## Rene Buchet

## List of Publications by Year in descending order

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172207 161609 3,541 118 29 54 citations h-index g-index papers 123 123 123 4412 citing authors docs citations times ranked all docs

#	Article	IF	CITATIONS
1	Vibrational Spectroscopic Detection of Beta- and Gamma-Turns in Synthetic and Natural Peptides and Proteins. Chemical Reviews, 2003, 103, 1917-1954.	23.0	262
2	Molecular mechanisms of mesenchymal stem cell differentiation towards osteoblasts. World Journal of Stem Cells, 2013, 5, 136.	1.3	199
3	The roles of annexins and alkaline phosphatase in mineralization process Acta Biochimica Polonica, 2003, 50, 1019-1038.	0.3	168
4	Multisystemic Functions of Alkaline Phosphatases. Methods in Molecular Biology, 2013, 1053, 27-51.	0.4	148
5	Matrix vesicles from chondrocytes and osteoblasts: Their biogenesis, properties, functions and biomimetic models. Biochimica Et Biophysica Acta - General Subjects, 2018, 1862, 532-546.	1.1	131
6	Peroxidase activity of annexin 1 from Arabidopsis thaliana. Biochemical and Biophysical Research Communications, 2005, 336, 868-875.	1.0	115
7	Inorganic pyrophosphate as a regulator of hydroxyapatite or calcium pyrophosphate dihydrate mineral deposition by matrix vesicles. Osteoarthritis and Cartilage, 2009, 17, 64-72.	0.6	108
8	2D-FTIR ATR Spectroscopy of Thermo-Induced Periodic Secondary Structural Changes of Poly-(I)-lysine:  A Cross-Correlation Analysis of Phase-Resolved Temperature Modulation Spectra. The Journal of Physical Chemistry, 1996, 100, 10810-10825.	2.9	101
9	Proteomic characterization of biogenesis and functions of matrix vesicles released from mineralizing human osteoblast-like cells. Journal of Proteomics, 2011, 74, 1123-1134.	1.2	97
10	Matrix vesicles originate from apical membrane microvilli of mineralizing osteoblastâ€ike Saosâ€2 cells. Journal of Cellular Biochemistry, 2009, 106, 127-138.	1.2	88
11	Proteome analysis of matrix vesicles isolated from femurs of chicken embryo. Proteomics, 2008, 8, 192-205.	1.3	85
12	Refined relationship between the position of the fundamental OH stretching and the first overtones for clays. Physics and Chemistry of Minerals, 2004, 31, 585-592.	0.3	73
13	Potential Role of Annexin AnnAt1 from Arabidopsis thaliana in pH-Mediated Cellular Response to Environmental Stimuli. Plant and Cell Physiology, 2007, 48, 792-803.	1.5	72
14	Autocrine stimulation of osteoblast activity by Wnt5a in response to TNF- $\hat{l}_{\pm}$ in human mesenchymal stem cells. Biochemical and Biophysical Research Communications, 2013, 430, 1072-1077.	1.0	69
15	Phospholipases of Mineralization Competent Cells and Matrix Vesicles: Roles in Physiological and Pathological Mineralizations. International Journal of Molecular Sciences, 2013, 14, 5036-5129.	1.8	55
16	Phosphodiesterase Activity of Alkaline Phosphatase in ATP-initiated Ca2+ and Phosphate Deposition in Isolated Chicken Matrix Vesicles. Journal of Biological Chemistry, 2005, 280, 37289-37296.	1.6	54
17	Compared Binding Properties between Resveratrol and Other Polyphenols to Plasmatic Albumin: Consequences for the Health Protecting Effect of Dietary Plant Microcomponents. Molecules, 2014, 19, 17066-17077.	1.7	48
18	Acidic pH-induced folding of annexin VI is a prerequisite for its insertion into lipid bilayers and formation of ion channels by the protein molecules. FASEB Journal, 2001, 15, 1083-1085.	0.2	47

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19	Functions of Rho family of small GTPases and Rho-associated coiled-coil kinases in bone cells during differentiation and mineralization. Biochimica Et Biophysica Acta - General Subjects, 2017, 1861, 1009-1023.	1.1	47
20	Mitochondrial Creatine Kinase Binding to Phospholipids Decreases Fluidity of Membranes and Promotes New Lipid-Induced $\hat{l}^2$ Structures As Monitored by Red Edge Excitation Shift, Laurdan Fluorescence, and FTIR. Biochemistry, 2001, 40, 6016-6026.	1.2	40
21	Thermal and pH stabilities of alkaline phosphatase from bovine intestinal mucosa: a FTIR study. BBA - Proteins and Proteomics, 1995, 1248, 186-192.	2.1	38
22	TNAP stimulates vascular smooth muscle cell trans-differentiation into chondrocytes through calcium deposition and BMP-2 activation: Possible implication in atherosclerotic plaque stability. Biochimica Et Biophysica Acta - Molecular Basis of Disease, 2017, 1863, 643-653.	1.8	38
23	Phosphate Binding in the Active Site of Alkaline Phosphatase and the Interactions of 2-Nitrosoacetophenone with Alkaline Phosphatase-Induced Small Structural Changes. Biophysical Journal, 2004, 86, 3873-3881.	0.2	37
24	Ca2+ release from caged-Ca2+ alters the FTIR spectrum of sarcoplasmic reticulum. Biochimica Et Biophysica Acta - Biomembranes, 1991, 1069, 209-217.	1.4	35
25	Synthesis and evaluation of benzo[b]thiophene derivatives as inhibitors of alkaline phosphatases. Bioorganic and Medicinal Chemistry, 2009, 17, 7290-7300.	1.4	33
26	Prostate cancer-derived exosomes promote osteoblast differentiation and activity through phospholipase D2. Biochimica Et Biophysica Acta - Molecular Basis of Disease, 2020, 1866, 165919.	1.8	33
27	Inhibitors of tissue-nonspecific alkaline phosphatase: Design, synthesis, kinetics, biomineralization and cellular tests. Bioorganic and Medicinal Chemistry, 2013, 21, 7981-7987.	1.4	32
28	A comparative analysis of strategies for isolation of matrix vesicles. Analytical Biochemistry, 2007, 361, 176-182.	1.1	31
29	Crude phosphorylation mixtures containing racemic lipid amphiphiles self-assemble to give stable primitive compartments. Scientific Reports, 2017, 7, 18106.	1.6	31
30	Selecting Two-Dimensional Cross-Correlation Functions to Enhance Interpretation of Near-Infrared Spectra of Proteins. Applied Spectroscopy, 2001, 55, 155-162.	1.2	30
31	Tissue-nonspecific alkaline phosphatase is an anti-inflammatory nucleotidase. Bone, 2020, 133, 115262.	1.4	30
32	Mitochondrial Creatine Kinase Binding to Phospholipid Monolayers Induces Cardiolipin Segregation. Biophysical Journal, 2009, 96, 2428-2438.	0.2	29
33	Annexins as nucleotide-binding proteins: Facts and speculations. BioEssays, 2001, 23, 170-178.	1.2	28
34	GTP-Induced Membrane Binding and Ion Channel Activity of Annexin VI: Is Annexin VI a GTP Biosensor?. Biophysical Journal, 2002, 82, 2737-2745.	0.2	28
35	Effects of pH and KCl on the Conformations of Creatine Kinase from Rabbit Muscle. Infrared, Circular Dichroic and Fluorescence Studies. FEBS Journal, 1995, 234, 570-578.	0.2	27
36	Temperature dependence of ligand–protein complex formation as reflected by saturation transfer difference NMR experiments. Magnetic Resonance in Chemistry, 2007, 45, 745-748.	1.1	27

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37	Emerging views on the structure and dynamics of the Ca2+-ATPase in sarcoplasmic reticulum. FEBS Letters, 1990, 268, 365-370.	1.3	25
38	Conformations of synthetic $\hat{l}^2$ peptides in solid state and in aqueous solution: relation to toxicity in PC12 cells. Biochimica Et Biophysica Acta - Molecular Basis of Disease, 1996, 1315, 40-46.	1.8	25
39	Monitoring of secondary and tertiary structure changes in the gastric H+/K+-ATPase by infrared spectroscopy. FEBS Journal, 2001, 268, 3644-3653.	0.2	25
40	Quantitative atomic force microscopy provides new insight into matrix vesicle mineralization. Archives of Biochemistry and Biophysics, 2019, 667, 14-21.	1.4	25
41	The effect of dicyclohexycarbodiimide and cyclopiazonic acid on the difference FTIR spectra of sarcoplasmic reticulum induced by photolysis of caged-ATP and caged-Ca2+. Biochimica Et Biophysica Acta - Biomembranes, 1992, 1104, 207-214.	1.4	24
42	A Putative Consensus Sequence for the Nucleotide-Binding Site of Annexin A6â€. Biochemistry, 2003, 42, 9137-9146.	1.2	24
43	Changes of Creatine Kinase Secondary Structure Induced by the Release of Nucleotides from Caged Compounds. FEBS Journal, 1996, 240, 134-142.	0.2	23
44	Isolation and Characteristics of Matrix Vesicles. Methods in Molecular Biology, 2013, 1053, 115-124.	0.4	23
45	Dielectric relaxation studies on analogs of the polypentapeptide of elastin. The Journal of Physical Chemistry, 1988, 92, 511-517.	2.9	22
46	Polarized infrared attenuated total reflectance spectroscopy of the Ca2+-ATPase of sarcoplasmic reticulum. Biochimica Et Biophysica Acta - Biomembranes, 1991, 1068, 201-216.	1.4	22
47	Synthesis and evaluation of thiophenyl derivatives as inhibitors of alkaline phosphatase. Bioorganic and Medicinal Chemistry Letters, 2011, 21, 2297-2301.	1.0	22
48	Characteristics of minerals in vesicles produced by human osteoblasts hFOB 1.19 and osteosarcoma Saos-2 cells stimulated for mineralization. Journal of Inorganic Biochemistry, 2017, 171, 100-107.	1.5	22
49	Ankylosing Spondylitis, Late Osteoarthritis, Vascular Calcification, Chondrocalcinosis and Pseudo Gout: Toward a Possible Drug Therapy. Current Medicinal Chemistry, 2011, 18, 2196-2203.	1.2	21
50	Giant vesicles from rehydrated crude mixtures containing unexpected mixtures of amphiphiles formed under plausibly prebiotic conditions. Organic and Biomolecular Chemistry, 2017, 15, 4231-4240.	1.5	21
51	Chick embryo anchored alkaline phosphatase and mineralization process in vitro. Influence of Ca2+ and nature of substrates. FEBS Journal, 2003, 270, 2082-2090.	0.2	20
52	Phosphatidylserine controls calcium phosphate nucleation and growth on lipid monolayers: A physicochemical understanding of matrix vesicle-driven biomineralization. Journal of Structural Biology, 2020, 212, 107607.	1.3	20
53	Localization of Annexin A6 in Matrix Vesicles During Physiological Mineralization. International Journal of Molecular Sciences, 2020, 21, 1367.	1.8	20
54	Pressure effects on sacroplasmic reticulum: a Fourier transform infrared spectroscpic study. Biochimica Et Biophysica Acta - Biomembranes, 1990, 1023, 107-118.	1.4	19

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55	ATP-Binding Site of Annexin VI Characterized by Photochemical Release of Nucleotide and Infrared Difference Spectroscopy. Biochemical and Biophysical Research Communications, 1999, 263, 775-779.	1.0	19
56	Calcium―and pHâ€dependent localization of annexin A6 isoforms in Balb/3T3 fibroblasts reflecting their potential participation in vesicular transport. Journal of Cellular Biochemistry, 2008, 104, 418-434.	1.2	19
57	Conformational and Interfacial Analyses of K3A18K3 and Alamethicin in Model Membranes. Journal of Physical Chemistry B, 2009, 113, 7012-7019.	1.2	19
58	Phospholipase D: A new mediator during high phosphate-induced vascular calcification associated with chronic kidney disease. Journal of Cellular Physiology, 2019, 234, 4825-4839.	2.0	18
59	Infrared spectroscopic studies on gramicidin ion-channels: relation to the mechanisms of anesthesia. Biochimica Et Biophysica Acta - Biomembranes, 1985, 821, 8-16.	1.4	17
60	Correlation of structure and function in the Ca2+-ATPase of sarcoplasmic reticulum: a Fourier transform infrared spectroscopy (FTIR) study on the effects of dimethyl sulfoxide and urea. Biochimica Et Biophysica Acta - Biomembranes, 1989, 983, 167-178.	1.4	17
61	Secondary structure analysis of HIV-1-gp41 in solution and adsorbed to aluminum hydroxide by Fourier transform infrared spectroscopy. Biochimica Et Biophysica Acta - Proteins and Proteomics, 2007, 1774, 351-358.	1.1	17
62	Multiple Functions of MSCA-1/TNAP in Adult Mesenchymal Progenitor/Stromal Cells. Stem Cells International, 2016, 2016, 1-8.	1.2	17
63	Lipid microenvironment affects the ability of proteoliposomes harboring TNAP to induce mineralization without nucleators. Journal of Bone and Mineral Metabolism, 2019, 37, 607-613.	1.3	17
64	Structural Changes of Mitochondrial Creatine Kinase upon Binding of ADP, ATP, or Pi, Observed by Reaction-Induced Infrared Difference Spectraâ€. Biochemistry, 2001, 40, 2988-2994.	1.2	16
65	Structure-Function Relations in Oxaloacetate Decarboxylase Complex. Fluorescence and Infrared Approaches to Monitor Oxomalonate and Na+ Binding Effect. PLoS ONE, 2010, 5, e10935.	1.1	16
66	Collagen promotes matrix vesicle-mediated mineralization by vascular smooth muscle cells. Journal of Inorganic Biochemistry, 2018, 186, 1-9.	1.5	16
67	Lansoprazole is an uncompetitive inhibitor of tissue-nonspecific alkaline phosphatase Acta Biochimica Polonica, 2009, 56, .	0.3	16
68	Conformational Changes of Arginine Kinase Induced by Photochemical Release of Nucleotides from Caged Nucleotides. An Infrared Difference-Spectroscopy Investigation. FEBS Journal, 1997, 244, 343-351.	0.2	15
69	Dimethyl sulfoxide-induced hydroxyapatite formation: A biological model of matrix vesicle nucleation to screen inhibitors of mineralization. Analytical Biochemistry, 2008, 381, 123-128.	1.1	15
70	Direct Determination of Phosphatase Activity from Physiological Substrates in Cells. PLoS ONE, 2015, 10, e0120087.	1.1	15
71	Infrared investigations of biologically important hydrogen bonds in halogen containing solvents. Pure and Applied Chemistry, 1986, 58, 1115-1119.	0.9	14
72	Racemic Phospholipids for Origin of Life Studies. Symmetry, 2020, 12, 1108.	1.1	14

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73	Synthesis of Phospholipids Under Plausible Prebiotic Conditions and Analogies with Phospholipid Biochemistry for Origin of Life Studies. Astrobiology, 2022, 22, 598-627.	1.5	14
74	ADP-Binding and ATP-Binding Sites in Native and Proteinase-K-Digested Creative Kinase, Probed by Reaction-Induced Difference Infrared Spectroscopy. FEBS Journal, 1997, 247, 1197-1208.	0.2	13
75	A hydrophobic disordered peptide spontaneously anchors a covalently bound RNA hairpin to giant lipidic vesicles. Organic and Biomolecular Chemistry, 2014, 12, 6363-6373.	1.5	13
76	Fatty acid composition in matrix vesicles and in microvilli from femurs of chicken embryos revealed selective recruitment of fatty acids. Biochemical and Biophysical Research Communications, 2014, 446, 1161-1164.	1.0	13
77	Effects of phospholipase D during cultured osteoblast mineralization and bone formation. Journal of Cellular Biochemistry, 2019, 120, 5923-5935.	1.2	13
78	Solvent-induced conformational changes of a cyclic l,d-lipopeptide mycosubtilin and of its O-methyltyrosine derivative A search for hydrogen bonds by FTIR spectroscopy. Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy, 1997, 53, 1913-1923.	2.0	12
79	Phosphorylation-dependent phospholipase D activity of matrix vesicles. FEBS Letters, 2006, 580, 5676-5680.	1.3	12
80	Acyl chain composition determines cardiolipin clustering induced by mitochondrial creatine kinase binding to monolayers. Biochimica Et Biophysica Acta - Biomembranes, 2011, 1808, 1129-1139.	1.4	12
81	Azanitrile Cathepsin K Inhibitors: Effects on Cell Toxicity, Osteoblast-Induced Mineralization and Osteoclast-Mediated Bone Resorption. PLoS ONE, 2015, 10, e0132513.	1.1	12
82	Long-chain polyphosphate in osteoblast matrix vesicles: Enrichment and inhibition of mineralization. Biochimica Et Biophysica Acta - General Subjects, 2019, 1863, 199-209.	1.1	12
83	Annexins A2, A6 and Fetuin-A Affect the Process of Mineralization in Vesicles Derived from Human Osteoblastic hFOB 1.19 and Osteosarcoma Saos-2 Cells. International Journal of Molecular Sciences, 2021, 22, 3993.	1.8	12
84	Synthesis of benzofuran derivatives as selective inhibitors of tissue-nonspecific alkaline phosphatase: effects on cell toxicity and osteoblast-induced mineralization. Bioorganic and Medicinal Chemistry Letters, 2016, 26, 1457-1459.	1.0	11
85	The effect of anesthetics on hydrogen bonds An infrared study at low anesthetic concentrations. Biophysical Chemistry, 1985, 22, 249-254.	1.5	10
86	Distinct actions of strontium on mineral formation in matrix vesicles. Biochemical and Biophysical Research Communications, 2008, 373, 378-381.	1.0	10
87	Clarification of the binding model of lead(II) with a highly sensitive and selective fluoroionophore sensor by spectroscopic and structural study. Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy, 2009, 72, 306-311.	2.0	10
88	Active creatine kinase is present in matrix vesicles isolated from femurs of chicken embryo: Implications for bone mineralization. Biochemical and Biophysical Research Communications, 2010, 391, 1432-1436.	1.0	10
89	Direct determination of phospholipase D activity by infrared spectroscopy. Analytical Biochemistry, 2012, 430, 32-38.	1.1	10
90	Nucleotide Binding Sites in Wild-Type Creatine Kinase and in W227Y Mutant Probed by Photochemical Release of Nucleotides and inFrared Difference Spectroscopy. FEBS Journal, 1997, 250, 773-782.	0.2	9

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91	Symmetry Breaking of Phospholipids. Symmetry, 2020, 12, 1488.	1.1	9
92	Distinct structure and activity recoveries reveal differences in metal binding between mammalian and Escherichia coli alkaline phosphatases. Biochemical Journal, 2005, 392, 407-415.	1.7	8
93	Hydrolysis of Extracellular ATP by Vascular Smooth Muscle Cells Transdifferentiated into Chondrocytes Generates Pi but Not PPi. International Journal of Molecular Sciences, 2021, 22, 2948.	1.8	8
94	Acidic pHâ€induced folding of annexin VI is a prerequisite for its insertion into lipid bilayers and formation of ion channels by the protein molecules. FASEB Journal, 2001, 15, 1083-1085.	0.2	7
95	Experimental Raman and infrared investigation of phenobarbital febarabamate, difebarbamate and tetrabamate. Spectrochimica Acta Part A: Molecular Spectroscopy, 1982, 38, 239-245.	0.1	6
96	Hydrogen Bond Equilibrium Constants of Some Unusual Nucleotide Base Pairs. Journal of Biomolecular Structure and Dynamics, 1984, 2, 221-232.	2.0	6
97	Interactions of egg yolk phosphatidylcholine with cholesteryl polyethoxy neoglycolipids containing N-acetyl-d-glucosamine. Journal of Molecular Structure, 1999, 478, 295-302.	1.8	6
98	Magnesiumâ^'Adenosine Diphosphate Binding Sites in Wild-type Creatine Kinase and in Mutants: Role of Aromatic Residues Probed by Raman and Infrared Spectroscopiesâ€. Biochemistry, 2000, 39, 9251-9256.	1.2	6
99	Interactions of caged-ATP and photoreleased ATP with alkaline phosphatase. Biochemical and Biophysical Research Communications, 2005, 328, 591-594.	1.0	6
100	Src and ROCK Kinases Differentially Regulate Mineralization of Human Osteosarcoma Saos-2 Cells. International Journal of Molecular Sciences, 2019, 20, 2872.	1.8	6
101	Threeâ€dimensional cellâ€aden collagen scaffolds: From biochemistry to bone bioengineering. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2022, 110, 967-983.	1.6	6
102	Sinomenine, theophylline, cysteine, and levamisole: Comparisons of their kinetic effects on mineral formation induced by matrix vesicles. Journal of Inorganic Biochemistry, 2010, 104, 446-454.	1.5	5
103	The functional role of soluble proteins acquired by extracellular vesicles. , 2022, 1, .		5
104	Dielectric relaxation spectroscopy on dimyristoylphosphatidylcholine-packaged gramicidin A. Chemistry and Physics of Lipids, 1988, 47, 299-307.	1.5	4
105	Alzheimer's disease: its origin at the membrane, evidence and questions. Acta Biochimica Polonica, 2000, 47, 725-33.	0.3	4
106	Determination of phosphatase activity in osteoblasts by IR and two-dimensional correlation IR spectroscopy. Vibrational Spectroscopy, 2016, 86, 206-211.	1.2	3
107	Analysis of Minerals Produced by hFOB 1.19 and Saos-2 Cells Using Transmission Electron Microscopy with Energy Dispersive X-ray Microanalysis. Journal of Visualized Experiments, 2018, , .	0.2	3
108	Design, synthesis and biological evaluation of inhibitors of cathepsin K on dedifferentiated chondrocytes. Bioorganic and Medicinal Chemistry, 2019, 27, 1034-1042.	1.4	3

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109	Dielectric spectroscopy ofl-α-lysolecithin-packaged gramicidin A. Biophysical Chemistry, 1988, 32, 199-209.	1.5	2
110	Probing nucleotide binding site of annexin A6. Vibrational Spectroscopy, 2004, 36, 233-236.	1.2	2
111	A novel retinoid binding property of human annexin A6. FEBS Letters, 2006, 580, 3065-3069.	1.3	2
112	Characterization of caged compounds binding to proteins by NMR spectroscopy. Biochemical and Biophysical Research Communications, 2010, 400, 447-451.	1.0	2
113	Fluorescence evidence of annexin A6 translocation across membrane in model matrix vesicles during apatite formation., 2022, 1, .		2
114	Hydrogen bond association constants of some nucleoside base pairs formed by an adenosine derivative and anticancer agents. International Reviews in Physical Chemistry, 1986, 5, 153-160.	0.9	1
115	Mg-nucleotides induced dissociation of liposome-bound creatine kinase: reversible changes in its secondary structure and in the fluidity of the bilayer. Molecular Membrane Biology, 2003, 20, 163-169.	2.0	1
116	Origin of matrix vesicles in mineralization competent osteoblast-like saos-2 cells. Bone, 2008, 42, S31-S32.	1.4	1
117	Mitochondrial creatine kinase binding to liposomes and vesicle aggregation: effect of cleavage by proteinase K. The Protein Journal, 2001, 20, 593-599.	1.1	0
118	Vibrational Spectroscopic Detection of Beta- and Gamma-Turns in Synthetic and Natural Peptides and Proteins. ChemInform, 2003, 34, no.	0.1	0