# Arne Holmgren

List of Publications by Year
in descending order

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|---|---|---|---|
| 116 papers | 17,872 citations | 26567 56 h-index | 22764 112 g-index |
| 119 all docs | 119 docs citations | 119 times ranked | 17932 citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Physiological functions of thioredoxin and thioredoxin reductase. FEBS Journal, 2000, 267, 6102-6109. | 0.2 | 2,091 |
| 2 | The thioredoxin antioxidant system. Free Radical Biology and Medicine, 2014, 66, 75-87. | 1.3 | 1,476 |
| 3 | From Selenium to Selenoproteins: Synthesis, Identity, and Their Role in Human Health. Antioxidants and Redox Signaling, 2007, 9, 775-806. | 2.5 | 1,089 |
| 4 | [21] Thioredoxin and thioredoxin reductase. Methods in Enzymology, 1995, 252, 199-208. | 0.4 | 812 |
| 5 | Unraveling the Biological Roles of Reactive Oxygen Species. Cell Metabolism, 2011, 13, 361-366. | 7.2 | 661 |
| 6 | Thioredoxin and Related Moleculesâ€“From Biology to Health and Disease. Antioxidants and Redox Signaling, 2007, 9, 25-47. | 2.5 | 629 |
| 7 | Selenoproteins. Journal of Biological Chemistry, 2009, 284, 723-727. | 1.6 | 554 |
| 8 | Glutaredoxin systems. Biochimica Et Biophysica Acta - General Subjects, 2008, 1780, 1304-1317. | 1.1 | 523 |
| 9 | Thioredoxin and thioredoxin reductase: Current research with special reference to human disease. Biochemical and Biophysical Research Communications, 2010, 396, 120-124. | 1.0 | 484 |
| 10 | The thioredoxin system in cancer. Seminars in Cancer Biology, 2006, 16, 420-426. | 4.3 | 471 |
| 11 | Thioredoxin Reductase Is Irreversibly Modified by Curcumin. Journal of Biological Chemistry, 2005, 280, 25284-25290. | 1.6 | 449 |
| 12 | Targeting thioredoxin reductase is a basis for cancer therapy by arsenic trioxide. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 12288-12293. | 3.3 | 444 |
| 13 | Antioxidant Function of Thioredoxin and Glutaredoxin Systems. Antioxidants and Redox Signaling, 2000, 2, 811-820. | 2.5 | 438 |
| 14 | Inhibition of the Human Thioredoxin System. Journal of Biological Chemistry, 2008, 283, 11913-11923. | 1.6 | 406 |
| 15 | Essential Role of Selenium in the Catalytic Activities of Mammalian Thioredoxin Reductase Revealed by Characterization of Recombinant Enzymes with Selenocysteine Mutations. Journal of Biological Chemistry, 2000, 275, 18121-18128. | 1.6 | 344 |
| 16 | Inhibition of Mammalian Thioredoxin Reductase by Some Flavonoids: Implications for Myricetin and Quercetin Anticancer Activity. Cancer Research, 2006, 66, 4410-4418. | 0.4 | 286 |
| 17 | Cloning and Expression of a Novel Human Glutaredoxin (Grx2) with Mitochondrial and Nuclear Isoforms. Journal of Biological Chemistry, 2001, 276, 26269-26275. | 1.6 | 284 |
| 18 | Human Mitochondrial Glutaredoxin Reduces S-Glutathionylated Proteins with High Affinity Accepting Electrons from Either Glutathione or Thioredoxin Reductase. Journal of Biological Chemistry, 2004, 279, 7537-7543. | 1.6 | 261 |

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|---|---|---|---|
| 19 | Characterization of human glutaredoxin 2 as iron-sulfur protein: A possible role as redox sensor. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 8168-8173. | 3.3 | 260 |
| 20 | Thioredoxin System in Cell Death Progression. Antioxidants and Redox Signaling, 2012, 17, 1738-1747. | 2.5 | 236 |
| 21 | Redox Signaling Mediated by Thioredoxin and Glutathione Systems in the Central Nervous System. Antioxidants and Redox Signaling, 2017, 27, 989-1010. | 2.5 | 233 |
| 22 | Ebselen: A substrate for human thioredoxin reductase strongly stimulating its hydroperoxide reductase activity and a superfast thioredoxin oxidant. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 8579-8584. | 3.3 | 221 |
| 23 | Selenite is a substrate for calf thymus thioredoxin reductase and thioredoxin and elicits a large non-stoichiometric oxidation of NADPH in the presence of oxygen. FEBS Journal, 1992, 207, 435-439. | 0.2 | 211 |
| 24 | Selenoprotein Gene Nomenclature. Journal of Biological Chemistry, 2016, 291, 24036-24040. | 1.6 | 207 |
| 25 | Glutathione and Glutaredoxin Act as a Backup of Human Thioredoxin Reductase 1 to Reduce Thioredoxin 1 Preventing Cell Death by Aurothioglucose. Journal of Biological Chemistry, 2012, 287, 38210-38219. | 1.6 | 189 |
| 26 | A Novel Antioxidant Mechanism of Ebselen Involving Ebselen Diselenide, a Substrate of Mammalian Thioredoxin and Thioredoxin Reductase. Journal of Biological Chemistry, 2002, 277, 39456-39462. | 1.6 | 166 |
| 27 | Regulation of the Catalytic Activity and Structure of Human Thioredoxin 1 via Oxidation and S-Nitrosylation of Cysteine Residues. Journal of Biological Chemistry, 2008, 283, 21890-21898. | 1.6 | 159 |
| 28 | Protein Folding Drives Disulfide Formation. Cell, 2012, 151, 794-806. | 13.5 | 158 |
| 29 | Mutagenesis of structural half-cystine residues in human thioredoxin and effects on the regulation of activity by selenodiglutathione. Biochemistry, 1993, 32, 9701-9708. | 1.2 | 154 |
| 30 | Inhibition of bacterial thioredoxin reductase: an antibiotic mechanism targeting bacteria lacking glutathione. FASEB Journal, 2013, 27, 1394-1403. | 0.2 | 141 |
| 31 | Molecular Mechanisms of Thioredoxin and Glutaredoxin as Hydrogen Donors for Mammalian S Phase Ribonucleotide Reductase. Journal of Biological Chemistry, 2009, 284, 8233-8240. | 1.6 | 126 |
| 32 | The crystal structure of human GLRX5: ironâ€“sulfur cluster co-ordination, tetrameric assembly and monomer activity. Biochemical Journal, 2011, 433, 303-311. | 1.7 | 115 |
| 33 | Up-regulation of thioredoxin and thioredoxin reductase in human malignant pleural mesothelioma. International Journal of Cancer, 2001, 95, 198-204. | 2.3 | 112 |
| 34 | NMR structure of oxidized Escherichia coli glutaredoxin: Comparison with reduced E. coli glutaredoxin and functionally related proteins. Protein Science, 1992, 1, 310-321. | 3.1 | 111 |
| 35 | The Thioredoxin Superfamily in Oxidative Protein Folding. Antioxidants and Redox Signaling, 2014, 21, 457-470. | 2.5 | 111 |
| 36 | Thioredoxin and Glutaredoxin Isoforms. Methods in Enzymology, 2002, 347, 286-296. | 0.4 | 110 |

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| 37 | Effects of selenite and chelating agents on mammalian thioredoxin reductase inhibited by mercury: implications for treatment of mercury poisoning. FASEB Journal, 2011, 25, 370-381. | 0.2 | 104 |
| 38 | How Does Ironâ€“Sulfur Cluster Coordination Regulate the Activity of Human Glutaredoxin 2?. Antioxidants and Redox Signaling, 2007, 9, 151-157. | 2.5 | 101 |
| 39 | Selenocysteine in mammalian thioredoxin reductase and application of ebselen as a therapeutic. Free Radical Biology and Medicine, 2018, 127, 238-247. | 1.3 | 98 |
| 40 | The use of thiols by ribonucleotide reductase. Free Radical Biology and Medicine, 2010, 49, 1617-1628. | 1.3 | 94 |
| 41 | Metabolism of selenium compounds catalyzed by the mammalian selenoprotein thioredoxin reductase. Biochimica Et Biophysica Acta - General Subjects, 2009, 1790, 1513-1519. | 1.1 | 92 |
| 42 | AP-1 DNA-binding activity is inhibited by selenite and selenodiglutathione. FEBS Letters, 1995, 368, 59-63. | 1.3 | 87 |
| 43 | Mitochondrial thioredoxin reductase inhibition, selenium status, and Nrf-2 activation are determinant factors modulating the toxicity of mercury compounds. Free Radical Biology and Medicine, 2014, 73, 95-105. | 1.3 | 85 |
| 44 | Thioredoxin 1 Is Inactivated Due to Oxidation Induced by Peroxiredoxin under Oxidative Stress and Reactivated by the Glutaredoxin System. Journal of Biological Chemistry, 2013, 288, 32241-32247. | 1.6 | 83 |
| 45 | Modulation of thiol-dependent redox system by metal ionsviathioredoxin and glutaredoxin systems. Metallomics, 2018, 10, 218-228. | 1.0 | 83 |
| 46 | Inhibition of the thioredoxin system in the brain and liver of zebra-seabreams exposed to waterborne methylmercury. Toxicology and Applied Pharmacology, 2011, 251, 95-103. | 1.3 | 81 |
| 47 | Two resident ER-proteins, CaBP1 and CaBP2, with thioredoxin domains, are substrates for thioredoxin reductase: comparison with protein disulfide isomerase. FEBS Letters, 1995, 357, 305-308. | 1.3 | 77 |
| 48 | Thioredoxin and glutaredoxin-mediated redox regulation of ribonucleotide reductase. World Journal of Biological Chemistry, 2014, 5, 68. | 1.7 | 77 |
| 49 | Glutathione Fine-Tunes the Innate Immune Response toward Antiviral Pathways in a Macrophage Cell Line Independently of Its Antioxidant Properties. Frontiers in Immunology, 2017, 8, 1239. | 2.2 | 76 |
| 50 | Thioredoxin reductase and glutathione synthesis is upregulated byt-butylhydroquinone in cortical astrocytes but not in cortical neurons. Glia, 2000, 31, 241-248. | 2.5 | 72 |
| 51 | Impaired cross-talk between the thioredoxin and glutathione systems is related to ASK-1 mediated apoptosis in neuronal cells exposed to mercury. Redox Biology, 2017, 13, 278-287. | 3.9 | 72 |
| 52 | Purification from Placenta, Amino Acid Sequence, Structure Comparisons and cDNA Cloning of Human Glutaredoxin. FEBS Journal, 1995, 227, 27-34. | 0.2 | 71 |
| 53 | Synergistic antibacterial effect of silver and ebselen against multidrugâ€resistant Gramâ€negative bacterial infections. EMBO Molecular Medicine, 2017, 9, 1165-1178. | 3.3 | 65 |
| 54 | Synergistic antibacterial activity of silver with antibiotics correlating with the upregulation of the ROS production. Scientific Reports, 2018, 8, 11131. | 1.6 | 65 |

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| 55 | Direct NMR observation of the Cys-14 thiol proton of reducedEscherichia coliglutaredoxin-3 supports the presence of an active site thiol-thiolate hydrogen bond. FEBS Letters, 1999, 449, 196-200. | 1.3 | 63 |
| 56 | The role of the thioredoxin/thioredoxin reductase system in the metabolic syndrome: towards a possible prognostic marker?. Cellular and Molecular Life Sciences, 2018, 75, 1567-1586. | 2.4 | 63 |
| 57 | Protein Levels of Escherichia coli Thioredoxins and Glutaredoxins and Their Relation to Null Mutants, Growth Phase, and Function. Journal of Biological Chemistry, 2002, 277, 18561-18567. | 1.6 | 59 |
| 58 | Ebselen and analogs as inhibitors of Bacillus anthracis thioredoxin reductase and bactericidal antibacterials targeting Bacillus species, Staphylococcus aureus and Mycobacterium tuberculosis. Biochimica Et Biophysica Acta - General Subjects, 2016, 1860, 1265-1271. | 1.1 | 58 |
| 59 | NADPH-dependent and -independent disulfide reductase systems. Free Radical Biology and Medicine, 2018, 127, 248-261. | 1.3 | 58 |
| 60 | Thioredoxin Blood Level Increases After Severe Burn Injury. Antioxidants and Redox Signaling, 2000, 2, 707-716. | 2.5 | 57 |
| 61 | A Conservedcis-Proline Precludes Metal Binding by the Active Site Thiolates in Members of the Thioredoxin Family of Proteinsâ€. Biochemistry, 2007, 46, 6903-6910. | 1.2 | 57 |
| 62 | Hepatocyte Hyperproliferation upon Liver-Specific Co-disruption of Thioredoxin-1, Thioredoxin Reductase-1, and Glutathione Reductase. Cell Reports, 2017, 19, 2771-2781. | 2.9 | 57 |
| 63 | Thioredoxin alters the matrix metalloproteinase/tissue inhibitors of metalloproteinase balance and stimulates human SK-N-SH neuroblastoma cell invasion. FEBS Journal, 2001, 268, 405-413. | 0.2 | 55 |
| 64 | Catalysis of Thiol/Disulfide Exchange. Journal of Biological Chemistry, 2005, 280, 21099-21106. | 1.6 | 55 |
| 65 | Inhibition of the glutaredoxin and thioredoxin systems and ribonucleotide reductase by mutant p53-targeting compound APR-246. Scientific Reports, 2018, 8, 12671. | 1.6 | 53 |
| 66 | Nitric Oxide Protects against Infection-Induced Neuroinflammation by Preserving the Stability of the Blood-Brain Barrier. PLoS Pathogens, 2016, 12, e1005442. | 2.1 | 53 |
| 67 | Unique gene organization of thioredoxin and thioredoxin reductase in Mycobacterium leprae. Molecular Microbiology, 1995, 16, 921-929. | 1.2 | 48 |
| 68 | Ebsulfur Is a Benzisothiazolone Cytocidal Inhibitor Targeting the Trypanothione Reductase of Trypanosoma brucei. Journal of Biological Chemistry, 2013, 288, 27456-27468. | 1.6 | 46 |
| 69 | Zebrafish heart development is regulated via glutaredoxin 2 dependent migration and survival of neural crest cells. Redox Biology, 2014, 2, 673-678. | 3.9 | 43 |
| 70 | Activity assays of mammalian thioredoxin and thioredoxin reductase: Fluorescent disulfide substrates, mechanisms, and use with tissue samples. Analytical Biochemistry, 2014, 449, 139-146. | 1.1 | 43 |
| 71 | Auranofin andN-heterocyclic carbene gold-analogs are potent inhibitors of the bacteriaHelicobacter pylori. FEMS Microbiology Letters, 2016, 363, fnw148. | 0.7 | 43 |
| 72 | The combination of ascorbate and menadione causes cancer cell death by oxidative stress and replicative stress. Free Radical Biology and Medicine, 2019, 134, 350-358. | 1.3 | 42 |

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| 73 | MGST1, a GSH transferase/peroxidase essential for development and hematopoietic stem cell differentiation. Redox Biology, 2018, 17, 171-179. | 3.9 | 37 |
| 74 | Thioredoxin-dependent regulation of AIF-mediated DNA damage. Free Radical Biology and Medicine, 2015, 87, 125-136. | 1.3 | 35 |
| 75 | Ironâ€sulfur glutaredoxin 2 protects oligodendrocytes against damage induced by nitric oxide release from activated microglia. Glia, 2017, 65, 1521-1534. | 2.5 | 33 |
| 76 | Topical Therapeutic Efficacy of Ebselen Against Multidrug-Resistant Staphylococcus aureus LT-1 Targeting Thioredoxin Reductase. Frontiers in Microbiology, 2019, 10, 3016. | 1.5 | 33 |
| 77 | Age-associated insolubility of parkin in human midbrain is linked to redox balance and sequestration of reactive dopamine metabolites. Acta Neuropathologica, 2021, 141, 725-754. | 3.9 | 32 |
| 78 | Toxicological effects of thiomersal and ethylmercury: Inhibition of the thioredoxin system and NADP+-dependent dehydrogenases of the pentose phosphate pathway. Toxicology and Applied Pharmacology, 2015, 286, 216-223. | 1.3 | 30 |
| 79 | Redox regulation by thioredoxin and thioredoxin reductase. BioFactors, 2000, 11, 63-64. | 2.6 | 28 |
| 80 | Streptomyces spp. contain class Ia and class II ribonucleotide reductases: expression analysis of the genes in vegetative growth The GenBank/EMBL/DDBJ accession numbers for the sequences determined in this paper are AJ224870, AJ276618, AJ277778, AJ295338 and AJ295339.. Microbiology (United Kingdom), 2002, 148, 391-404. | 0.7 | 28 |
| 81 | Oxidation of structural cysteine residues in thioredoxin 1 by aromatic arsenicals enhances cancer cell cytotoxicity caused by the inhibition of thioredoxin reductase 1. Free Radical Biology and Medicine, 2015, 89, 192-200. | 1.3 | 27 |
| 82 | Reactivity of glutaredoxins 1, 2 and 3 fromEscherichia coliand protein disulfide isomerase towards glutathionyl-mixed disulfides in ribonuclease A. FEBS Letters, 1999, 443, 85-88. | 1.3 | 26 |
| 83 | Selenite in cancer therapy: A commentary on â€œSelenite induces apoptosis in sarcomatoid malignant mesothelioma cells through oxidative stressâ€• Free Radical Biology and Medicine, 2006, 41, 862-865. | 1.3 | 25 |
| 84 | SNO Removal. Science, 2008, 320, 1019-1020. | 6.0 | 25 |
| 85 | The production of reactive oxygen species enhanced with the reduction of menadione by active thioredoxin reductase. Metallomics, 2019, 11, 1490-1497. | 1.0 | 25 |
| 86 | Characterization of mammalian glutaredoxin isoforms as Sâ€denitrosylases. FEBS Letters, 2019, 593, 1799-1806. | 1.3 | 25 |
| 87 | EPR Investigation of the Active Site of Recombinant Human 5-Lipoxygenase:Â Inhibition by Selenideâ€. Biochemistry, 2001, 40, 6371-6378. | 1.2 | 24 |
| 88 | Thioredoxin Messenger Ribonucleic Acid is Regulated by Estradiol in the Rat Uterus1. Biology of Reproduction, 1997, 57, 1056-1059. | 1.2 | 22 |
| 89 | Glutaredoxin mediated redox effects of coenzyme Q10 treatment in type 1 and type 2 diabetes patients. BBA Clinical, 2015, 4, 14-20. | 4.1 | 21 |
| 90 | Cellular Redox Systems Impact the Aggregation of Cu,Zn Superoxide Dismutase Linked to Familial Amyotrophic Lateral Sclerosis. Journal of Biological Chemistry, 2016, 291, 17197-17208. | 1.6 | 20 |

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| 91 | Targeting Bacterial Antioxidant Systems for Antibiotics Development. Current Medicinal Chemistry, 2020, 27, 1922-1939. | 1.2 | 20 |
| 92 | Bacterial thioredoxin and thioredoxin reductase as mediators for epigallocatechin 3â€gallateâ€induced antimicrobial action. FEBS Journal, 2016, 283, 446-458. | 2.2 | 19 |
| 93 | Glutathione-glutaredoxin is an efficient electron donor system for mammalian p53R2â€“R1-dependent ribonucleotide reductase. Journal of Biological Chemistry, 2019, 294, 12708-12716. | 1.6 | 19 |
| 94 | Redox regulation of protein kinase C by selenometabolites and selenoprotein thioredoxin reductase limits cancer prevention by selenium. Free Radical Biology and Medicine, 2018, 127, 55-61. | 1.3 | 18 |
| 95 | Determination of glutaredoxin enzyme activity and protein S-glutathionylation using fluorescent eosin-glutathione. Analytical Biochemistry, 2016, 499, 24-33. | 1.1 | 16 |
| 96 | Inhibition of thioredoxin reductase 1 correlates with platinum-based chemotherapeutic induced tissue injury. Biochemical Pharmacology, 2020, 175, 113873. | 2.0 | 16 |
| 97 | NMR characterization of a single-cysteine mutant of Escherichia coli thioredoxin and a covalent thioredoxin-peptide complex. FEBS Journal, 1998, 257, 299-308. | 0.2 | 14 |
| 98 | Selenium Status in Diet Affects Acetaminophen-Induced Hepatotoxicity via Interruption of Redox Environment. Antioxidants and Redox Signaling, 2021, 34, 1355-1367. | 2.5 | 13 |
| 99 | Mitochondrial depletion of glutaredoxin 2 induces metabolic dysfunction-associated fatty liver disease in mice. Redox Biology, 2022, 51, 102277. | 3.9 | 13 |
| 100 | Inhibition of the thioredoxin system by PX-12 (1-methylpropyl 2-imidazolyl disulfide) impedes HIV-1 infection in TZM-bl cells. Scientific Reports, 2019, 9, 5656. | 1.6 | 9 |
| 101 | Imbalance in Protein Thiol Redox Regulation and Cancer-Preventive Efficacy of Selenium. , 2016, 2, 272-289. | | 9 |
| 102 | A genome-wide survey of human thioredoxin and glutaredoxin family pseudogenes. Human Genetics, 2001, 109, 429-439. | 1.8 | 7 |
| 103 | Biosynthetic 15N and 13C isotope labelling of glutathione in the mixed disulfide with Escherichia coli glutaredoxin documented by sequence-specific NMR assignments. FEBS Journal, 1993, 218, 327-334. | 0.2 | 6 |
| 104 | Inhibition of Thioredoxin Reductase by Triosmium Carbonyl Clusters. Chemical Research in Toxicology, 2020, 33, 2441-2445. | 1.7 | 5 |
| 105 | Metallocenyl derivatives of ebselen are selective and competitive inhibitors of thioredoxin reductase. Journal of Organometallic Chemistry, 2021, 943, 121822. | 0.8 | 5 |
| 106 | A substitution in the glutathione reductase lowers electron leakage and inflammation in modern humans. Science Advances, 2022, 8, eabm1148. | 4.7 | 5 |
| 107 | Resonance assignment and structural analysis of acid denatured E. coli [U-15N]-glutaredoxin 3. European Biophysics Journal, 1996, 24, 179-84. | 1.2 | 3 |
| 108 | Assignment of 1H, 13C, and 15N resonances of reduced Escherichia coli glutaredoxin 2. Journal of Biomolecular NMR, 1999, 14, 197-198. | 1.6 | 3 |

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| 109 | The Role of Thioredoxin and Glutaredoxin Systems in Disulfide Reduction and Thiol Redox Control. , 2003, , 1-26. | | 3 |
| 110 | Analysis of glutathione mediated S-(de)nitrosylation in complex biological matrices by immuno-spin trapping and identification of two novel substrates. Nitric Oxide - Biology and Chemistry, 2022, 118, 26-30. | 1.2 | 3 |
| 111 | Enzymatic glutaredoxin-dependent method to determine glutathione and protein S-glutathionylation using fluorescent eosin-glutathione. Analytical Biochemistry, 2019, 568, 24-30. | 1.1 | 2 |
| 112 | Sâ€Denitrosylation by the Câ€Terminal Swinging Arm of R1 Subunit: A Novel Mechanism to Restore Ribonucleotide Reductase Activity. ChemistrySelect, 2021, 6, 1845-1851. | 0.7 | 2 |
| 113 | Expression of mRNAs for the Estrogen and Progesterone Receptors, Insulin-like Growth Factor-I and Thioredoxin in the Porcine Cervix.. Journal of Reproduction and Development, 1999, 45, 143-150. | 0.5 | 1 |
| 114 | Ribonucleotide reductase: In-vitro S-glutathionylation of R2 and p53R2 subunits of mammalian class I ribonucleotide reductase protein. Molecular Biology Reports, 2021, 48, 7621-7626. | 1.0 | 1 |
| 115 | Redox Regulation of Genes and Cell Function. , 2002, , 102-111. | | 0 |
| 116 | The Thiol Redox Paradox in the Requirement for Disulfide Isomerization in the Eukaryotic Endoplasmic Reticulum. , 2003, , 233-256. | | 0 |