

# Pã©ter Vã;rnai

## List of Publications by Year in descending order

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92  
papers

7,316  
citations

66343

42  
h-index

56724

83  
g-index

96  
all docs

96  
docs citations

96  
times ranked

8834  
citing authors

| #  | ARTICLE  | IF   | CITATIONS |
|----|--|------|-----------|
| 1  | Visualization of Phosphoinositides That Bind Pleckstrin Homology Domains: Calcium- and Agonist-induced Dynamic Changes and Relationship to Myo-[3H]inositol-labeled Phosphoinositide Pools. <i>Journal of Cell Biology</i> , 1998, 143, 501-510.             | 5.2  | 765       |
| 2  | Rapidly inducible changes in phosphatidylinositol 4,5-bisphosphate levels influence multiple regulatory functions of the lipid in intact living cells. <i>Journal of Cell Biology</i> , 2006, 175, 377-382.  | 5.2  | 316       |
| 3  | Phosphatidylinositol 3-Kinase-dependent Membrane Association of the Bruton's Tyrosine Kinase Pleckstrin Homology Domain Visualized in Single Living Cells. <i>Journal of Biological Chemistry</i> , 1999, 274, 10983-10989.                                  | 3.4  | 259       |
| 4  | Molecular Dynamics Simulations of the 136 Unique Tetranucleotide Sequences of DNA Oligonucleotides. I. Research Design and Results on d(CpG) Steps. <i>Biophysical Journal</i> , 2004, 87, 3799-3813.  | 0.5  | 245       |
| 5  | A Plasma Membrane Pool of Phosphatidylinositol 4-Phosphate Is Generated by Phosphatidylinositol 4-Kinase Type-III Alpha: Studies with the PH Domains of the Oxysterol Binding Protein and FAPP1. <i>Molecular Biology of the Cell</i> , 2005, 16, 1282-1295. | 2.1  | 241       |
| 6  | Visualization and Manipulation of Plasma Membrane-Endoplasmic Reticulum Contact Sites Indicates the Presence of Additional Molecular Components within the STIM1-Orai1 Complex. <i>Journal of Biological Chemistry</i> , 2007, 282, 29678-29690.             | 3.4  | 228       |
| 7  | Redox Nanodomains Are Induced by and Control Calcium Signaling at the ER-Mitochondrial Interface. <i>Molecular Cell</i> , 2016, 63, 240-248.   | 9.7  | 228       |
| 8  | Monitoring Agonist-induced Phospholipase C Activation in Live Cells by Fluorescence Resonance Energy Transfer. <i>Journal of Biological Chemistry</i> , 2001, 276, 15337-15344.  | 3.4  | 225       |
| 9  | DNA and its counterions: a molecular dynamics study. <i>Nucleic Acids Research</i> , 2004, 32, 4269-4280.  | 14.5 | 220       |
| 10 | Molecular Dynamics Simulations of the 136 Unique Tetranucleotide Sequences of DNA Oligonucleotides. II: Sequence Context Effects on the Dynamical Structures of the 10 Unique Dinucleotide Steps. <i>Biophysical Journal</i> , 2005, 89, 3721-3740.          | 0.5  | 216       |
| 11 | A G-Rich Sequence within the <i>c-kit</i> Oncogene Promoter Forms a Parallel G-Quadruplex Having Asymmetric G-Tetrad Dynamics. <i>Journal of the American Chemical Society</i> , 2009, 131, 13399-13409.   | 13.7 | 195       |
| 12 | Making sense of big data in health research: Towards an EU action plan. <i>Genome Medicine</i> , 2016, 8, 71.  | 8.2  | 190       |
| 13 | Determination of the Free Energy Landscape of $\beta$ -Synuclein Using Spin Label Nuclear Magnetic Resonance Measurements. <i>Journal of the American Chemical Society</i> , 2009, 131, 18314-18326.   | 13.7 | 187       |
| 14 | Maintenance of Hormone-sensitive Phosphoinositide Pools in the Plasma Membrane Requires Phosphatidylinositol 4-Kinase III $\beta$ . <i>Molecular Biology of the Cell</i> , 2008, 19, 711-721.  | 2.1  | 174       |
| 15 | Periplasmic arabinogalactan glycoproteins act as a calcium capacitor that regulates plant growth and development. <i>New Phytologist</i> , 2013, 197, 58-64.   | 7.3  | 168       |
| 16 | STIM and Orai: the long-awaited constituents of store-operated calcium entry. <i>Trends in Pharmacological Sciences</i> , 2009, 30, 118-128.   | 8.7  | 167       |
| 17 | Base pair opening within B-DNA: free energy pathways for GC and AT pairs from umbrella sampling simulations. <i>Nucleic Acids Research</i> , 2003, 31, 1434-1443.  | 14.5 | 153       |
| 18 | Acute manipulation of Golgi phosphoinositides to assess their importance in cellular trafficking and signaling. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2010, 107, 8225-8230.                               | 7.1  | 146       |

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|----|---|------|-----------|
| 19 | Trans-mitochondrial coordination of cristae at regulated membrane junctions. <i>Nature Communications</i> , 2015, 6, 6259.  | 12.8 | 143       |
| 20 | How accurately can we image inositol lipids in living cells?. <i>Trends in Pharmacological Sciences</i> , 2000, 21, 238-241.  | 8.7  | 142       |
| 21 | Selective cellular effects of overexpressed pleckstrin-homology domains that recognize PtdIns(3,4,5)P3 suggest their interaction with protein binding partners. <i>Journal of Cell Science</i> , 2005, 118, 4879-4888.                      | 2.0  | 133       |
| 22 | Live cell imaging of phosphoinositide dynamics with fluorescent protein domains. <i>Biochimica Et Biophysica Acta - Molecular and Cell Biology of Lipids</i> , 2006, 1761, 957-967.   | 2.4  | 128       |
| 23 | Dependence of STIM1/Orai1-mediated Calcium Entry on Plasma Membrane Phosphoinositides. <i>Journal of Biological Chemistry</i> , 2009, 284, 21027-21035.   | 3.4  | 128       |
| 24 | alpha/gamma Transitions in the B-DNA backbone. <i>Nucleic Acids Research</i> , 2002, 30, 5398-5406.   | 14.5 | 116       |
| 25 | Inositol Lipid Binding and Membrane Localization of Isolated Pleckstrin Homology (PH) Domains. <i>Journal of Biological Chemistry</i> , 2002, 277, 27412-27422.   | 3.4  | 111       |
| 26 | Plant O-Hydroxyproline Arabinogalactans Are Composed of Repeating Trigalactosyl Subunits with Short Bifurcated Side Chains. <i>Journal of Biological Chemistry</i> , 2010, 285, 24575-24583.  | 3.4  | 98        |
| 27 | MICU1 Interacts with the D-Ring of the MCU Pore to Control Its Ca <sup>2+</sup> Flux and Sensitivity to Ru360. <i>Molecular Cell</i> , 2018, 72, 778-785.e3.  | 9.7  | 92        |
| 28 | About the aromaticity of five-membered heterocycles. <i>Computational and Theoretical Chemistry</i> , 1995, 358, 55-61.   | 1.5  | 91        |
| 29 | Lenz-Majewski mutations in <i>PTDSS1</i> affect phosphatidylinositol 4-phosphate metabolism at ER-PM and ER-Golgi junctions. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, 4314-4319. | 7.1  | 87        |
| 30 | Base Flipping in DNA: Pathways and Energetics Studied with Molecular Dynamic Simulations. <i>Journal of the American Chemical Society</i> , 2002, 124, 7272-7273.   | 13.7 | 84        |
| 31 | Ab Initio QM/MM Dynamics Simulation of the Tetrahedral Intermediate of Serine Proteases: Insights into the Active Site Hydrogen-Bonding Network. <i>Journal of the American Chemical Society</i> , 2002, 124, 14780-14788.                  | 13.7 | 81        |
| 32 | Back to the future with the AGP Ca <sup>2+</sup> flux capacitor. <i>Annals of Botany</i> , 2014, 114, 1069-1085.  | 2.9  | 77        |
| 33 | Visualization of Cellular Phosphoinositide Pools with GFP-Fused Protein Domains. <i>Current Protocols in Cell Biology</i> , 2009, 42, Unit 24.4.  | 2.3  | 70        |
| 34 | Opening Mechanism of G·T/U Pairs in DNA and RNA Duplexes: A Combined Study of Imino Proton Exchange and Molecular Dynamics Simulation. <i>Journal of the American Chemical Society</i> , 2004, 126, 14659-14667.                            | 13.7 | 65        |
| 35 | Motifs of VDAC2 required for mitochondrial Bak import and tBid-induced apoptosis. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, E5590-9.  | 7.1  | 63        |
| 36 | Quantifying lipid changes in various membrane compartments using lipid binding protein domains. <i>Cell Calcium</i> , 2017, 64, 72-82.  | 2.4  | 61        |

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|----|---|------|-----------|
| 37 | Computer Simulation Studies of the Catalytic Mechanism of Human Aldose Reductase. <i>Journal of the American Chemical Society</i> , 2000, 122, 3849-3860.   | 13.7 | 57        |
| 38 | Paracrine Transactivation of the CB1 Cannabinoid Receptor by AT1 Angiotensin and Other Gq/11 Protein-coupled Receptors. <i>Journal of Biological Chemistry</i> , 2009, 284, 16914-16921.  | 3.4  | 53        |
| 39 | MSTO 1 is a cytoplasmic pro-mitochondrial fusion protein, whose mutation induces myopathy and ataxia in humans. <i>EMBO Molecular Medicine</i> , 2017, 9, 967-984.  | 6.9  | 53        |
| 40 | Distribution and Apoptotic Function of Outer Membrane Proteins Depend on Mitochondrial Fusion. <i>Molecular Cell</i> , 2014, 54, 870-878.   | 9.7  | 48        |
| 41 | Differential stability of DNA crossovers in solution mediated by divalent cations. <i>Nucleic Acids Research</i> , 2010, 38, 4163-4172.   | 14.5 | 47        |
| 42 | Mutation in the V2 vasopressin receptor gene, AVPR2, causes nephrogenic syndrome of inappropriate diuresis. <i>Kidney International</i> , 2015, 88, 1070-1078.  | 5.2  | 47        |
| 43 | Heterologous phosphorylation-induced formation of a stability lock permits regulation of inactive receptors by $\beta^2$ -arrestins. <i>Journal of Biological Chemistry</i> , 2018, 293, 876-892.   | 3.4  | 45        |
| 44 | Visualization and manipulation of phosphoinositide dynamics in live cells using engineered protein domains. <i>Pflugers Archiv European Journal of Physiology</i> , 2007, 455, 69-82.   | 2.8  | 44        |
| 45 | Acute depletion of plasma membrane Phosphatidylinositol 4,5-bisphosphate impairs specific steps in G protein-coupled receptor endocytosis. <i>Journal of Cell Science</i> , 2012, 125, 2185-97.   | 2.0  | 44        |
| 46 | BRET-monitoring of the dynamic changes of inositol lipid pools in living cells reveals a PKC-dependent PtdIns4P increase upon EGF and M3 receptor activation. <i>Biochimica Et Biophysica Acta - Molecular and Cell Biology of Lipids</i> , 2016, 1861, 177-187.    | 2.4  | 44        |
| 47 | Live cell imaging of phosphoinositides with expressed inositide binding protein domains. <i>Methods</i> , 2008, 46, 167-176.  | 3.8  | 43        |
| 48 | Energetic and Conformational Aspects of A:T Base-Pair Opening within the DNA Double Helix. <i>ChemPhysChem</i> , 2001, 2, 673-677.  | 2.1  | 42        |
| 49 | Targeted expression of the inositol 1,4,5-triphosphate receptor (IP3R) ligand-binding domain releases Ca <sup>2+</sup> via endogenous IP3R channels. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2005, 102, 7859-7864. | 7.1  | 41        |
| 50 | Oxidative bursts of single mitochondria mediate retrograde signaling toward the ER. <i>Molecular Cell</i> , 2021, 81, 3866-3876.e2.   | 9.7  | 41        |
| 51 | Modelling the catalytic reaction in human aldose reductase. , 1999, 37, 218-227.  |      | 40        |
| 52 | Helical Chirality: a Link between Local Interactions and Global Topology in DNA. <i>PLoS ONE</i> , 2010, 5, e9326.  | 2.5  | 34        |
| 53 | Improved Methodical Approach for Quantitative BRET Analysis of G Protein Coupled Receptor Dimerization. <i>PLoS ONE</i> , 2014, 9, e109503.   | 2.5  | 32        |
| 54 | ORP3 phosphorylation regulates phosphatidylinositol 4-phosphate and Ca <sup>2+</sup> dynamics at PM-ER contact sites. <i>Journal of Cell Science</i> , 2020, 133, .   | 2.0  | 32        |

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|----|---|------|-----------|
| 55 | Signaling events activated by angiotensin II receptors: What goes before and after the calcium signals. <i>Endocrine Research</i> , 1998, 24, 335-344.  | 1.2  | 27        |
| 56 | Investigation of the Fate of Type I Angiotensin Receptor after Biased Activation. <i>Molecular Pharmacology</i> , 2015, 87, 972-981.  | 2.3  | 26        |
| 57 | Plasma membrane phosphatidylinositol 4-phosphate and 4,5-bisphosphate determine the distribution and function of K-Ras4B but not H-Ras proteins. <i>Journal of Biological Chemistry</i> , 2017, 292, 18862-18877.                             | 3.4  | 25        |
| 58 | Organophosphorus compounds. Part 93. Aromaticity of thia- and selenaphospholes: a photoelectron spectroscopic and quantum chemical study. <i>Journal of the Chemical Society Perkin Transactions II</i> , 1995, , 315-318.                    | 0.9  | 23        |
| 59 | Molecular dynamics simulations of the acyl-enzyme and the tetrahedral intermediate in the deacylation step of serine proteases. <i>Proteins: Structure, Function and Bioinformatics</i> , 2002, 47, 357-369.                                  | 2.6  | 23        |
| 60 | Angiotensin type 1A receptor regulates $\beta$ -arrestin binding of the $\beta$ -adrenergic receptor via heterodimerization. <i>Molecular and Cellular Endocrinology</i> , 2017, 442, 113-124.  | 3.2  | 22        |
| 61 | IL-2 receptors preassemble and signal in the ER/Golgi causing resistance to antiproliferative anti-IL-2R $\alpha$ therapies. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 21120-21130. | 7.1  | 22        |
| 62 | Mapping of the Localization of Type 1 Angiotensin Receptor in Membrane Microdomains Using Bioluminescence Resonance Energy Transfer-based Sensors. <i>Journal of Biological Chemistry</i> , 2012, 287, 9090-9099.                             | 3.4  | 21        |
| 63 | Reconciling the lock-and-key and dynamic views of canonical serine protease inhibitor action. <i>FEBS Letters</i> , 2010, 584, 203-206.   | 2.8  | 20        |
| 64 | Regioselectivity in cycloaddition reaction between phosphacetylene and diazomethane: An ab initio study. <i>Journal of Computational Chemistry</i> , 1997, 18, 609-616.   | 3.3  | 19        |
| 65 | Measurement of Inositol 1,4,5-Trisphosphate in Living Cells Using an Improved Set of Resonance Energy Transfer-Based Biosensors. <i>PLoS ONE</i> , 2015, 10, e0125601.  | 2.5  | 19        |
| 66 | Palmitoylation targets the calcineurin phosphatase to the phosphatidylinositol 4-kinase complex at the plasma membrane. <i>Nature Communications</i> , 2021, 12, 6064.  | 12.8 | 18        |
| 67 | Theoretical Investigations on the Retro-Ene Rearrangement of Propargyl Ethers. <i>Journal of Organic Chemistry</i> , 1996, 61, 5831-5836.   | 3.2  | 16        |
| 68 | Determination of the Transition State Ensemble for the Folding of Ubiquitin from a Combination of $\phi$ and $\psi$ Analyses. <i>Journal of Molecular Biology</i> , 2008, 377, 575-588.   | 4.2  | 15        |
| 69 | Quantum mechanical/molecular mechanical study of three stationary points along the deacylation step of the catalytic mechanism of elastase. <i>Theoretical Chemistry Accounts</i> , 2001, 106, 146-151.                                       | 1.4  | 13        |
| 70 | Acute depletion of plasma membrane phosphatidylinositol 4,5-bisphosphate impairs specific steps in endocytosis of the G-protein-coupled receptor. <i>Journal of Cell Science</i> , 2012, 125, 3013-3013.                                      | 2.0  | 13        |
| 71 | The Evidence REVEAL Study: Exploring the Use of Real-World Evidence and Complex Clinical Trial Design by the European Pharmaceutical Industry. <i>Clinical Pharmacology and Therapeutics</i> , 2021, 110, 1180-1189.                          | 4.7  | 13        |
| 72 | Quantum mechanical study of the hydride shift step in the xylose isomerase catalytic reaction with the fragment self-consistent field method. <i>International Journal of Quantum Chemistry</i> , 1999, 75, 215-222.                          | 2.0  | 12        |

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|----|--|-----|-----------|
| 73 | Molecular simulation of conformational transitions in biomolecules using a combination of structure-based potential and empirical valence bond theory. <i>Physical Chemistry Chemical Physics</i> , 2009, 11, 10694.                         | 2.8 | 10        |
| 74 | Loss of hydrogen fluoride from C <sub>2</sub> H <sub>2</sub> F <sub>3</sub> O <sup>+</sup> . A theoretical study of a reaction mechanism. <i>Chemical Physics Letters</i> , 1995, 233, 340-346.  | 2.6 | 8         |
| 75 | Cytosine, the double helix and DNA self-assembly. <i>Journal of Molecular Recognition</i> , 2011, 24, 137-138.   | 2.1 | 8         |
| 76 | A general method for quantifying ligand binding to unmodified receptors using <i>Gussia luciferase</i> . <i>Journal of Biological Chemistry</i> , 2021, 296, 100366.   | 3.4 | 8         |
| 77 | Computational drug repurposing against SARS-CoV-2 reveals plasma membrane cholesterol depletion as key factor of antiviral drug activity. <i>PLoS Computational Biology</i> , 2022, 18, e1010021.  | 3.2 | 8         |
| 78 | Demonstration of Angiotensin II-induced Ras Activation in the trans-Golgi Network and Endoplasmic Reticulum Using Bioluminescence Resonance Energy Transfer-based Biosensors. <i>Journal of Biological Chemistry</i> , 2011, 286, 5319-5327. | 3.4 | 7         |
| 79 | Development of Nonspecific BRET-Based Biosensors to Monitor Plasma Membrane Inositol Lipids in Living Cells. <i>Methods in Molecular Biology</i> , 2019, 1949, 23-34.  | 0.9 | 5         |
| 80 | A density functional study of the interconversion of carbonyls and alcohols in solution: Comparison of reaction mechanisms involving NADPH, histidine, and tyrosine. <i>International Journal of Quantum Chemistry</i> , 2001, 84, 276-281.  | 2.0 | 3         |
| 81 | Fluorescence imaging detection of nanodomain redox signaling events at organellar contacts. <i>STAR Protocols</i> , 2022, 3, 101119.   | 1.2 | 3         |
| 82 | Modeling DNA Deformation. , 2006, , 169-210.   |     | 2         |
| 83 | Hypothalamic Nesfatin-1 Resistance May Underlie the Development of Type 2 Diabetes Mellitus in Maternally Undernourished Non-obese Rats. <i>Frontiers in Neuroscience</i> , 2022, 16, 828571.  | 2.8 | 2         |
| 84 | Colocalized neurotransmitters in the hindbrain cooperate in adaptation to chronic hypernatremia. <i>Brain Structure and Function</i> , 2020, 225, 969-984.   | 2.3 | 1         |
| 85 | Functional interactions within the angiotensin AT <sub>1</sub> receptor oligomers –the role of the conserved DRY motif. <i>FASEB Journal</i> , 2011, 25, 1b406.  | 0.5 | 0         |
| 86 | Activation of STIM1–Orai1 involves an intramolecular switching mechanism. <i>FASEB Journal</i> , 2011, 25, 956.1.  | 0.5 | 0         |
| 87 | Detection of angiotensin II-induced Ras activation in the trans-Golgi network and the endoplasmic reticulum using BRET-based biosensors. <i>FASEB Journal</i> , 2011, 25, 1b131.   | 0.5 | 0         |
| 88 | Study of the Compartmentalization of Type 1 Angiotensin Receptor Using Bioluminescence Resonance Energy Transfer-based Sensors. <i>FASEB Journal</i> , 2012, 26, 1b174.  | 0.5 | 0         |
| 89 | The Effect of Phosphatidylinositol 4,5-bisphosphate Depletion on the Internalization of G Protein-coupled Receptors. <i>FASEB Journal</i> , 2013, 27, 1050.2.  | 0.5 | 0         |
| 90 | Characterization of the Inherited I130N Substitution in V2 Vasopressin Receptor Revealed a Gain-of-Function Mutation Leading to NSIAD. <i>FASEB Journal</i> , 2015, 29, 809.8.   | 0.5 | 0         |

| #  | ARTICLE  | IF  | CITATIONS |
|----|--|-----|-----------|
| 91 | Monitoring the Dynamic Change of Inositol Lipid Pools upon EGFR and M 3 R Activation in Live Cells. FASEB Journal, 2015, 29, 715.1.  | 0.5 | 0         |
| 92 | A 10-year impact assessment of the Efficacy and Mechanism Evaluation (EME) programme: an independent mixed-method evaluation study. Efficacy and Mechanism Evaluation, 2021, 8, 1-106. | 0.7 | 0         |