, 381, 1-6.	2.1	20
76	IRS4, a novel modulator of BMP/Smad and Akt signalling during early muscle differentiation. <i>Scientific Reports</i> , 2017, 7, 8778.	3.3	19
77	Picomolar FKBP inhibitors enabled by a single water-displacing methyl group in bicyclic [4.3.1] aza-amides. <i>Chemical Science</i> , 2021, 12, 14758-14765.	7.4	19
78	Ultrasonically Produced Porous Sponge Layer on Titanium to Guide Cell Behavior. <i>Advanced Engineering Materials</i> , 2016, 18, 476-483.	3.5	18
79	Functional regulation of YAP mechanosensitive transcriptional coactivator by Focused Low-Intensity Pulsed Ultrasound (FLIPUS) enhances proliferation of murine mesenchymal precursors. <i>PLoS ONE</i> , 2018, 13, e0206041.	2.5	17
80	Covalent quantum dot receptor linkage via the acyl carrier protein for single-molecule tracking, internalization, and trafficking studies. <i>BioTechniques</i> , 2010, 49, 574-579.	1.8	16
81	Dynamin-dependent endocytosis of Bone Morphogenetic Protein2 (BMP2) and its receptors is dispensable for the initiation of Smad signaling. <i>International Journal of Biochemistry and Cell Biology</i> , 2016, 76, 51-63.	2.8	16
82	Antagonistic Activities of Vegfr3/Flt4 and Notch1b Fine-tune Mechanosensitive Signaling during Zebrafish Cardiac Valvulogenesis. <i>Cell Reports</i> , 2020, 32, 107883.	6.4	16
83	Yin and Yang in BMP signaling: Impact on the pathology of diseases and potential for tissue regeneration. <i>Signal Transduction</i> , 2006, 6, 314-328.	0.4	15
84	Fibrodysplasia Ossificans Progressiva: What Have We Achieved and Where Are We Now? Follow-up to the 2015 Lorentz Workshop. <i>Frontiers in Endocrinology</i> , 2021, 12, 732728.	3.5	15
85	Lessons from LIMK1 enzymology and their impact on inhibitor design. <i>Biochemical Journal</i> , 2019, 476, 3197-3209.	3.7	14
86	Radiation-Induced Reduction of BMP-Induced Proteoglycan Synthesis in an Embryonal Mesenchymal Tissue Equivalent Using the Chicken Limb Bud Test. <i>Strahlentherapie Und Onkologie</i> , 2001, 177, 432-436.	2.0	12
87	Growth and Differentiation Factor 3 Induces Expression of Genes Related to Differentiation in a Model of Cancer Stem Cells and Protects Them from Retinoic Acid-Induced Apoptosis. <i>PLoS ONE</i> , 2013, 8, e70612.	2.5	12
88	AMOT130 drives BMP-SMAD signaling at the apical membrane in polarized cells. <i>Molecular Biology of the Cell</i> , 2020, 31, 118-130.	2.1	12
89	Comprehensive analysis of TGF- β 2 and BMP receptor interactomes. <i>European Journal of Cell Biology</i> , 2012, 91, 287-293.	3.6	11
90	An investigation of BMP-7 mediated alterations to BMP signalling components in human tenocyte-like cells. <i>Scientific Reports</i> , 2016, 6, 29703.	3.3	11

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91	Differential Impact of Fluid Shear Stress and YAP/TAZ on BMP/TGF β 2 Induced Osteogenic Target Genes. <i>Advanced Biology</i> , 2021, 5, 2000051.	2.5	10
92	ActivinA Induced SMAD1/5 Signaling in an iPSC Derived EC Model of Fibrodysplasia Ossificans Progressiva (FOP) Can Be Rescued by the Drug Candidate Saracatinib. <i>Stem Cell Reviews and Reports</i> , 2021, 17, 1039-1052.	3.8	10
93	Actions from head to toe: An update on Bone/Body Morphogenetic Proteins in health and disease. <i>Cytokine and Growth Factor Reviews</i> , 2016, 27, 1-11.	7.2	9
94	Is NO the Answer? The Nitric Oxide Pathway Can Support Bone Morphogenetic Protein 2 Mediated Signaling. <i>Cells</i> , 2019, 8, 1273.	4.1	7
95	Biomechanical stress provides a second hit in the establishment of BMP/TGF β 2-related vascular disorders. <i>Cell Stress</i> , 2020, 4, 44-47.	3.2	7
96	Putting Cells into Context. <i>Frontiers in Cell and Developmental Biology</i> , 2017, 5, 32.	3.7	5
97	Resistance to TGF β 1-mediated growth inhibition correlates with sustained Smad2 phosphorylation in primary murine splenocytes. <i>European Journal of Immunology</i> , 2002, 32, 1393.	2.9	2
98	Optimized expression and purification of a soluble BMP2 variant based on in-silico design. <i>Protein Expression and Purification</i> , 2021, 186, 105918.	1.3	2
99	Emerging regulators of BMP bioavailability. <i>Bone</i> , 2016, 93, 220-221.	2.9	1
100	Cell Adhesion: The Role of Titanium Surface Nanostructuring on Preosteoblast Morphology, Adhesion, and Migration (<i>Adv. Healthcare Mater.</i> 15/2017). <i>Advanced Healthcare Materials</i> , 2017, 6, .	7.6	0
101	Visualization and Quantification of TGF β /BMP/SMAD Signaling under Different Fluid Shear Stress Conditions using Proximity-Ligation-Assay. <i>Journal of Visualized Experiments</i> , 2021, , .	0.3	0