Steven T Olson

List of Publications by Year
in descending order

76 papers	3,480 citations	108046 37 h-index	162838 57 g-index
76 all docs	76 docs citations	76 times ranked	2547 citing authors

#	Article	IF	Citations
1	Commentary on â€œThe polymerization of proteins: The action of thrombin on fibrinogenâ€• Archives of Biochemistry and Biophysics, 2022, , 109176.	1.4	0
2	Heparin activation of protein Z-dependent protease inhibitor (ZPI) allosterically blocks protein Z activation through an extended heparin-binding site. Journal of Biological Chemistry, 2022, 298, 102022.	1.6	3
3	Paramount Importance of Core Conformational Changes for Heparin Allosteric Activation of Antithrombin. Biochemistry, 2021, 60, 1201-1213.	1.2	5
4	An in vitro Model System for Evaluating Remote Magnetic Nanoparticle Movement and Fibrinolysis . International Journal of Nanomedicine, 2020, Volume 15, 1549-1568.	3.3	11
5	Cooperative Interactions of Three Hotspot Heparin Binding Residues Are Critical for Allosteric Activation of Antithrombin by Heparin. Biochemistry, 2018, 57, 2211-2226.	1.2	7
6	Lipid oxidation inactivates the anticoagulant function of protein Z-dependent protease inhibitor (ZPI). Journal of Biological Chemistry, 2017, 292, 14625-14635.	1.6	9
7	Disease-causing mutations in the serpin antithrombin reveal a key domain critical for inhibiting protease activities. Journal of Biological Chemistry, 2017, 292, 16513-16520.	1.6	15
8	Inhibitory serpins. New insights into their folding, polymerization, regulation and clearance. Biochemical Journal, 2016, 473, 2273-2293.	1.7	72
9	Thermodynamic and Kinetic Characterization of the Protein Z-dependent Protease Inhibitor (ZPI)-Protein Z Interaction Reveals an Unexpected Role for ZPI Lys-239. Journal of Biological Chemistry, 2015, 290, 9906-9918.	1.6	8
10	Saturation Mutagenesis of the Antithrombin Reactive Center Loop P14 Residue Supports a Three-step Mechanism of Heparin Allosteric Activation Involving Intermediate and Fully Activated States. Journal of Biological Chemistry, 2015, 290, 28020-28036.	1.6	8
11	Structural characterization of new deoxycytidine kinase inhibitors rationalizes the affinity-determining moieties of the molecules. Acta Crystallographica Section D: Biological Crystallography, 2014, 70, 68-78.	2.5	7
12	Conformational Activation of Antithrombin by Heparin Involves an Altered Exosite Interaction with Protease. Journal of Biological Chemistry, 2014, 289, 34049-34064.	1.6	25
13	Targeted mutagenesis of zebrafish antithrombin III triggers disseminated intravascular coagulation and thrombosis, revealing insight into function. Blood, 2014, 124, 142-150.	0.6	52
14	The Allosteric Mechanism of Activation of Antithrombin as an Inhibitor of Factor IXa and Factor Xa. Journal of Biological Chemistry, 2013, 288, 33611-33619.	1.6	14
15	Kinetic Intermediates en Route to the Final Serpin-Protease Complex. Journal of Biological Chemistry, 2013, 288, 32020-32035.	1.6	14
16	Specificity and selectivity profile of EP217609: a new neutralizable dual-action anticoagulant that targets thrombin and factor Xa. Blood, 2012, 119, 2187-2195.	0.6	26
17	Structural basis for catalytic activation of protein Zâ€“dependent protease inhibitor (ZPI) by protein Z. Blood, 2012, 120, 1726-1733.	0.6	19
18	Characterization of the Heparin-Binding Site of the Protein Z-Dependent Protease Inhibitor. Biochemistry, 2012, 51, 4078-4085.	1.2	18

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19	Heparin Is a Major Activator of the Anticoagulant Serpin, Protein Z-dependent Protease Inhibitor. Journal of Biological Chemistry, 2011, 286, 8740-8751.	1.6	41
20	Regulation of Proteases by Protein Inhibitors of the Serpin Superfamily. Progress in Molecular Biology and Translational Science, 2011, 99, 185-240.	0.9	54
21	Matriptase is inhibited by extravascular antithrombin in epithelial cells but not in most carcinoma cells. American Journal of Physiology - Cell Physiology, 2011, 301, C1093-C1103.	2.1	8
22	Basis for the Specificity and Activation of the Serpin Protein Z-dependent Proteinase Inhibitor (ZPI) as an Inhibitor of Membrane-associated Factor Xa. Journal of Biological Chemistry, 2010, 285, 20399-20409.	1.6	42
23	Molecular mechanisms of antithrombinâ€“heparin regulation of blood clotting proteinases. A paradigm for understanding proteinase regulation by serpin family protein proteinase inhibitors. Biochimie, 2010, 92, 1587-1596.	1.3	129
24	Kinetic evidence that allosteric activation of antithrombin by heparin is mediated by two sequential conformational changes. Archives of Biochemistry and Biophysics, 2010, 504, 169-176.	1.4	20
25	The Signature 3-O-Sulfo Group of the Anticoagulant Heparin Sequence Is Critical for Heparin Binding to Antithrombin but Is Not Required for Allosteric Activation. Journal of Biological Chemistry, 2009, 284, 27054-27064.	1.6	34
26	Exosite Determinants of Serpin Specificity. Journal of Biological Chemistry, 2009, 284, 20441-20445.	1.6	73
27	Engineering Functional Antithrombin Exosites in Î±1-Proteinase Inhibitor That Specifically Promote the Inhibition of Factor Xa and Factor IXa. Journal of Biological Chemistry, 2009, 284, 1550-1558.	1.6	16
28	Activation of antithrombin as a factor IXa and Xa inhibitor involves mitigation of repression rather than positive enhancement. FEBS Letters, 2009, 583, 3397-3400.	1.3	13
29	Antiangiogenic Forms of Antithrombin Specifically Bind to the Anticoagulant Heparin Sequence. Biochemistry, 2008, 47, 13610-13619.	1.2	36
30	Kinetic Characterization of the Protein Z-dependent Protease Inhibitor Reaction with Blood Coagulation Factor Xa. Journal of Biological Chemistry, 2008, 283, 29770-29783.	1.6	41
31	Characterization of the Conformational Alterations, Reduced Anticoagulant Activity, and Enhanced Antiangiogenic Activity of Prelatent Antithrombin. Journal of Biological Chemistry, 2008, 283, 14417-14429.	1.6	14
32	Serine and Cysteine Proteases Are Translocated to Similar Extents upon Formation of Covalent Complexes with Serpins. Journal of Biological Chemistry, 2007, 282, 2305-2313.	1.6	24
33	Mechanism by Which Exosites Promote the Inhibition of Blood Coagulation Proteases by Heparin-activated Antithrombin. Journal of Biological Chemistry, 2007, 282, 33609-33622.	1.6	28
34	Cytokine Response Modifier A Inhibition of Initiator Caspases Results in Covalent Complex Formation and Dissociation of the Caspase Tetramer. Journal of Biological Chemistry, 2006, 281, 38781-38790.	1.6	26
35	Residues Tyr253 and Glu255 in Strand 3 of Î²-Sheet C of Antithrombin Are Key Determinants of an Exosite Made Accessible by Heparin Activation to Promote Rapid Inhibition of Factors Xa and IXa. Journal of Biological Chemistry, 2006, 281, 13424-13432.	1.6	37
36	Importance of Tryptophan 49 of Antithrombin in Heparin Binding and Conformational Activation. Biochemistry, 2005, 44, 11660-11668.	1.2	19

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37	Specificity and reactive loop length requirements for crmA inhibition of serine proteases. Protein Science, 2005, 14, 533-542.	3.1	20
38	Roles of N-Terminal Region Residues Lys11, Arg13, and Arg24 of Antithrombin in Heparin Recognition and in Promotion and Stabilization of the Heparin-Induced Conformational Changeâ€. Biochemistry, 2004, 43, 675-683.	1.2	24
39	Accelerating ability of synthetic oligosaccharides on antithrombin inhibition of proteinases of the clotting and fibrinolytic systems Comparison with heparin and low-molecular-weight heparin. Thrombosis and Haemostasis, 2004, 92, 929-939.	1.8	121
40	Serpinâ€“ligand interactions. Methods, 2004, 32, 93-109.	1.9	21
41	Antiangiogenic antithrombin down-regulates the expression of the proangiogenic heparan sulfate proteoglycan, perlecan, in endothelial cells. Blood, 2004, 103, 1185-1191.	0.6	55
42	Effect of Native and Cleaved Forms of Antithrombin on Nuclear Factor ÎºB Activation in Endothelial Cells.. Blood, 2004, 104, 3923-3923.	0.6	0
43	Contribution of Basic Residues of the Autolysis Loop to the Substrate and Inhibitor Specificity of Factor IXa. Journal of Biological Chemistry, 2003, 278, 25032-25038.	1.6	31
44	Deletion of P1 Arginine in a Novel Antithrombin Variant (Antithrombin London) Abolishes Inhibitory Activity but Enhances Heparin Affinity and Is Associated with Early Onset Thrombosis. Journal of Biological Chemistry, 2003, 278, 13688-13695.	1.6	30
45	Localization of an Antithrombin Exosite That Promotes Rapid Inhibition of Factors Xa and IXa Dependent on Heparin Activation of the Serpin. Journal of Biological Chemistry, 2003, 278, 51433-51440.	1.6	40
46	Heparin and Calcium Ions Dramatically Enhance Antithrombin Reactivity with Factor IXa by Generating New Interaction Exosites. Biochemistry, 2003, 42, 8143-8152.	1.2	67
47	Antithrombin III Phenylalanines 122 and 121 Contribute to Its High Affinity for Heparin and Its Conformational Activation. Journal of Biological Chemistry, 2003, 278, 15941-15950.	1.6	52
48	Importance of Lysine 125 for Heparin Binding and Activation of Antithrombin. Biochemistry, 2002, 41, 4779-4788.	1.2	44
49	Identification of Critical Molecular Interactions Mediating Heparin Activation of Antithrombin Implications for the Design of Improved Heparin Anticoagulants. Trends in Cardiovascular Medicine, 2002, 12, 198-205.	2.3	58
50	Heparin Activates Antithrombin Anticoagulant Function by Generating New Interaction Sites (Exosites) for Blood Clotting Proteinases. Trends in Cardiovascular Medicine, 2002, 12, 331-338.	2.3	95
51	Resolution of Michaelis Complex, Acylation, and Conformational Change Steps in the Reactions of the Serpin, Plasminogen Activator Inhibitor-1, with Tissue Plasminogen Activator and Trypsinâ€. Biochemistry, 2001, 40, 11742-11756.	1.2	95
52	The Antithrombin P1 Residue Is Important for Target Proteinase Specificity but Not for Heparin Activation of the Serpin. Characterization of P1 Antithrombin Variants with Altered Proteinase Specificity but Normal Heparin Activationâ€. Biochemistry, 2001, 40, 6670-6679.	1.2	52
53	Heparin Enhances the Specificity of Antithrombin for Thrombin and Factor Xa Independent of the Reactive Center Loop Sequence. Journal of Biological Chemistry, 2001, 276, 14961-14971.	1.6	128
54	Lysine 114 of Antithrombin Is of Crucial Importance for the Affinity and Kinetics of Heparin Pentasaccharide Binding. Journal of Biological Chemistry, 2001, 276, 43809-43817.	1.6	54

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55	The pH Dependence of Serpin-Proteinase Complex Dissociation Reveals a Mechanism of Complex Stabilization Involving Inactive and Active Conformational States of the Proteinase Which Are Perturbable by Calcium. Journal of Biological Chemistry, 2001, 276, 32446-32455.	1.6	51
56	The Nâ€terminal region of cystatin A (stefin A) binds to papain subsequent to the two hairpin loops of the inhibitor. Demonstration of twoâ€step binding by rapidâ€kinetic studies of cystatin A labeled at the Nâ€terminus with a fluorescent reporter group. Protein Science, 2000, 9, 2218-2224.	3.1	13
57	Critical Role of the Linker Region between Helix D and Strand 2A in Heparin Activation of Antithrombin. Journal of Biological Chemistry, 2000, 275, 2698-2704.	1.6	44
58	Partitioning of Serpin-Proteinase Reactions between Stable Inhibition and Substrate Cleavage Is Regulated by the Rate of Serpin Reactive Center Loop Insertion into Î²-Sheet A. Journal of Biological Chemistry, 2000, 275, 5839-5844.	1.6	94
59	Role of Arginine 129 in Heparin Binding and Activation of Antithrombin. Journal of Biological Chemistry, 2000, 275, 18976-18984.	1.6	42
60	The Region of Antithrombin Interacting with Full-Length Heparin Chains Outside the High-Affinity Pentasaccharide Sequence Extends to Lys136 but Not to Lys139â€. Biochemistry, 2000, 39, 8512-8518.	1.2	38
61	Importance of the P2 Glycine of Antithrombin in Target Proteinase Specificity, Heparin Activation, and the Efficiency of Proteinase Trapping as Revealed by a P2 Gly â†' Pro Mutation. Journal of Biological Chemistry, 1999, 274, 28142-28149.	1.6	22
62	The Role of Arg46 and Arg47 of Antithrombin in Heparin Bindingâ€. Biochemistry, 1999, 38, 10196-10204.	1.2	52
63	Mechanism of Heparin Activation of Antithrombin:Â Evidence for an Induced-Fit Model of Allosteric Activation Involving Two Interaction Subsitesâ€. Biochemistry, 1998, 37, 13033-13041.	1.2	73
64	Change in Environment of the P1 Side Chain upon Progression from the Michaelis Complex to the Covalent Serpinâ^'Proteinase Complexâ€. Biochemistry, 1998, 37, 13110-13119.	1.2	25
65	Deconvolution of the Fluorescence Emission Spectrum of Human Antithrombin and Identification of the Tryptophan Residues That Are Responsive to Heparin Binding. Journal of Biological Chemistry, 1998, 273, 23283-23289.	1.6	52
66	Mechanism of Heparin Activation of Antithrombin. Journal of Biological Chemistry, 1998, 273, 7478-7487.	1.6	167
67	Inactivation of papain by antithrombin due to autolytic digestion: a model of serpin inactivation of cysteine proteinases. Biochemical Journal, 1998, 335, 701-709.	1.7	21
68	Inactivation of Thrombin by Antithrombin Is Accompanied by Inactivation of Regulatory Exosite I. Journal of Biological Chemistry, 1997, 272, 19837-19845.	1.6	63
69	The Oligosaccharide Side Chain on Asn-135 of Î±-Antithrombin, Absent in Î²-Antithrombin, Decreases the Heparin Affinity of the Inhibitor by Affecting the Heparin-Induced Conformational Change. Biochemistry, 1997, 36, 6682-6691.	1.2	110
70	Antithrombin. Advances in Experimental Medicine and Biology, 1997, , 17-33.	0.8	51
71	Mechanism of Heparin Activation of Antithrombin. Evidence for Reactive Center Loop Preinsertion with Expulsion upon Heparin Binding. Biochemistry, 1996, 35, 8495-8503.	1.2	134
72	Role of the Catalytic Serine in the Interactions of Serine Proteinases with Protein Inhibitors of the Serpin Family. Journal of Biological Chemistry, 1995, 270, 30007-30017.	1.6	76

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73	Mechanism of action of heparin and heparin-like antithrombotics. Journal of Computer - Aided Molecular Design, 1994, 1, 479-501.	1.0	17
74	Transmission of conformational change from the heparin binding site to the reactive center of antithrombin. Biochemistry, 1993, 32, 8385-8389.	1.2	75
75	Immunologic evidence for insertion of the reactive-bond loop of antithrombin into the A .beta.-sheet of the inhibitor during trapping of target proteinases. Biochemistry, 1993, 32, 6501-6505.	1.2	72
76	[30] Kinetic characterization of heparin-catalyzed and uncatalyzed inhibition of blood coagulation proteinases by antithrombin. Methods in Enzymology, 1993, 222, 525-559.	0.4	233