Alfred L Goldberg

List of Publications by Citations

213 papers	45,167 citations	102 h-index	212 g-index
220 ext. papers	49,112 ext. citations	14.6 avg, IF	7.68 L-index

#	Paper	IF	Citations
213	Structure and functions of the 20S and 26S proteasomes. *Annual Review of Biochemistry*, **1996**, 65, 801-47	29.1	2175
212	Inhibitors of the proteasome block the degradation of most cell proteins and the generation of peptides presented on MHC class I molecules. *Cell*, **1994**, 78, 761-71	56.2	2173
211	Foxo transcription factors induce the atrophy-related ubiquitin ligase atrogin-1 and cause skeletal muscle atrophy. *Cell*, **2004**, 117, 399-412	56.2	2133
210	The ubiquitin-proteasome pathway is required for processing the NF-kappa B1 precursor protein and the activation of NF-kappa B. *Cell*, **1994**, 78, 773-85	56.2	1962
209	Protein degradation and protection against misfolded or damaged proteins. *Nature*, **2003**, 426, 895-9	50.4	1644
208	FoxO3 controls autophagy in skeletal muscle in vivo. *Cell Metabolism*, **2007**, 6, 458-71	24.6	1393
207	Proteasome inhibitors: valuable new tools for cell biologists. *Trends in Cell Biology*, **1998**, 8, 397-403	18.3	1188
206	Multiple types of skeletal muscle atrophy involve a common program of changes in gene expression. *FASEB Journal*, **2004**, 18, 39-51	0.9	1163
205	FoxO3 coordinately activates protein degradation by the autophagic/lysosomal and proteasomal pathways in atrophying muscle cells. *Cell Metabolism*, **2007**, 6, 472-83	24.6	1141
204	Mechanisms of muscle wasting. The role of the ubiquitin-proteasome pathway. *New England Journal of Medicine*, **1996**, 335, 1897-905	59.2	953
203	Proteasome inhibitors: from research tools to drug candidates. *Chemistry and Biology*, **2001**, 8, 739-58		916
202	Cellular defenses against unfolded proteins: a cell biologist thinks about neurodegenerative diseases. *Neuron*, **2001**, 29, 15-32	13.9	870
201	Protein degradation by the ubiquitin-proteasome pathway in normal and disease states. *Journal of the American Society of Nephrology: JASN*, **2006**, 17, 1807-19	12.7	816
200	Degradation of cell proteins and the generation of MHC class I-presented peptides. *Annual Review of Immunology*, **1999**, 17, 739-79	34.7	789
199	PGC-1alpha protects skeletal muscle from atrophy by suppressing FoxO3 action and atrophy-specific gene transcription. *Proceedings of the National Academy of Sciences of the United States of America*, **2006**, 103, 16260-5	11.5	708
198	Reversal of cancer cachexia and muscle wasting by ActRIIB antagonism leads to prolonged survival. *Cell*, **2010**, 142, 531-43	56.2	661
197	Muscle wasting in disease: molecular mechanisms and promising therapies. *Nature Reviews Drug Discovery*, **2015**, 14, 58-74	64.1	570

196	Proteolysis, proteasomes and antigen presentation. *Nature*, **1992**, 357, 375-9	50.4	544
195	Gamma-interferon and expression of MHC genes regulate peptide hydrolysis by proteasomes. *Nature*, **1993**, 365, 264-7	50.4	523
194	Muscle protein breakdown and the critical role of the ubiquitin-proteasome pathway in normal and disease states. *Journal of Nutrition*, **1999**, 129, 227S-237S	4.1	518
193	During muscle atrophy, thick, but not thin, filament components are degraded by MuRF1-dependent ubiquitylation. *Journal of Cell Biology*, **2009**, 185, 1083-95	7.3	437
192	IGF-I stimulates muscle growth by suppressing protein breakdown and expression of atrophy-related ubiquitin ligases, atrogin-1 and MuRF1. *American Journal of Physiology - Endocrinology and Metabolism*, **2004**, 287, E591-601	6	436
191	Rapid disuse and denervation atrophy involve transcriptional changes similar to those of muscle wasting during systemic diseases. *FASEB Journal*, **2007**, 21, 140-55	0.9	429
190	The sizes of peptides generated from protein by mammalian 26 and 20 S proteasomes. Implications for understanding the degradative mechanism and antigen presentation. *Journal of Biological Chemistry*, **1999**, 274, 3363-71	5.4	429
189	An IFN-gamma-induced aminopeptidase in the ER, ERAP1, trims precursors to MHC class I-presented peptides. *Nature Immunology*, **2002**, 3, 1169-76	19.1	414
188	The Logic of the 26S Proteasome. *Cell*, **2017**, 169, 792-806	56.2	411
187	Docking of the proteasomal ATPases' carboxyl termini in the 20S proteasome's alpha ring opens the gate for substrate entry. *Molecular Cell*, **2007**, 27, 731-44	17.6	405
186	The mechanism and functions of ATP-dependent proteases in bacterial and animal cells. *FEBS Journal*, **1992**, 203, 9-23		382
185	Identity of the 19S 'prosome' particle with the large multifunctional protease complex of mammalian cells (the proteasome). *Nature*, **1988**, 331, 192-4	50.4	366
184	Altered peptidase and viral-specific T cell response in LMP2 mutant mice. *Immunity*, **1994**, 1, 533-41	32.3	362
183	Proteasome inhibition leads to a heat-shock response, induction of endoplasmic reticulum chaperones, and thermotolerance. *Journal of Biological Chemistry*, **1997**, 272, 9086-92	5.4	361
182	Regulation of autophagy and the ubiquitin-proteasome system by the FoxO transcriptional network during muscle atrophy. *Nature Communications*, **2015**, 6, 6670	17.4	357
181	The axial channel of the proteasome core particle is gated by the Rpt2 ATPase and controls both substrate entry and product release. *Molecular Cell*, **2001**, 7, 1143-52	17.6	347
180	Certain pairs of ubiquitin-conjugating enzymes (E2s) and ubiquitin-protein ligases (E3s) synthesize nondegradable forked ubiquitin chains containing all possible isopeptide linkages. *Journal of Biological Chemistry*, **2007**, 282, 17375-86	5.4	326
179	Lactacystin and clasto-lactacystin beta-lactone modify multiple proteasome beta-subunits and inhibit intracellular protein degradation and major histocompatibility complex class I antigen presentation. *Journal of Biological Chemistry*, **1997**, 272, 13437-45	5.4	322

178	Eukaryotic proteasomes cannot digest polyglutamine sequences and release them during degradation of polyglutamine-containing proteins. *Molecular Cell*, **2004**, 14, 95-104	17.6	319
177	Importance of the different proteolytic sites of the proteasome and the efficacy of inhibitors varies with the protein substrate. *Journal of Biological Chemistry*, **2006**, 281, 8582-90	5.4	315
176	What do we really know about the ubiquitin-proteasome pathway in muscle atrophy?. *Current Opinion in Clinical Nutrition and Metabolic Care*, **2001**, 4, 183-90	3.8	308
175	PAN, the proteasome-activating nucleotidase from archaebacteria, is a protein-unfolding molecular chaperone. *Nature Cell Biology*, **2000**, 2, 833-9	23.4	303
174	Importance of the ATP-ubiquitin-proteasome pathway in the degradation of soluble and myofibrillar proteins in rabbit muscle extracts. *Journal of Biological Chemistry*, **1996**, 271, 26690-7	5.4	297
173	Mechanism of gate opening in the 20S proteasome by the proteasomal ATPases. *Molecular Cell*, **2008**, 30, 360-8	17.6	296
172	A role for the ubiquitin-dependent proteolytic pathway in MHC class I-restricted antigen presentation. *Nature*, **1993**, 363, 552-4	50.4	292
171	Functions of the proteasome: from protein degradation and immune surveillance to cancer therapy. *Biochemical Society Transactions*, **2007**, 35, 12-7	5.1	290
170	BMP signaling controls muscle mass. *Nature Genetics*, **2013**, 45, 1309-18	36.3	280
169	The importance of the proteasome and subsequent proteolytic steps in the generation of antigenic peptides. *Molecular Immunology*, **2002**, 39, 147-64	4.3	273
168	Patterns of gene expression in atrophying skeletal muscles: response to food deprivation. *FASEB Journal*, **2002**, 16, 1697-712	0.9	264
167	The FOXO3a transcription factor regulates cardiac myocyte size downstream of AKT signaling. *Journal of Biological Chemistry*, **2005**, 280, 20814-23	5.4	260
166	Tau-driven 26S proteasome impairment and cognitive dysfunction can be prevented early in disease by activating cAMP-PKA signaling. *Nature Medicine*, **2016**, 22, 46-53	50.5	258
165	Lassomycin, a ribosomally synthesized cyclic peptide, kills mycobacterium tuberculosis by targeting the ATP-dependent protease ClpC1P1P2. *Chemistry and Biology*, **2014**, 21, 509-518		255
164	Monitoring activity and inhibition of 26S proteasomes with fluorogenic peptide substrates. *Methods in Enzymology*, **2005**, 398, 364-78	1.7	253
163	The ER aminopeptidase, ERAP1, trims precursors to lengths of MHC class I peptides by a "molecular ruler" mechanism. *Proceedings of the National Academy of Sciences of the United States of America*, **2005**, 102, 17107-12	11.5	238
162	Interferon-gamma can stimulate post-proteasomal trimming of the N terminus of an antigenic peptide by inducing leucine aminopeptidase. *Journal of Biological Chemistry*, **1998**, 273, 18734-42	5.4	238
161	Proteins are unfolded on the surface of the ATPase ring before transport into the proteasome. *Molecular Cell*, **2001**, 8, 1339-49	17.6	215

160	ATP hydrolysis by the proteasome regulatory complex PAN serves multiple functions in protein degradation. *Molecular Cell*, **2003**, 11, 69-78	17.6	210
159	ATP binding to PAN or the 26S ATPases causes association with the 20S proteasome, gate opening, and translocation of unfolded proteins. *Molecular Cell*, **2005**, 20, 687-98	17.6	206
158	Post-proteasomal antigen processing for major histocompatibility complex class I presentation. *Nature Immunology*, **2004**, 5, 670-7	19.1	204
157	Acetylation-mediated proteasomal degradation of core histones during DNA repair and spermatogenesis. *Cell*, **2013**, 153, 1012-24	56.2	203
156	TNF-alpha increases ubiquitin-conjugating activity in skeletal muscle by up-regulating UbcH2/E220k. *FASEB Journal*, **2003**, 17, 1048-57	0.9	200
155	Proteasome inhibitors cause induction of heat shock proteins and trehalose, which together confer thermotolerance in Saccharomyces cerevisiae. *Molecular and Cellular Biology*, **1998**, 18, 30-8	4.8	198
154	Proteolysis and class I major histocompatibility complex antigen presentation. *Immunological Reviews*, **1999**, 172, 49-66	11.3	192
153	hRpn13/ADRM1/GP110 is a novel proteasome subunit that binds the deubiquitinating enzyme, UCH37. *EMBO Journal*, **2006**, 25, 5742-53	13	189
152	Myostatin/activin pathway antagonism: molecular basis and therapeutic potential. *International Journal of Biochemistry and Cell Biology*, **2013**, 45, 2333-47	5.6	185
151	Development of proteasome inhibitors as research tools and cancer drugs. *Journal of Cell Biology*, **2012**, 199, 583-8	7.3	184
150	Ubiquitinated proteins activate the proteasome by binding to Usp14/Ubp6, which causes 20S gate opening. *Molecular Cell*, **2009**, 36, 794-804	17.6	174
149	The ATP-dependent HslVU protease from Escherichia coli is a four-ring structure resembling the proteasome. *Nature Structural Biology*, **1997**, 4, 133-9		166
148	Peroxisome proliferator-activated receptor gamma coactivator 1alpha or 1beta overexpression inhibits muscle protein degradation, induction of ubiquitin ligases, and disuse atrophy. *Journal of Biological Chemistry*, **2010**, 285, 19460-71	5.4	165
147	Processive degradation of proteins and other catalytic properties of the proteasome from Thermoplasma acidophilum. *Journal of Biological Chemistry*, **1997**, 272, 1791-8	5.4	165
146	Ubiquitin ligase Nedd4 promotes alpha-synuclein degradation by the endosomal-lysosomal pathway. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 17004-9	11.5	163
145	Properties of the hybrid form of the 26S proteasome containing both 19S and PA28 complexes. *EMBO Journal*, **2002**, 21, 2636-45	13	161
144	Why do cellular proteins linked to K63-polyubiquitin chains not associate with proteasomes?. *EMBO Journal*, **2013**, 32, 552-65	13	160
143	ATP binds to proteasomal ATPases in pairs with distinct functional effects, implying an ordered reaction cycle. *Cell*, **2011**, 144, 526-38	56.2	159

142	Endocrine regulation of protein breakdown in skeletal muscle. *Diabetes/metabolism Reviews*, **1988**, 4, 751-72		158
141	Muscle wasting in aged, sarcopenic rats is associated with enhanced activity of the ubiquitin proteasome pathway. *Journal of Biological Chemistry*, **2010**, 285, 39597-608	5.4	156
140	Range of sizes of peptide products generated during degradation of different proteins by archaeal proteasomes. *Journal of Biological Chemistry*, **1998**, 273, 1982-9	5.4	154
139	Mechanisms of skeletal muscle aging: insights from Drosophila and mammalian models. *DMM Disease Models and Mechanisms*, **2013**, 6, 1339-52	4.1	153
138	Identification of the gal4 suppressor Sug1 as a subunit of the yeast 26S proteasome. *Nature*, **1996**, 379, 655-7	50.4	153
137	The effect of protease inhibitors and decreased temperature on the degradation of different classes of proteins in cultured hepatocytes. *Journal of Cellular Physiology*, **1979**, 101, 439-57	7	153
136	Structural basis for antigenic peptide precursor processing by the endoplasmic reticulum aminopeptidase ERAP1. *Nature Structural and Molecular Biology*, **2011**, 18, 604-13	17.6	151
135	ATP-dependent protease La (lon) from Escherichia coli. *Methods in Enzymology*, **1994**, 244, 350-75	1.7	147
134	Pathway for degradation of peptides generated by proteasomes: a key role for thimet oligopeptidase and other metallopeptidases. *Journal of Biological Chemistry*, **2004**, 279, 46723-32	5.4	146
133	The caspase-like sites of proteasomes, their substrate specificity, new inhibitors and substrates, and allosteric interactions with the trypsin-like sites. *Journal of Biological Chemistry*, **2003**, 278, 35869-77	5.4	146
132	Heat shock and oxygen radicals stimulate ubiquitin-dependent degradation mainly of newly synthesized proteins. *Journal of Cell Biology*, **2008**, 182, 663-73	7.3	145
131	Proteasome-mediated processing of Nrf1 is essential for coordinate induction of all proteasome subunits and p97. *Current Biology*, **2014**, 24, 1573-1583	6.3	141
130	Ubiquitin conjugation by the N-end rule pathway and mRNAs for its components increase in muscles of diabetic rats. *Journal of Clinical Investigation*, **1999**, 104, 1411-20	15.9	140
129	The influence of skeletal muscle on systemic aging and lifespan. *Aging Cell*, **2013**, 12, 943-9	9.9	137
128	Isolation of mammalian 26S proteasomes and p97/VCP complexes using the ubiquitin-like domain from HHR23B reveals novel proteasome-associated proteins. *Biochemistry*, **2009**, 48, 2538-49	3.2	137
127	ATP-dependent steps in the binding of ubiquitin conjugates to the 26S proteasome that commit to degradation. *Molecular Cell*, **2010**, 40, 671-81	17.6	135
126	An archaebacterial ATPase, homologous to ATPases in the eukaryotic 26 S proteasome, activates protein breakdown by 20 S proteasomes. *Journal of Biological Chemistry*, **1999**, 274, 26008-14	5.4	135
125	Ubiquitylation by Trim32 causes coupled loss of desmin, Z-bands, and thin filaments in muscle atrophy. *Journal of Cell Biology*, **2012**, 198, 575-89	7.3	134

124	Mycobacterium tuberculosis ClpP1 and ClpP2 function together in protein degradation and are required for viability in vitro and during infection. *PLoS Pathogens*, **2012**, 8, e1002511	7.6	130
123	Proteasome subunits X and Y alter peptidase activities in opposite ways to the interferon-gamma-induced subunits LMP2 and LMP7. *Journal of Biological Chemistry*, **1996**, 271, 17275-80	5.4	130
122	Coordinate activation of autophagy and the proteasome pathway by FoxO transcription factor. *Autophagy*, **2008**, 4, 378-80	10.2	128
121	E. coli contains eight soluble proteolytic activities, one being ATP dependent. *Nature*, **1981**, 292, 652-4	50.4	128
120	The cytosolic endopeptidase, thimet oligopeptidase, destroys antigenic peptides and limits the extent of MHC class I antigen presentation. *Immunity*, **2003**, 18, 429-40	32.3	125
119	SIRT1 protein, by blocking the activities of transcription factors FoxO1 and FoxO3, inhibits muscle atrophy and promotes muscle growth. *Journal of Biological Chemistry*, **2013**, 288, 30515-30526	5.4	124
118	Major histocompatibility complex class I-presented antigenic peptides are degraded in cytosolic extracts primarily by thimet oligopeptidase. *Journal of Biological Chemistry*, **2001**, 276, 36474-81	5.4	119
117	Autoubiquitination of the 26S proteasome on Rpn13 regulates breakdown of ubiquitin conjugates. *EMBO Journal*, **2014**, 33, 1159-76	13	116
116	Protein synthesis during work-induced growth of skeletal muscle. *Journal of Cell Biology*, **1968**, 36, 653-8	7.3	115
115	Protein synthesis in tonic and phasic skeletal muscles. *Nature*, **1967**, 216, 1219-20	50.4	113
114	The N-end rule pathway catalyzes a major fraction of the protein degradation in skeletal muscle. *Journal of Biological Chemistry*, **1998**, 273, 25216-22	5.4	106
113	The cyclic peptide ecumicin targeting ClpC1 is active against Mycobacterium tuberculosis in vivo. *Antimicrobial Agents and Chemotherapy*, **2015**, 59, 880-9	5.9	105
112	Heat shock in Escherichia coli alters the protein-binding properties of the chaperonin groEL by inducing its phosphorylation. *Nature*, **1992**, 357, 167-9	50.4	103
111	Why does threonine, and not serine, function as the active site nucleophile in proteasomes?. *Journal of Biological Chemistry*, **2000**, 275, 14831-7	5.4	102
110	Proteasomes and their associated ATPases: a destructive combination. *Journal of Structural Biology*, **2006**, 156, 72-83	3.4	95
109	Trophic functions of the neuron. 3. Mechanisms of neurotrophic interactions. Effects of use and disuse on amino acid transport and protein turnover in muscle. *Annals of the New York Academy of Sciences*, **1974**, 228, 190-201	6.5	92
108	Mechanisms of muscle growth and atrophy in mammals and Drosophila. *Developmental Dynamics*, **2014**, 243, 201-15	2.9	90
107	Interactions of PAN's C-termini with archaeal 20S proteasome and implications for the eukaryotic proteasome-ATPase interactions. *EMBO Journal*, **2010**, 29, 692-702	13	90

106	Ca2+-free calmodulin and calmodulin damaged by in vitro aging are selectively degraded by 26 S proteasomes without ubiquitination. *Journal of Biological Chemistry*, **2000**, 275, 20295-301	5.4	89
105	Structural characterization of the interaction of Ubp6 with the 26S proteasome. *Proceedings of the National Academy of Sciences of the United States of America*, **2015**, 112, 8626-31	11.5	86
104	The ATP costs and time required to degrade ubiquitinated proteins by the 26 S proteasome. *Journal of Biological Chemistry*, **2013**, 288, 29215-22	5.4	86
103	Misfolded PrP impairs the UPS by interaction with the 20S proteasome and inhibition of substrate entry. *EMBO Journal*, **2011**, 30, 3065-77	13	86
102	The active ClpP protease from M. tuberculosis is a complex composed of a heptameric ClpP1 and a ClpP2 ring. *EMBO Journal*, **2012**, 31, 1529-41	13	83
101	Bacterial proteolytic complexes as therapeutic targets. *Nature Reviews Drug Discovery*, **2012**, 11, 777-89	64.1	82
100	Characterization of the Brain 26S Proteasome and its Interacting Proteins. *Frontiers in Molecular Neuroscience*, **2010**, 3,	6.1	82
99	Ubiquitinated proteins activate the proteasomal ATPases by binding to Usp14 or Uch37 homologs. *Journal of Biological Chemistry*, **2013**, 288, 7781-7790	5.4	81
98	Immuno- and constitutive proteasomes do not differ in their abilities to degrade ubiquitinated proteins. *Cell*, **2013**, 152, 1184-94	56.2	80
97	Tripeptidyl peptidase II is the major peptidase needed to trim long antigenic precursors, but is not required for most MHC class I antigen presentation. *Journal of Immunology*, **2006**, 177, 1434-43	5.3	80
96	The unfolding of substrates and ubiquitin-independent protein degradation by proteasomes. *Biochimie*, **2001**, 83, 311-8	4.6	80
95	Newly synthesized proteins are degraded by an ATP-stimulated proteolytic process in isolated pea chloroplasts. *FEBS Letters*, **1984**, 166, 253-257	3.8	80
94	S5a promotes protein degradation by blocking synthesis of nondegradable forked ubiquitin chains. *EMBO Journal*, **2009**, 28, 1867-77	13	70
93	Re-examining class-I presentation and the DRiP hypothesis. *Trends in Immunology*, **2014**, 35, 144-52	14.4	68
92	The membrane-associated inhibitor of apoptosis protein, BRUCE/Apollon, antagonizes both the precursor and mature forms of Smac and caspase-9. *Journal of Biological Chemistry*, **2005**, 280, 174-82	5.4	68
91	A conserved F box regulatory complex controls proteasome activity in Drosophila. *Cell*, **2011**, 145, 371-82	56.2	67
90	The internal sequence of the peptide-substrate determines its N-terminus trimming by ERAP1. *PLoS ONE*, **2008**, 3, e3658	3.7	67
89	Gamma-interferon causes a selective induction of the lysosomal proteases, cathepsins B and L, in macrophages. *FEBS Letters*, **1995**, 363, 85-9	3.8	67

88	c-IAP1 cooperates with Myc by acting as a ubiquitin ligase for Mad1. *Molecular Cell*, **2007**, 28, 914-22	17.6	66
87	Regulating protein breakdown through proteasome phosphorylation. *Biochemical Journal*, **2017**, 474, 3355-3371	3.8	64
86	Getting to first base in proteasome assembly. *Cell*, **2009**, 138, 25-8	56.2	64
85	Blm10 protein promotes proteasomal substrate turnover by an active gating mechanism. *Journal of Biological Chemistry*, **2011**, 286, 42830-9	5.4	61
84	Trim32 reduces PI3K-Akt-FoxO signaling in muscle atrophy by promoting plakoglobin-PI3K dissociation. *Journal of Cell Biology*, **2014**, 204, 747-58	7.3	57
83	The p97/VCP ATPase is critical in muscle atrophy and the accelerated degradation of muscle proteins. *EMBO Journal*, **2012**, 31, 3334-50	13	57
82	26S Proteasomes are rapidly activated by diverse hormones and physiological states that raise cAMP and cause Rpn6 phosphorylation. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**, 116, 4228-4237	11.5	56
81	Inhibition of the Proteasome □ Site Sensitizes Triple-Negative Breast Cancer Cells to □ Inhibitors and Suppresses Nrf1 Activation. *Cell Chemical Biology*, **2017**, 24, 218-230	8.2	55
80	Control of proteasomal proteolysis by mTOR. *Nature*, **2016**, 529, E1-2	50.4	53
79	Acyldepsipeptide antibiotics kill mycobacteria by preventing the physiological functions of the ClpP1P2 protease. *Molecular Microbiology*, **2016**, 101, 194-209	4.1	51
78	Puromycin-sensitive aminopeptidase protects against aggregation-prone proteins via autophagy. *Human Molecular Genetics*, **2010**, 19, 4573-86	5.6	51
77	Rapid induction of p62 and GABARAPL1 upon proteasome inhibition promotes survival before autophagy activation. *Journal of Cell Biology*, **2018**, 217, 1757-1776	7.3	48
76	The heat-shock protein HslVU from Escherichia coli is a protein-activated ATPase as well as an ATP-dependent proteinase. *FEBS Journal*, **1997**, 247, 1143-50		48
75	The direction of protein entry into the proteasome determines the variety of products and depends on the force needed to unfold its two termini. *Molecular Cell*, **2012**, 48, 601-11	17.6	47
74	Enhanced ubiquitin-dependent degradation by Nedd4 protects against □synuclein accumulation and toxicity in animal models of Parkinson's disease. *Neurobiology of Disease*, **2014**, 64, 79-87	7.5	46
73	Compromising the 19S proteasome complex protects cells from reduced flux through the proteasome. *ELife*, **2015**, 4,	8.9	46
72	The deubiquitinating enzyme Usp14 allosterically inhibits multiple proteasomal activities and ubiquitin-independent proteolysis. *Journal of Biological Chemistry*, **2017**, 292, 9830-9839	5.4	45
71	The molecular chaperone DnaJ is required for the degradation of a soluble abnormal protein in Escherichia coli. *Journal of Biological Chemistry*, **2001**, 276, 3920-8	5.4	44

70	Studies on the relationship between the degradative rates of proteins in vivo and their isoelectric points. *Biochemical Journal*, **1979**, 178, 305-12		42
69	Effects of chymostatin and other proteinase inhibitors on protein breakdown and proteolytic activities in muscle. *Biochemical Journal*, **1980**, 188, 213-20	3.8	41
68	Coordinate regulation of autophagy and the ubiquitin proteasome system by MTOR. *Autophagy*, **2016**, 12, 1967-1970	10.2	41
67	ATP-stimulated endoprotease is associated with the cell membrane of E. coli. *Nature*, **1981**, 290, 419-21	50.4	40
66	The ubiquitin-interacting motif protein, S5a, is ubiquitinated by all types of ubiquitin ligases by a mechanism different from typical substrate recognition. *Journal of Biological Chemistry*, **2009**, 284, 12622-32	5.4	39
65	ATP-induced structural transitions in PAN, the proteasome-regulatory ATPase complex in Archaea. *Journal of Biological Chemistry*, **2007**, 282, 22921-9	5.4	39
64	The proteasome subunit, C2, contains an important site for binding of the PA28 (11S) activator. *FEBS Journal*, **1996**, 236, 510-6		38
63	Proteolytic activity of the ATP-dependent protease HslVU can be uncoupled from ATP hydrolysis. *Journal of Biological Chemistry*, **1997**, 272, 21364-72	5.4	37
62	Cleavage Specificity of Mycobacterium tuberculosis ClpP1P2 Protease and Identification of Novel Peptide Substrates and Boronate Inhibitors with Anti-bacterial Activity. *Journal of Biological Chemistry*, **2015**, 290, 11008-20	5.4	35
61	Nobel committee tags ubiquitin for distinction. *Neuron*, **2005**, 45, 339-44	13.9	35
60	Rapid degradation of an abnormal protein in Escherichia coli proceeds through repeated cycles of association with GroEL. *Journal of Biological Chemistry*, **1999**, 274, 37743-9	5.4	35
59	Comparison of the control and pathways for degradation of the acetylcholine receptor and average protein in cultured muscle cells. *Journal of Cellular Physiology*, **1981**, 107, 185-94	7	34
58	PDE1 inhibition facilitates proteasomal degradation of misfolded proteins and protects against cardiac proteinopathy. *Science Advances*, **2019**, 5, eaaw5870	14.3	32
57	Muscle Wasting in Fasting Requires Activation of NF-B and Inhibition of AKT/Mechanistic Target of Rapamycin (mTOR) by the Protein Acetylase, GCN5. *Journal of Biological Chemistry*, **2015**, 290, 30269-79	5.4	31
56	The role of increased proteolysis in the atrophy and arrest of proliferation in serum-deprived fibroblasts. *Journal of Cellular Physiology*, **1984**, 121, 189-98	7	31
55	Structure and Functional Properties of the Active Form of the Proteolytic Complex, ClpP1P2, from Mycobacterium tuberculosis. *Journal of Biological Chemistry*, **2016**, 291, 7465-76	5.4	31
54	UBL domain of Usp14 and other proteins stimulates proteasome activities and protein degradation in cells. *Proceedings of the National Academy of Sciences of the United States of America*, **2018**, 115, E11642-E11650	11.5	29
53	Proteins containing ubiquitin-like (Ubl) domains not only bind to 26S proteasomes but also induce their activation. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 4664-4674	11.5	27

52	Different ratios in 20 S proteasomes and regulatory subunit complexes in two isoforms of the 26 S proteasome purified from rabbit skeletal muscle. *FEBS Letters*, **1993**, 335, 207-12	3.8	27
51	An allosteric switch regulates ClpP1P2 protease function as established by cryo-EM and methyl-TROSY NMR. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 5895-5906	11.5	25
50	A new model of cancer cachexia: contribution of the ubiquitin-proteasome pathway. *American Journal of Physiology - Endocrinology and Metabolism*, **1999**, 277, E332-41	6	25
49	SIP/CacyBP promotes autophagy by regulating levels of BRUCE/Apollon, which stimulates LC3-I degradation. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**, 116, 13404-13413	11.5	24
48	cGMP via PKG activates 26S proteasomes and enhances degradation of proteins, including ones that cause neurodegenerative diseases. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 14220-14230	11.5	24
47	Affinity purification of mammalian 26S proteasomes using an ubiquitin-like domain. *Methods in Molecular Biology*, **2012**, 832, 423-32	1.4	24
46	Protein degradation by the proteasome and dissection of its in vivo importance with synthetic inhibitors. *Molecular Biology Reports*, **1997**, 24, 69-75	2.8	23
45	Preparation of hybrid (19S-20S-PA28) proteasome complexes and analysis of peptides generated during protein degradation. *Methods in Enzymology*, **2005**, 398, 336-52	1.7	23
44	The Selective Degradation of Abnormal Proteins in Bacteria **1986**, 287-314		23
43	Cathepsins L and Z are critical in degrading polyglutamine-containing proteins within lysosomes. *Journal of Biological Chemistry*, **2012**, 287, 17471-17482	5.4	22
42	Role of ATP hydrolysis in the degradation of proteins by protease La from Escherichia coli. *Journal of Cellular Biochemistry*, **1986**, 32, 187-91	4.7	22
41	Effects of protease inhibitors on protein breakdown and enzyme induction in starving Escherichia coli. *Nature: New Biology*, **1971**, 234, 51-2		22
40	Structural properties of rat serum proteins which correlate with their degradative rates in vivo. *Nature*, **1976**, 262, 514-6	50.4	21
39	Reply to Vangala et al.: Complete inhibition of the proteasome reduces new proteasome production by causing Nrf1 aggregation. *Current Biology*, **2016**, 26, R836-R837	6.3	21
38	ZFAND5/ZNF216 is an activator of the 26S proteasome that stimulates overall protein degradation. *Proceedings of the National Academy of Sciences of the United States of America*, **2018**, 115, E9550-E9559	11.5	21
37	The antibiotic cyclomarin blocks arginine-phosphate-induced millisecond dynamics in the N-terminal domain of ClpC1 from. *Journal of Biological Chemistry*, **2018**, 293, 8379-8393	5.4	20
36	Keeping proteasomes under control--a role for phosphorylation in the nucleus. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 18573-4	11.5	19
35	ATPase and ubiquitin-binding proteins of the yeast proteasome. *Molecular Biology Reports*, **1997**, 24, 17-26	2.8	19

34	On prions, proteasomes, and mad cows. *New England Journal of Medicine*, **2007**, 357, 1150-2	59.2	19
33	Protein Breakdown and the Heat-Shock Response **1988**, 207-238		19
32	Impairment of protein degradation and proteasome function in hereditary neuropathies. *Glia*, **2018**, 66, 379-395	9	18
31	Inhibiting ubiquitination causes an accumulation of SUMOylated newly synthesized nuclear proteins at PML bodies. *Journal of Biological Chemistry*, **2019**, 294, 15218-15234	5.4	18
30	Mitochondrial ATP-dependent protease from rat liver and yeast. *Methods in Enzymology*, **1994**, 244, 376-83	1.7	16
29	Measuring the Overall Rate of Protein Breakdown in Cells and the Contributions of the Ubiquitin-Proteasome and Autophagy-Lysosomal Pathways. *Methods in Molecular Biology*, **2018**, 1844, 261-276	1.4	16
28	The ATP-dependent breakdown of proteins in mammalian mitochondria. *Biochemical Society Transactions*, **1985**, 13, 290-3	5.1	15
27	The requirements of yeast Hsp70 of SSA family for the ubiquitin-dependent degradation of short-lived and abnormal proteins. *Biochemical and Biophysical Research Communications*, **2016**, 475, 100-6	3.4	12
26	Thiostrepton interacts covalently with Rpt subunits of the 19S proteasome and proteasome substrates. *Journal of Cellular and Molecular Medicine*, **2015**, 19, 2181-92	5.6	11
25	Hsp104 is essential for the selective degradation in yeast of polyglutamine expanded ataxin-1 but not most misfolded proteins generally. *Biochemical and Biophysical Research Communications*, **2010**, 391, 1056-61	3.4	10
24	Exploring the Regulation of Proteasome Function by Subunit Phosphorylation. *Methods in Molecular Biology*, **2018**, 1844, 309-319	1.4	10
23	The apparent stimulation of proteolysis by adenosine triphosphate in tissue homogenates. *Biochemical Journal*, **1973**, 134, 829-32		8
22	Development of high throughput screening methods for inhibitors of ClpC1P1P2 from Mycobacteria tuberculosis. *Analytical Biochemistry*, **2019**, 567, 30-37	3.1	7
21	Blocking Cancer Growth with Less POMP or Proteasomes. *Molecular Cell*, **2015**, 59, 143-5	17.6	5
20	Bortezomib Scientific Origins and Its Tortuous Path to the Clinic **2011**, 1-27		4
19	Multiple myeloma cells are exceptionally sensitive to heat shock, which overwhelms their proteostasis network and induces apoptosis. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 21588-21597	11.5	4
18	Methods to Rapidly Prepare Mammalian 26S Proteasomes for Biochemical Analysis. *Methods in Molecular Biology*, **2018**, 1844, 277-288	1.4	4
17	Studies of the ATP dependence of protein degradation in cells and cell extracts. *Novartis Foundation Symposium*, **1979**, 227-51		4

16	S5a/Rpn10, a UIM-protein, as a universal substrate for ubiquitination. *Methods in Molecular Biology*, **2012**, 832, 653-60	1.4	3
15	Formation of nondegradable forked ubiquitin conjugates by ring-finger ligases and its prevention by S5a. *Methods in Molecular Biology*, **2012**, 832, 639-52	1.4	3
14	Mechanisms That Activate 26S Proteasomes and Enhance Protein Degradation. *Biomolecules*, **2021**, 11,	5.9	3
13	Measurement of the Multiple Activities of 26S Proteasomes. *Methods in Molecular Biology*, **2018**, 1844, 289-308	1.4	3
12	Regulation of protein degradation in skeletal muscle. *Biochemical Society Transactions*, **1980**, 8, 497	5.1	2
11	Duo-activation of PKA and PKG by PDE1 inhibition facilitates proteasomal degradation of misfolded proteins and protects against proteinopathy		2
10	ClpX Is Essential and Activated by Single-Strand DNA Binding Protein in Mycobacteria. *Journal of Bacteriology*, **2021**, 203,	3.5	2
9	Protein Degradation and Turnover **2006**,		1
8	Lon-A Peptidase, Endopeptidase La **2013**, 3527-3533		1
7	Mammalian Ddi2 is a shuttling factor containing a retroviral protease domain that influences binding of ubiquitylated proteins and proteasomal degradation.. *Journal of Biological Chemistry*, **2022**, 101875	5.4	0
6	What the Archaeal PAN-Proteasome Complex and Bacterial ATP-Dependent Proteases Can Teach Us About the 26S Proteasome **2008**, 215-247		
5	Protein misfolding and cellular defense mechanisms in neurodegenerative diseases **2005**, 108-130		
4	FUNCTION OF THE PROTEASOME IN PROTEIN TURNOVER AND ANTIGEN PRESENTATION. *Biochemical Society Transactions*, **1996**, 24, 628S-628S	5.1	
3	Protein Degradation **2004**, 484-492		
2	Functional Consequences of Nucleotide Binding to the Proteasomal ATPases. *FASEB Journal*, **2010**, 24, lb84	0.9	
1	Protein Turnover | Intracellular Protein Degradation **2021**, 212-224		