Bengt Mannervik (born Eriksson)

Publications

1. Bengt Eriksson (1966) On the synthesis and enzymatic reduction of the coenzyme A-glutathione mixed disulfide, Acta Chem. Scand. 20, 1178-1179.

2. Bengt Eriksson and Bo Sörbo (1967) The synthesis and some properties of the thiosulfonate analogue of glutathione (γ-L-glutamyl-L-3-thiosulfoalanylglycine), Acta Chem. Scand. 21, 958-960.

3. Bengt Eriksson (1967) Enzymatic reduction of S-sulfoglutathione in rat liver, Acta Chem. Scand. 21, 1119.

4. Bengt Eriksson and Stellan A. Eriksson (1967) Synthesis and characterization of the L-cysteine-glutathione mixed disulfide, Acta Chem. Scand. 21, 1304-1312.

5. Bengt Eriksson and Margareta Rundfelt (1968) Reductive decomposition of S-sulfoglutathione in rat liver, Acta Chem. Scand. 22, 562-570.

6. Bengt Eriksson and Rumjana Tabova (1968) On the assay for glutathione in acid solution, Anal. Biochem. 24, 350-352.

7. Margareta Winell and Bengt Mannervik (1969) The nature of the enzymatic reduction of S-sulfoglutathione in liver and peas, Biochim. Biophys. Acta 184, 374-380.

8. Bengt Mannervik and Gun Nise (1969) Synthesis and some reactions of the pantetheine-glutathione mixed disulfide, Arch. Biochem. Biophys. 134, 90-94.

9. Bengt Mannervik (1969) On the kinetics of glutathione reductase, Acta Chem. Scand. 23, 2912-2914.

10. Stellan A. Eriksson and Bengt Mannervik (1970) The reduction of the L-cysteine-glutathione mixed disulfide in rat liver. Involvement of an enzyme catalyzing thiol-disulfide interchange, FEBS Lett. 7, 26-28.

11. Kerstin Ekwall and Bengt Mannervik (1970) Inhibition of yeast S-lactylglutathione lyase (glyoxalase I) by sulfhydryl reagents, Arch. Biochem. Biophys. 137, 128-132.

12. Bengt Mannervik and Bo Sörbo (1970) Inhibition of choline acetyltransferase from bovine caudate nucleus by sulfhydryl reagents and reactivation of the inhibited enzyme, Biochem. Pharmacol. 19, 2509-2516.

13. Bengt Mannervik (1970) The Synthesis of a mixed disulfide of glutathione and 3-carboxy-4-nitrobenzenethiol ("reduced Ellman's reagent"), Acta Chem. Scand. 24, 1847-1848.

14. Stellan A. Eriksson and Bengt Mannervik (1970) A method for the direct recording of an enzyme-catalyzed thiol-disulfide interchange using a mixed disulfide of glutathione and 3-carboxy-4-nitrobenzenethiol, Biochim. Biophys. Acta 212, 518-520.

15. Bengt Mannervik (1972) On the kinetics of glutathione reductase, in "Structure and Function of Oxidation Reduction Enzymes" (Å. Åkeson and Å. Ehrenberg, eds.), pp. 425-431, Pergamon Press, Oxford.

16. Bengt Mannervik, Lars Lindström and Tamás Bártfai (1972) Partial purification and characterization of glyoxalase I from porcine erythrocytes, Eur. J. Biochem. 29, 276-281.

17. Tamás Bártfai and Bengt Mannervik (1972) A procedure based on statistical criteria for discrimination between steady state kinetic models, FEBS Lett. 26, 252-256.

18. Tamás Bártfai and Bengt Mannervik (1972) An attempt to discriminate between mathematical models in enzyme steady state kinetics, in "Analysis and Simulation of Biochemical Systems" (H.C. Hemker and B. Hess, eds.), pp. 197-209, North-Holland, Amsterdam.

19. Tamás Bártfai, Kerstin Ekwall and Bengt Mannervik (1973) Discrimination between steady-state kinetic models of the mechanism of action of yeast glyoxalase I, Biochemistry 12, 387-391.

20. Kerstin Ekwall and Bengt Mannervik (1973) The stereochemical configuration of the lactoyl group of *S*-lactoylglutathione formed by the action of glyoxalase I from porcine erythrocytes and yeast, Biochim. Biophys. Acta 297, 297-299.

21. Tamás Bártfai and Bengt Mannervik (1973) Application of weight factors in the discrimination between mathematical models of enzyme kinetics, FEBS Lett. 32, 179-183.

22. Magdolna Horváth and Bengt Mannervik (1973) A method for studying the liberation of a radioprotective agent (AET) bound to proteins as a mixed disulfide, Acta Chem. Scand. 27, 1083-1084.

23. Bengt Mannervik, Barbara Górna-Hall and Tamás Bártfai (1973) The steady-state kinetics of glyoxalase I from porcine erythrocytes. Evidence for a random-pathway mechanism involving one- and two-substrate branches, Eur. J. Biochem. 37, 270-281.

24. Bengt Mannervik and Tamás Bártfai (1973) Discrimination between mathematical models of biological systems exemplified by enzyme steady state kinetics, Acta Biol. Med. German. 31, 203-215.

25. Bengt Mannervik (1973) A branching reaction mechanism of glutathione reductase, Biochem. Biophys. Res. Commun. 53, 1151-1158.

26. Bengt Mannervik (1974) Glyoxalase I. Kinetic mechanism and molecular properties, in "Glutathione" (L. Flohé, H.C. Benöhr, H. Sies, H.D. Waller and A. Wendel, eds.), pp. 78-89, Georg Thieme Publishers, Stuttgart.

27. Bengt Mannervik (1974) Possible kinetic mechanism of glutathione reductase from yeast, in "Glutathione" (L. Flohé, H.C. Benöhr, H. Sies, H.D. Waller and A. Wendel, eds.), pp. 114-120, Georg Thieme Publishers, Stuttgart.

28. Bengt Mannervik and Stellan A. Eriksson (1974) Enzymatic reduction of mixed disulfides and thiosulfate esters, in "Glutathione" (L. Flohé, H.C. Benöhr, H. Sies, H.D. Waller and A. Wendel, eds.) pp 120-131, Georg Thieme Publishers, Stuttgart.

29. Per Askelöf, Kent Axelsson, Stellan Eriksson and Bengt Mannervik (1974) Mechanism of action of enzymes catalyzing thiol-disulfide interchange. Thioltransferases rather than transhydrogenases. FEBS Lett. 38, 263-267.

30. Bengt Mannervik, Tamás Bártfai and Barbara Górna-Hall (1974) Random pathway mechanism involving parallel one- and two substrate branches for glyoxalase I from yeast, J. Biol. Chem. 249, 901-903.

31. Stellan Eriksson, Claes Guthenberg and Bengt Mannervik (1974) The nature of the enzymatic reduction of the mixed disulfide of coenzyme A and glutathione, FEBS Lett. 39, 296-300.

32. Klas-Bertil Augustinsson, Tamás Bártfai and Bengt Mannervik (1974) A steady-state kinetic model of butyrylcholinesterase from horse plasma, Biochem. J. 141, 825-834.

33. Bengt Mannervik, Gun Persson and Stellan Eriksson (1974) Enzymatic catalysis of the reversible sulfitolysis of glutathione disulfide and the biological reduction of thiosulfate esters, Arch. Biochem. Biophys. 163, 283-289.

34. Stellan Eriksson, Per Askelöf, Kent Axelsson, Inger Carlberg, Claes Guthenberg and Bengt Mannervik (1974) Resolution of glutathione-linked enzymes in rat liver and evaluation of their contribution to disulfide reduction via thiol-disulfide interchange, Acta Chem. Scand. B28, 922-930.

35. Stellan Eriksson, Per Askelöf, Kent Axelsson and Bengt Mannervik (1974) Evidence for a glutathione-dependent interconversion of two forms of a thioltransferase from rat liver catalyzing thiol-disulfide interchange, Acta Chem. Scand. B28, 931-936.

36. Bengt Mannervik (1975) Graphical analysis of steady-state kinetic data of multireactant enzymes, Anal. Biochem. 63, 12-16.

37. Bengt Mannervik, Ewa Marmstål, Kerstin Ekwall and Barbara Górna-Hall (1975) Inactivation of glyoxalase I from porcine erythrocytes and yeast by amino-group reagents, Eur. J. Biochem. 53, 327-333.

38. Bengt Mannervik (1975) Nonlinear regression methods in design of experiments and mathematical modelling. Applications to the analysis of the steady-state kinetics of glutathione reductase, BioSystems 7, 101-119.

39. Per Askelöf, Claes Guthenberg, Inga Jakobson and Bengt Mannervik (1975) Purification and characterization of two glutathione *S*-aryltransferase activities from rat liver, Biochem. J. 147, 513-522.

40. Inger Carlberg and Bengt Mannervik (1975) Purification and characterization of the flavoenzyme glutathione reductase from rat liver, J. Biol. Chem. 250, 5475-5480.

41. Kent Axelsson and Bengt Mannervik (1975) Synthesis of a mixed disulfide of egg white lysozyme and glutathione - a model substrate for enzymatic reduction of protein mixed disulfides, FEBS Lett. 53, 40-43.

42. Bengt Mannervik and Kent Axelsson (1975) Reduction of disulphide bonds in proteins and protein mixed disulphides catalysed by a thioltransferase in rat liver cytosol, Biochem. J. 149, 785-788.

43. Bengt Mannervik and Per Askelöf (1975) Absence of a ping-pong pathway in the kinetic mechanism of glutathione *S*-transferase A from rat liver. Evidence based on quantitative comparison of the asymptotic properties of experimental data and alternative rate equations, FEBS Lett. 56, 218-221.

44. Bengt Mannervik (1976) The kinetic mechanism of glutathione reductase: a branching reaction scheme applicable to many flavoproteins, in "Flavins and Flavoproteins" (T.P. Singer, ed.), pp. 485-491, Elsevier, Amsterdam.

45. Per Askelöf, Margareta Korsfeldt and Bengt Mannervik (1976) Error structure of enzyme kinetic experiments. Implications for weighting in regression analysis of experimental data, Eur. J. Biochem. 69, 61-67.

46. Bengt Mannervik, Kerstin Jacobsson and Vijayakumar Boggaram (1976) Purification of glutathione reductase from erythrocytes by the use of affinity chromatography on 2',5'-ADP-Sepharose 4-B, FEBS Lett. 66, 221-224.

47. Anne-Charlotte Aronsson and Bengt Mannervik (1977) Characterization of glyoxalase I purified from pig erythrocytes by affinity chromatography, Biochem. J. 165, 503-509.

48. Inga Jakobson, Per Askelöf, Margareta Warholm and Bengt Mannervik (1977) A steady-state-kinetic random mechanism for glutathione *S*-transferase A from rat liver. A model involving kinetically significant enzyme-product complexes in the forward reaction, Eur. J. Biochem. 77, 253-262.

49. Bengt Mannervik (1977) Glutathione-dependent enzymes with regulatory properties, Biochem. Soc. Trans. 5, 615-617.

50. Inger Carlberg and Bengt Mannervik (1977) Purification by affinity chromatography of yeast glutathione reductase, the enzyme responsible for the NADPH-dependent reduction of the mixed disulfide of coenzyme A and glutathione, Biochim. Biophys. Acta 484, 268-274.

51. Maria S. Moron, Joseph W. DePierre, Kerstin Jacobsson and Bengt Mannervik (1977) Levels of glutathione and glutathione-metabolizing enzymes in rat lung, in "Microsomes and Drug Oxidations" (V. Ullrich, I. Roots, A. Hildebrandt, R.W. Estabrook and A.H. Conney, eds.), pp. 447-452, Pergamon Press, Oxford.

52. Ewa Marmstål and Bengt Mannervik (1978) Subunit structure of glyoxalase I from yeast, FEBS Lett. 85, 275-278.

53. Kent Axelsson, Stellan Eriksson and Bengt Mannervik (1978) Purification and characterization of cytoplasmic thioltransferase (glutathione: disulfide oxidoreductase) from rat liver, Biochemistry, 17, 2978-2984.

54. Anne-Charlotte Aronsson, Ewa Marmstål and Bengt Mannervik (1978) Glyoxalase I, a zinc metalloenzyme of mammals and yeast, Biochem. Biophys. Res. Commun. 81, 1235-1240.

55. Vijayakumar Boggaram and Bengt Mannervik (1978) An essential histidine residue in the catalytic mechanism of mammalian glutathione reductase, Biochem. Biophys. Res. Commun. 83, 558-564.

56. Bengt Mannervik (1978) Generalized definitions of inhibition patterns for non-Michaelian enzyme steady-state kinetics, FEBS Lett. 93, 225-227.

57. Bengt Mannervik, Claes Guthenberg, Inga Jakobson and Margareta Warholm (1978) Glutathione conjugation: reaction mechanism of glutathione S-transferase A, in "Conjugation Reactions in Drug Biotransformation" (A. Aitio, ed.), pp. 101-110, Elsevier/North-Holland, Amsterdam.

58. Vijayakumar Boggaram, Kerstin Larson and Bengt Mannervik (1978) Characterization of glutathione reductase from porcine erythrocytes, Biochim. Biophys. Acta 527, 337-347.

59. Lasse Uotila and Bengt Mannervik (1979) A steady-state-kinetic model for formaldehyde dehydrogenase from human liver. A mechanism involving NAD^+ and the hemimercaptal adduct of glutathione and formaldehyde as substrates and free glutathione as an allosteric activator of the enzyme, Biochem. J. 177, 869-878.

60. B. Mannervik and K. Axelsson (1978) The roles of glutathione, thioltransferase, and glutathione reductase in the scission of sulfur-sulfur bonds, in "Proceedings in Life Sciences: Functions of Glutathione in Liver and Kidney" (H. Sies and A. Wendel, eds.), pp. 148-153, Springer, Berlin.

61. Ewa Marmstål and Bengt Mannervik (1979) Purification, characterization and kinetic studies of glyoxalase I from rat liver, Biochim. Biophys. Acta 566, 362-370.

62. Bengt Mannervik, Inga Jakobson and Margareta Warholm (1979) A new procedure to derive weighting factors for nonlinear regression analysis applied to enzyme kinetic data, Biochim. Biophys. Acta 567, 43-48.

63. Inga Jakobson, Margareta Warholm and Bengt Mannervik (1979) Multiple inhibition of glutathione *S*-transferase A from rat liver by glutathione derivatives: kinetic analysis supporting a steady-state random sequential mechanism, Biochem. J. 177, 861-868.

64. Bengt Mannervik, Vijayakumar Boggaram, Inger Carlberg and Kerstin Larson (1980) The catalytic mechanism of glutathione reductase, in "Flavins and Flavoproteins" (K. Yagi and T. Yamano, eds.), pp. 173-187, Japan Scientific Societies Press, Tokyo.

65. Maria S. Moron, Joseph W. DePierre and Bengt Mannervik (1979) Levels of glutathione, glutathione reductase and glutathione *S*-transferase activities in rat lung and liver, Biochim. Biophys. Acta 582, 67-78.

66. Anne-Charlotte Aronsson, Gudrun Tibbelin and Bengt Mannervik (1979) Purification of glyoxalase I from human erythrocytes by the use of affinity chromatography and separation of the three isoenzymes, Anal. Biochem. 92, 390-393.

67. Eva-Lotta Larsson, Bengt Mannervik and Henric Blomgren (1979) Characterization of a human mitogenic factor (MF) released by phytohemagglutinin-activated lymphocytes, Cell. Immunol. 44, 424-432.

68. Inger Carlberg and Bengt Mannervik (1979) Inhibition of glutathione reductase by interaction of 2,4,6-trinitrobenzenesulfonate with the active-site dithiol, FEBS Lett. 98, 263-266.

69. Inga Jakobson, Margareta Warholm and Bengt Mannervik (1979) The effect of ethanol on the steady-state kinetics of glutathione *S*-transferase A from rat liver, FEBS Lett. 102, 165-168.

70. Jorgen Stenersen, Claes Guthenberg and Bengt Mannervik (1979) Glutathione *S*-transferases in earthworms (Lumbricidae), Biochem. J. 181, 47-50.

71. Inga Jakobson, Margareta Warholm and Bengt Mannervik (1979) The binding of substrates and a product of the enzymatic reaction to glutathione *S*-transferase A, J. Biol. Chem. 254, 7085-7089.

72. Claes Guthenberg and Bengt Mannervik (1979) Purification of glutathione *S*-transferases from rat lung by affinity chromatography. Evidence for an enzyme form absent in rat liver, Biochem. Biophys. Res. Commun. 86, 1304-1310.

73. Vijayakumar Boggaram, Thomas Brobjer, Kerstin Larson and Bengt Mannervik (1979) Purification of glutathione reductase from porcine erythrocytes by the use of affinity chromatography on 2',5'-ADP-Sepharose 4B and crystallization of the enzyme, Anal. Biochem. 98, 335-340.

74. Ewa Marmstål, Anne-Charlotte Aronsson and Bengt Mannervik (1979) Comparison of glyoxalase I purified from yeast (*Saccharomyces cerevisiae*) with the enzyme from mammalian sources, Biochem. J. 183, 23-30.

75. Ewa Marmstål and Bengt Mannervik (1979) Binding of the competitive inhibitor *S*-(p-bromobenzyl)-glutathione to glyoxalase I from yeast, FEBS Lett. 102, 162-164.

76. Vijayakumar Boggaram and Bengt Mannervik (1979) Modification of the binding site for pyridine nucleotides of glutathione reductase by 2,3-butanedione, Acta Chem. Scand. B33, 593-594.

77. Claes Guthenberg, Karin Åkerfeldt and Bengt Mannervik (1979) Purification of

glutathione *S*-transferase from human placenta, Acta Chem. Scand. B33, 595-596.

78. Bengt Mannervik (1980) Thioltransferases, in "Enzymatic Basis of Detoxication" (W.B. Jakoby, ed.), Vol. II, pp 229-244, Academic Press, New York.

79. Bengt Mannervik (1980) Glyoxalase I, in "Enzymatic Basis of Detoxication" (W.B. Jakoby, ed.), Vol. II, pp. 263-273, Academic Press, New York.

80. Bengt Mannervik, Claes Guthenberg and Karin Åkerfeldt (1980) Comparison of glutathione *S*-transferases from rat tissues with the activity in human placenta, in "Microsomes, Drug Oxidations, and Chemical Carcinogenesis (M.J. Coon, A.H. Conney, R.W. Estabrook, H.V. Gelboin, J.R. Gillette and P.J. O'Brien, eds.), pp. 663-666, Academic Press, New York.

81. Bengt Mannervik and Kent Axelsson (1980) Role of cytoplasmic thioltransferase in cellular regulation by thiol-disulphide interchange, Biochem. J. 190, 125-130.

82. Kent Axelsson and Bengt Mannervik (1980) General specificity of cytoplasmic thioltransferase (thiol: disulfide oxidoreductase) from rat liver for thiol and disulfide substrates, Biochim. Biophys. Acta 613, 324-336.

83. Kent Axelsson and Bengt Mannervik (1980) A possible role of cytoplasmic thioltransferase in the intracellular degradation of disulfide-containing proteins, Acta Chem. Scand. B34. 139-140.

84. Inger Carlberg and Bengt Mannervik (1980) Interaction of 2,4,6-trinitrobenzenesulfonate and 4-chloro-7-nitrobenzo-2-oxa-1,3-diazole with the active sites of glutathione reductase and lipoamide dehydrogenase, Acta Chem. Scand. B34, 144-146.

85. Vijayakumar Boggaram and Bengt Mannervik (1980) Modification of glutathione reductase and cross-linking of its subunits by the bifunctional reagent 1,5-difluoro-2,4-dinitrobenzene, Acta Chem. Scand. B34, 147-148.

86. Bengt Mannervik (1981) Design and analysis of kinetic experiments for discrimination between rival models, in "Kinetic Data Analysis: Design and Analysis of Enzyme and Pharmaco-kinetic Experiments" (L. Endrenyi, ed.), pp. 235-270, Plenum, New York.

87. Inger Carlberg and Bengt Mannervik (1980) Oxidase activity of glutathione reductase effected by 2,4,6-trinitrobenzenesulfonate, FEBS Lett. 115, 265-268.

88. Claes Guthenberg, Ralf Morgenstern, Joseph W. DePierre and Bengt Mannervik (1980) Induction of glutathione S-transferases A, B and C in rat liver cytosol by *trans*-stilbene oxide, Biochim. Biophys. Acta 631, 1-10.

89. Siv Sellin, Anne-Charlotte Aronsson and Bengt Mannervik (1980) A method based on the use of methanol as a stabilizing agent to prepare metal-free glyoxalase I and to reconstitute activity by addition of bivalent metal ions, Acta Chem. Scand. B34, 541-543.

90. Inger Carlberg, Torgny Sjödin and Bengt Mannervik (1980) Circular dichroism studies of

glutathione reductase, Eur. J. Biochem. 112, 487-491.

91. Margareta Warholm, Claes Guthenberg, Bengt Mannervik, Christer von Bahr and Hans Glaumann (1980) Identification of a new glutathione *S*-transferase in human liver, Acta Chem. Scand. B34, 607-610.

92. Lasse Uotila and Bengt Mannervik (1980) Product inhibition studies of human liver formaldehyde dehydrogenase, Biochim. Biophys. Acta 616, 153-157.

93. Anne-Charlotte Aronsson, Siv Sellin, Gudrun Tibbelin and Bengt Mannervik (1981) Probing the active site of glyoxalase I from human erythrocytes by use of the strong reversible inhibitor *S*-*p*-bromobenzylglutathione and metal substitutions, Biochem. J. 197, 67-75.

94. Bengt Mannervik (1982) Mercaptans, in "Metabolic Basis of Detoxication" (W.B. Jakoby, J.R. Bend and J. Caldwell, eds.), pp. 185-206, Academic Press, New York.

95. Bengt Mannervik and Kerstin Larson (1981) Mixed (unsymmetric) disulfides: coenzyme A-glutathione disulfide as an example, Meth. Enzymol. 77, 420-424.

96. Bengt Mannervik, Kent Axelsson and Kerstin Larson (1981) Thioltransferase, Meth. Enzymol. 77, 281-285.

97. Bengt Mannervik and Claes Guthenberg (1981) Glutathione transferase (human placenta), Meth. Enzymol. 77, 231-235.

98. Bengt Mannervik, Anne-Charlotte Aronsson, Ewa Marmstål and Gudrun Tibbelin (1981) Glyoxalase I (rat liver), Meth. Enzymol. 77, 297-301.

99. Margareta Warholm, Claes Guthenberg, Bengt Mannervik and Christer von Bahr (1981) Purification of a new glutathione *S*-transferase (transferase μ) from human liver having high activity with benzo(a)pyrene-4,5-oxide, Biochem. Biophys. Res. Commun. 98, 512-519.

100. Ralf Morgenstern, Joseph W. DePierre, Christina Lind, Claes Guthenberg, Bengt Mannervik and Lars Ernster (1981) Benzo(a) pyrene quinones can be generated by lipid peroxidation and are conjugated with glutathione by glutathione *S*-transferase B from rat liver, Biochem. Biophys. Res. Commun. 99, 682-690.

101. Margareta Warholm, Claes Guthenberg, Bengt Mannervik, Gian Maria Pacifici and Anders Rane (1981) Glutathione *S*-transferases in human fetal liver, Acta Chem. Scand. B35, 225-227.

102. Siv Sellin, Anne-Charlotte Aronsson, Bengt Mannervik and L.E. Göran Eriksson (1981) Studies of glyoxalase I substituted with manganese in its active site, Acta Chem. Scand. B35, 229-231.

103. Inger Carlberg, Joseph W. DePierre and Bengt Mannervik (1981) Effect of inducers of

drug-metabolizing enzymes on glutathione reductase and glutathione peroxidase in rat liver, Biochim. Biophys. Acta 677, 140-145.

104. Inger Carlberg, Barbara Altmejd and Bengt Mannervik (1981) Purification and immunological studies of glutathione reductase from rat liver. Evidence for an antigenic determinant at the nucleotide-binding domain of the enzyme, Biochim. Biophys. Acta 677, 146-152.

105. Inger Carlberg and Bengt Mannervik (1981) Purification and characterization of glutathione reductase from calf liver. An improved procedure for affinity chromatography on 2',5'-ADP-Sepharose 4B, Anal. Biochem. 116, 531-536.

106. Claes Guthenberg and Bengt Mannervik (1981) Glutathione *S*-transferase (transferase π) from human placenta is identical or closely related to glutathione S-transferase (transferase ρ) from erythrocytes, Biochim. Biophys. Acta 661, 255-260.

107. Bengt Mannervik (1981) Membrane-associated reactions involving glutathione, in "Mitochondria and Microsomes" (C.P. Lee, G. Schatz and G. Dallner, eds.), pp. 729-748, Addison-Wesley Publ. Co., Reading.

108. Ewa Marmstål and Bengt Mannervik (1981) Evaluation of the two-substrate pathway of glyoxalase I from yeast by use of carbonic anhydrase and rapid-kinetic studies, FEBS Lett. 131, 301-304.

109. Vijayakumar Boggaram and Bengt Mannervik (1982) Essential arginine residues in the pyridine nucleotide binding sites of glutathione reductase, Biochim. Biophys. Acta 701, 119-126.

110. Bengt Mannervik, Vijayakumar Boggaram and Inger Carlberg (1982) Mechanisms of GSSG and oxygen reduction catalyzed by glutathione reductase, in "Flavins and Flavoproteins" (V. Massey and C.H. Williams, Jr., eds.), pp. 145-148, Elsevier/ North Holland, Amsterdam.

111. Inger Carlberg and Bengt Mannervik (1982) Reaction of 2,4,6-trinitrobenzenesulfonate with the active site of glutathione reductase, in "Flavins and Flavoproteins" (V. Massey and C.H. Williams, Jr., eds.), pp. 53-56, Elsevier/North Holland, Amsterdam.

112. Vijayakumar Boggaram and Bengt Mannervik (1982) Role of arginine residues in the catalytic function of glutathione reductase, in "Flavins and Flavoproteins" (V. Massey and C.H. Williams, Jr., eds.), pp. 49-52, Elsevier/North Holland, Amsterdam.

113. Bengt Mannervik (1982) Regression analysis, experimental error, and statistical criteria in the design and analysis of experiments for discrimination between rival kinetic models, Meth. Enzymol. 87, 370-390.
Also in "Contemporary Enzyme Kinetics and Mechanisms" (D.L. Purich, ed.), pp. 75-95, Academic Press, New York 1983.

114. Bengt Mannervik, Anne-Charlotte Aronsson and Gudrun Tibbelin (1982) Glyoxalase I from human erythrocytes, Meth. Enzymol. 90, 535-541.

115. Ralf Morgenstern, Claes Guthenberg, Bengt Mannervik, Joseph W. DePierre and Lars Ernster (1982) Benzo(a)pyrene metabolism by rat liver microsomes: effects of adding purified glutathione *S*-transferases A, B, and C, Cancer Res. 42, 4215-4221.

116. Helgi Jensson, Per Ålin and Bengt Mannervik (1982) Separation of glutathione *S*-transferases from rat liver cytosol by chromatofocusing, Acta Chem. Scand. B36, 205-206.

117. Siv Sellin, L.E. Göran Eriksson and Bengt Mannervik (1982) Fluorescence and nuclear relaxation enhancement studies of the binding of glutathione derivatives to manganese-reconstituted glyoxalase I from human erythrocytes. A model for the catalytic mechanism of the enzyme involving a hydrated metal ion, Biochemistry 21, 4850-4857.

118. Siv Sellin, Paul R. Rosevear, Bengt Mannervik and Albert S. Mildvan (1982) Nuclear relaxation studies of the role of the essential metal in glyoxalase I, J. Biol. Chem. 257, 10023-10029.

119. Bengt Mannervik and Helgi Jensson (1982) Binary combinations of four protein subunits with different catalytic specificities explain the relationship between six basic glutathione *S*-transferases in rat liver cytosol, J. Biol. Chem. 257, 9909-9912.

120. Paolo DiSimplicio, Helgi Jensson and Bengt Mannervik (1983) Identification of the isozymes of glutathione transferase induced by *trans*-stilbene oxide, Acta Chem. Scand. B37, 255-257.

121. Claes Guthenberg, Ing-Mari Åstrand, Per Ålin and Bengt Mannervik (1983) Glutathione transferases in rat testis, Acta Chem. Scand. B37, 261-262.

122. Bengt Mannervik, Kent Axelsson, Ann-Charlott Sundewall and Arne Holmgren (1983) Relative contributions of thioltransferase- and thioredoxin-dependent systems in reduction of low-molecular-mass and protein disulphides, Biochem. J. 213, 519-523.

123. Süha Yalçin, Helgi Jensson and Bengt Mannervik (1983) A set of inhibitors for discrimination between the basic isozymes of glutathione transferase in rat liver, Biochem. Biophys. Res. Commun. 114, 829-834.

124. Ralf Morgenstern, Claes Guthenberg, Bengt Mannervik and Joseph W. DePierre (1983) The amount and nature of glutathione transferases in rat liver microsomes determined by immunochemical methods, FEBS Lett. 160, 264-268.

125. Kent Axelsson and Bengt Mannervik (1983) An essential role of cytosolic thioltransferase in protection of pyruvate kinase from rabbit liver against oxidative inactivation, FEBS Lett. 152, 114-118.

126. Margareta Warholm, Claes Guthenberg and Bengt Mannervik (1983) Molecular and catalytic properties of glutathione transferase μ from human liver: an enzyme efficiently conjugating epoxides, Biochemistry 22, 3610-3617.

127. Siv Sellin, L.E. Göran Eriksson, Anne-Charlotte Aronsson and Bengt Mannervik (1983) Octahedral metal coordination in the active site of glyoxalase I as evidenced by the properties of Co(II)-glyoxalase I, J. Biol. Chem. 258, 2091-2093.

128. Siv Sellin and Bengt Mannervik (1983) Reversal of the reaction catalyzed by glyoxalase I. Calculation of the equilibrium constant for the enzymatic reaction, J. Biol. Chem. 258, 8872-8875.

129. Paul R. Rosevear, Ravi V.J. Chari, John W. Kozarich, Siv Sellin, Bengt Mannervik and Albert S. Mildvan (1983) ^{13}C NMR studies of the product complex of glyoxalase I, J. Biol. Chem. 258, 6823-6826.

130. Bengt Mannervik, Claes Guthenberg, Helgi Jensson, Margareta Warholm and Per Ålin (1983) Isozymes of glutathione S-transferases in rat and human tissues, in "Functions of Glutathione: Biochemical, Physiological, Toxicological, and Clinical Aspects" (A. Larsson, S. Orrenius, A. Holmgren and B. Mannervik, eds.), pp. 75-88, Raven Press, New York.

131. Siv Sellin, Anne-Charlotte Aronsson, L.E. Göran Eriksson, Kerstin Larsen, Gudrun Tibbelin and Bengt Mannervik (1983) Properties and catalytic function of glyoxalase I, in "Functions of Glutathione: Biochemical, Physiological, Toxicological, and Clinical Aspects" (A. Larsson, S. Orrenius, A. Holmgren and B. Mannervik, eds.), pp. 187-197, Raven Press, New York.

132. Bengt Mannervik, Claes Guthenberg, Helgi Jensson, Margareta Warholm and Per Ålin (1983) Species and tissue differences in the occurrence of multiple forms of rat and human glutathione transferases, in "Extrahepatic Drug Metabolism and Chemical Carcinogenesis" (J. Rydström, J. Montelius and M. Bengtsson, eds.), pp. 153-162, Elsevier Science Publishers, Amsterdam.

133. Claes Guthenberg, Per Ålin, Ing-Mari Åstrand, Süha Yalcin and Bengt Mannervik (1983) Isozymes of glutathione transferase in rat testis, in "Extrahepatic Drug Metabolism and Chemical Carcinogenesis" (J. Rydström, J. Montelius and M. Bengtsson, eds.), pp. 171-176, Elsevier Science Publishers, Amsterdam.

134. Süha Yalçin, Helgi Jensson and Bengt Mannervik (1983) Inhibitors for identification of glutathione transferase subunits in the rat, in "Extrahepatic Drug Metabolism and Chemical Carcinogenesis" (J. Rydström, J. Montelius and M. Bengtsson, eds.), pp. 187-188, Elsevier Science Publishers, Amsterdam.

135. Maria Olsson, Claes Guthenberg and Bengt Mannervik (1983) Glutathione transferase in human brain, in "Extrahepatic Drug Metabolism and Chemical Carcinogenesis" (J. Rydström, J. Montelius and M. Bengtsson, eds.), pp. 191-192, Elsevier Science Publishers, Amsterdam.

136. Paolo Di Simplicio and Bengt Mannervik (1983) Enzymes involved in glutathione metabolism in rat liver and blood after carbon tetrachloride intoxication, Toxicol. Lett. 18, 285-289.

137. Bengt Mannervik, Paolo Di Simplicio and Helgi Jensson (1984) Differential induction of glutathione dependent enzymes, Life Chem. Reports, Suppl. 2, 376-380.

138. L. Garcia-Iniguez, L. Powers, B. Chance, S. Sellin, B. Mannervik and A.S. Mildvan (1984) X-ray absorption studies of the Zn^{2+} site of glyoxalase I, Biochemistry 23, 685-689.

139. William B. Jakoby, Brian Ketterer and Bengt Mannervik (1984) Glutathione transferases: nomenclature, Biochem. Pharmacol. 33, 2539-2540.

140. William H. Habig, William B. Jakoby, Claes Guthenberg, Bengt Mannervik and David L. Vander Jagt (1984) 2-Propylthiouracil does not replace glutathione for the glutathione transferases, J. Biol. Chem. 259, 7409-7410.

141. P.R. Rosevear, S. Sellin, B. Mannervik, I.D. Kuntz, and A.S. Mildvan (1984) NMR and computer modeling studies of the conformations of glutathione derivatives at the active site of glyoxalase I, J. Biol. Chem. 259, 11436-11447.

142. Siv Sellin and Bengt Mannervik (1984) Metal dissociation constants for glyoxalase I reconstituted with Zn^{2+}, Co^{2+}, Mn^{2+}, and Mg^{2+}, J. Biol. Chem. 259, 11426-11429.

143. Bengt Mannervik, Helgi Jensson, Per Ålin, Lars Örning and Sven Hammarström (1984) Transformation of leukotriene A_4 methyl ester to leukotriene C_4 monomethyl ester by cytosolic rat glutathione transferases, FEBS Lett. 175, 289-293.

144. B. Mannervik, C. Guthenberg, H. Jensson, M.K. Tahir, M. Warholm and P. Ålin (1984) Species and tissue differences in the occurrence of isoenzymes of glutathione transferase, in "Proceedings of IUPHAR 9th International Congress of Pharmacology" (W. Paton, J.F. Mitchell and P. Turner, eds.), Vol. 3, pp. 225-230, Macmillan Press, London.

145. Inger Carlberg and Bengt Mannervik (1984) Probing the catalytic mechanism of glutathione reductase with 2,4,6-trinitrobenzenesulfonate, in "Flavins and Flavoproteins" (R.C. Bray, P.C. Engel and S.G. Mayhew, eds.), pp. 501-504, Walter de Gruyter & Co., Berlin.

146. Willy A.M. van den Berg, Jacques Vervoort, Chrit T.W. Moonen, Franz Müller, Inger Carlberg and Bengt Mannervik (1984) ^{13}C-NMR study on the active sites of lipoamide dehydrogenase and glutathione reductase, in "Flavins and Flavoproteins" (R.C. Bray, P.C. Engel and S.G. Mayhew, eds.), pp. 143-146, Walter de Gruyter & Co., Berlin.

147. Bengt Mannervik (1985) The isoenzymes of glutathione transferase, Adv. Enzymol. Rel. Areas Mol. Biol. 57, 357-417.

148. Bengt Mannervik, Per Ålin, Claes Guthenberg, Helgi Jensson and Margareta Warholm (1985) Glutathione transferases and the detoxication of products of oxidative metabolism, in "Microsomes and Drug Oxidations" (A.R. Boobis, J. Caldwell, F. de Matteis and C.R. Elcombe, eds.), pp. 221-228, Taylor & Francis, Basingstoke.

149. Margareta Warholm, Claes Guthenberg, Christer von Bahr and Bengt Mannervik (1985) Glutathione transferases from human liver, Meth. Enzymol. 113, 499-504.

150. Helgi Jensson, Per Ålin and Bengt Mannervik (1985) Glutathione transferase isoenzymes from rat liver cytosol, Meth. Enzymol. 113, 504-507.

151. Claes Guthenberg, Per Ålin and Bengt Mannervik (1985) Glutathione transferase from rat testis, Meth. Enzymol. 113, 507-510.

152. Kerstin Larson, Véronique Eriksson and Bengt Mannervik (1985) Thioltransferase from human placenta, Meth. Enzymol. 113, 520-524.

153. Bengt Mannervik (1985) Glutathione peroxidase, Meth. Enzymol. 113, 490-495.

154. Inger Carlberg and Bengt Mannervik (1985) Glutathione reductase, Meth. Enzymol. 113, 484-490.

155. Per Ålin, U. Helena Danielson and Bengt Mannervik (1985) 4-Hydroxyalk-2-enals are substrates for glutathione transferase, FEBS Lett. 179, 267-270.

156. Inger Carlberg, Lena Sahlman and Bengt Mannervik (1985) The effect of 2,4,6-trinitrobenzenesulfonate on mercuric reductase, glutathione reductase and lipoamide dehydrogenase, FEBS Lett. 180, 102-106.

157. Mohammad Kalim Tahir, Claes Guthenberg and Bengt Mannervik (1985) Inhibitors for distinction of three types of human glutathione transferase, FEBS Lett. 181, 249-252.

158. Per Ålin, Bengt Mannervik and Hans Jörnvall (1985) Structural evidence for three different types of glutathione transferase in human tissues, FEBS Lett. 182, 319-322.

159. Gian Maria Pacifici, Margareta Warholm, Claes Guthenberg, Bengt Mannervik and Anders Rane (1986) Organ distribution of glutathione transferase isoenzymes in the human fetus: differences between liver and extrahepatic tissues, Biochem. Pharmacol. 35, 1616-1619.

160. Per Ålin, Helgi Jensson, Claes Guthenberg, U. Helena Danielson, Mohammad Kalim Tahir and Bengt Mannervik (1985) Purification of major basic glutathione transferase isoenzymes from rat liver by use of affinity chromatography and fast protein liquid chromatofocusing, Anal. Biochem. 146, 313-320.

161. Iain G.C. Robertson, Helgi Jensson, Claes Guthenberg, Mohammad Kalim Tahir, Bengt Jernström and Bengt Mannervik (1985) Differences in the occurrence of glutathione transferase isoenzymes in rat lung and liver, Biochem. Biophys. Res. Commun. 127, 80-86.

162. Claes Guthenberg, Helgi Jensson, Lena Nyström, Elena Österlund, Muhammad Kalim Tahir and Bengt Mannervik (1985) Isoenzymes of glutathione transferase in rat kidney cytosol, Biochem. J. 230, 609-615.

163. Sven Hammarström, Lars Örning, Kerstin Bernström, Bengt Gustafsson, Elisabeth Norin, Bengt Mannervik, Helgi Jensson and Per Ålin (1985) Glutathione transferases catalyzing leukotriene C synthesis and metabolism of leukotrienes C_4 and E_4 *in vivo* and *in vitro*, in "Prostaglandins, Leukotrienes, and Lipoxins" (J.M. Bailey, ed.) Plenum Press, New York, pp. 69-77.

164. Mats Söderström, Bengt Mannervik, Lars Örning and Sven Hammarström (1985) Leukotriene C_4 formation catalyzed by three distinct forms of human cytosolic glutathione transferase, Biochem. Biophys. Res. Commun. 128, 265-270.

165. U. Helena Danielson and Bengt Mannervik (1985) Kinetic independence of the subunits of cytosolic glutathione transferase from the rat, Biochem. J. 231, 263-267.

166. Mohammad Kalim Tahir and Bengt Mannervik (1986) Simple inhibition studies for distinction between homodimeric and heterodimeric isoenzymes of glutathione transferase, J. Biol. Chem. 261, 1048-1051.

167. Kerstin Larsen, Anne-Charlotte Aronsson, Ewa Marmstål and Bengt Mannervik (1985) Immunological comparison of glyoxalase I from yeast and mammals and quantitative determination of the enzyme in human tissues by radioimmunoassay, Comp. Biochem. Physiol. 82B, 625-638.

168. Inger Carlberg and Bengt Mannervik (1986) Reduction of 2,4,6-trinitrobenzenesulfonate by glutathione reductase and the effect of $NADP^+$ on the electron transfer, J. Biol. Chem. 261, 1629-1635.

169. Bengt Mannervik, Inga Jakobson and Margareta Warholm (1986) Error structure as a function of substrate and inhibitor concentration in enzyme kinetic experiments, Biochem. J. 235, 797-804.

170. Bengt Mannervik, Per Ålin, Claes Guthenberg, Helgi Jensson, M. Kalim Tahir, Margareta Warholm and Hans Jörnvall (1985) Identification of three classes of cytosolic glutathione transferase common to several mammalian species: correlation between structural data and enzymatic properties, Proc. Natl. Acad. Sci. USA 82, 7202-7206.

171. Margareta Warholm, Helgi Jensson, Mohammad Kalim Tahir and Bengt Mannervik (1986) Purification and characterization of three distinct glutathione transferases from mouse liver, Biochemistry 25, 4119-4125.

172. Claes Guthenberg, Margareta Warholm, Anders Rane and Bengt Mannervik (1986) Two distinct forms of glutathione transferase from human foetal liver. Purification and comparison with isoenzymes isolated from adult liver and placenta, Biochem. J. 235, 741-745.

173. Iain G.C. Robertson, Claes Guthenberg, Bengt Mannervik and Bengt Jernström (1986) Differences in stereoselectivity and catalytic efficiency of three human glutathione transferases in the conjugation of glutathione with 7ß,8a-dihydroxy-9a,10a-oxy-7,8,9,10-tetrahydrobenzo(a)pyrene, Cancer Res. 46, 2220-2224.

174. Helgi Jensson, Lennart C. Eriksson and Bengt Mannervik (1985) Selective expression of glutathione transferase isoenzymes in chemically induced preneoplastic rat hepatocyte nodules, FEBS Lett. 187, 115-120.

175. Bengt Mannervik, Siv Sellin and L.E. Göran Eriksson (1986) Glyoxalase I - an enzyme containing hexacoordinate Zn^{2+} in its active site, in "Zinc Enzymes" (I. Bertini, C. Luchinat, W. Maret and M. Zeppesauer, eds.), pp. 517-524, Birkhäuser, Boston, Basel, Stuttgart.

176. Bengt Mannervik (1986) Glutathione-linked enzymes and cellular regulation by thiol-disulfide interchange, in "Thioredoxin and Glutaredoxin Systems: Structure and Function" (A. Holmgren, C.-I. Brändén, H. Jörnvall and B.M. Sjöberg, eds.), pp. 349-356, Raven Press, New York.

177. Iain G.C. Robertson, Helgi Jensson, Bengt Mannervik and Bengt Jernström (1986) Glutathione transferases in rat lung: the presence of transferase 7-7, highly efficient in the conjugation of glutathione with the carcinogenic (+)-7ß,8a-dihydroxy-9a,10a-oxy-7,8,9,10-tetrahydrobenzo(a)pyrene, Carcinogenesis 7, 295-299.

178. Bengt Mannervik (1986) Glutathione and the evolution of enzymes for detoxication of products of oxygen metabolism, Chem. Scripta 26B, 281-284.

179. Per Ålin, Bengt Mannervik and Hans Jörnvall (1986) Cytosolic rat liver glutathione transferase 4-4. Primary structure of the protein reveals extensive differences between homologous glutathione transferases of classes *Alpha* and *Mu*, Eur. J. Biochem. 156, 343-350.

180. Iain G.C. Robertson, Claes Guthenberg, Bengt Mannervik and Bengt Jernström (1988) The glutathione conjugation of benzo(a)pyrene diol-epoxide by human glutathione transferases, in "Polynuclear Aromatic Hydrocarbons: A Decade of Progress (M. Cooke and A.J. Dennis, eds.)", Vol. 10, pp. 799-808, Battelle Press, Battelle.

181. Bengt Mannervik and U. Helena Danielson (1986) Empirical error functions for model discrimination and parameter estimation in enzyme kinetics, in "Dynamics of Biochemical Systems" (S. Damjanovich, T. Keleti, and L. Trón, eds.), pp. 323-337, Akadémiai Kiadó, Budapest.

182. Helgi Jensson, Claes Guthenberg, Per Ålin and Bengt Mannervik (1986) Rat glutathione transferase 8-8, an enzyme efficiently detoxifying 4-hydroxyalk-2-enals, FEBS Lett. 203, 207-209.

183. Sven Hammarström, Lars Örning, Kerstin Bernström, Bengt Mannervik, Mats Söderström, Bengt Gustafsson, Elisabeth Norin and Lennart Kaijser (1986) Biosynthesis and metabolism of leukotriene C, in "Allergy and Inflammation" (A.B. Kay, ed.), pp. 83-94, Academic Press, New York.

184. Lennart C. Eriksson, Agneta Blanck, Karl Walter Bock and Bengt Mannervik (1987) Metabolism of xenobiotics in hepatocyte nodules, Toxicol. Pathol. 15, 27-42.

185. Bengt Mannervik (1987) Glutathione transferase, in "Drug Metabolism - from Molecules to Man" (D.J. Benford, J.W. Bridges and G.G. Gibson, eds.), pp. 30-39, Taylor & Francis, London.

186. Bengt Mannervik (1987) The roles of different classes of glutathione transferase in the detoxication of reactive products of oxidative metabolism, Chem. Scripta 27A, 121-123.

187. Bengt Mannervik (1987) The enzymes of glutathione metabolism: an overview, Biochem. Soc. Trans. 15, 717-718.

188. Bengt Mannervik, Per Ålin, U. Helena Danielson, Claes Guthenberg, Helgi Jensson, Nazmi Özer, M. Kalim Tahir, Margareta Warholm and Hans Jörnvall (1987) Three classes of mammalian glutathione transferase and their occurrence in the rat and the mouse, in "Glutathione *S*-Transferases and Carcinogenesis" (T.J. Mantle, J.D. Hayes, and C.B. Pickett, eds.), pp. 19-27, Taylor & Francis, London.

189. Mats Söderström, Sven Hammarström and Bengt Mannervik (1987) Glutathione transferases in murine mastocytoma cells, in "Glutathione *S*-Transferases and Carcinogenesis" (T.J. Mantle, J.D. Hayes, and C.B. Pickett, eds.), pp. 257-258, Taylor & Francis, London.

190. Janeric Seidegård, Claes Guthenberg, Ronald W. Pero and Bengt Mannervik (1987) Identification of the glutathione transferase from human mononuclear leukocytes having high activity towards trans-stilbene oxide as the hepatic transferase μ, in "Glutathione *S*-Transferases and Carcinogenesis" (T.J. Mantle, J.D. Hayes, and C.B. Pickett, eds.), pp. 225-226, Taylor & Francis, London.

191. Mohammad K. Tahir, Claes Guthenberg and Bengt Mannervik (1987) The isoenzyme composition of glutathione transferase in a rat hepatoma cell line, in "Glutathione *S*-Transferases and Carcinogenesis" (T.J. Mantle, J.D. Hayes, and C.B. Pickett, eds.), pp. 259-260, Taylor & Francis, London.

192. U. Helena Danielson, Hermann Esterbauer and Bengt Mannervik (1987) Activity profiles of different mammalian glutathione transferases for a homologous series of 4-hydroxyalk-2-enals, in "Glutathione *S*-Transferases and Carcinogenesis" (T.J. Mantle, J.D. Hayes, and C.B. Pickett, eds.), pp.61-62, Taylor & Francis, London.

193. Gilberto Del Boccio, Carmine Di Ilio, Per Ålin, Hans Jörnvall and Bengt Mannervik (1987) Identification of a novel glutathione transferase in human skin homologous with class Alpha glutathione transferase 2-2 in the rat, Biochem. J. 244, 21-25.

194. Björn Dahllöf, Tommy Martinsson, Bengt Mannervik, Helgi Jensson and Göran Levan (1987) Characterization of multidrug resistance in SEWA mouse tumor cells: increased glutathione transferase activity and reversal of resistance with Verapamil, Anticancer Res. 7, 65-70.

195. Siv Sellin, L.E. Göran Eriksson and Bengt Mannervik (1987) Electron paramagnetic resonance study of the active site of copper-substituted human glyoxalase I, Biochemistry 26, 6779-6784.

196. Bengt Persson, Hans Jörnvall, Per Ålin and Bengt Mannervik (1988) Structural classes of glutathione transferase: distinction between isoenzymes and enzymes, Protein Seq. Data Anal. 1, 183-186.

197. U. Helena Danielson, Hermann Esterbauer and Bengt Mannervik (1987) Structure-activity relationships of 4-hydroxyalkenals in the conjugation catalysed by mammalian glutathione transferases, Biochem. J. 247, 707-713.

198. Janeric Seidegård, Claes Guthenberg, Ronald W. Pero and Bengt Mannervik (1987) The *trans*-stilbene oxide-active glutathione transferase in human mononuclear leucocytes is identical with the hepatic glutathione transferase μ, Biochem. J. 246, 783-785.

199. Gian Maria Pacifici, Claes Guthenberg, Margareta Warholm, Bengt Mannervik and Anders Rane (1988) Conjugation of styrene oxide by the basic and acidic forms of glutathione transferase in the human fetal liver, Dev. Pharmacol. Ther. 11, 243-251.

200. Bengt Mannervik, Victor M. Castro, U. Helena Danielson, Mohammad Kalim Tahir, Johan Hansson and Ulrik Ringborg (1987) Expression of class Pi glutathione transferase in human malignant melanoma cells, Carcinogenesis 8, 1929-1932.

201. Per Ålin, Helgi Jensson, Ella Cederlund, Hans Jörnvall and Bengt Mannervik (1989) Cytosolic glutathione transferases from rat liver. Primary structure of class Alpha transferase 8-8 and characterization of low-abundance class Mu glutathione transferases, Biochem. J. 261, 531-539.

202. Lars Örning, Kerstin Bernström, Mats Söderström, Bengt Mannervik and Sven Hammarström (1987) Leukotriene C metabolizing enzymes, in "Molecular Biology of the Artherial Wall" (G. Schettler, ed.), pp. 134-137, Springer Verlag, Berlin.

203. U. Helena Danielson and Bengt Mannervik (1988) Paradoxical inhibition of rat glutathione transferase 4-4 by indomethacin explained by substrate-inhibitor-enzyme complexes in a random-order sequential mechanism, Biochem. J. 250, 705-711.

204. Mats Söderström, Sven Hammarström and Bengt Mannervik (1988) Leukotriene C synthase in mouse mastocytoma cells. An enzyme distinct from cytosolic and microsomal glutathione transferases, Biochem. J. 250, 713-718.

205. Claes Andersson, Mats Söderström and Bengt Mannervik (1988) Activation and inhibition of microsomal glutathione transferase from mouse liver, Biochem. J. 249, 819-823.

206. Bengt Mannervik and U. Helena Danielson (1988) Glutathione transferases - structure and catalytic activity, CRC Crit. Rev. Biochem. 23, 283-337.

207. Bengt Mannervik and U. Helena Danielson (1988) Role of glutathione transferases in chemical deactivation and activation, in "Microsomes and Drug Oxidations" (J.O. Miners, D.J. Birkett, R. Drew, B.K. May and M.E. McManus, eds.), pp. 321-328, Taylor & Francis, London.

208. Lori A. Dostal, Claes Guthenberg, Bengt Mannervik and John R. Bend (1988) Stereoselectivity and regioselectivity of purified human glutathione transferases π, α-ε and μ with alkene and polycyclic arene oxide substrates, Drug Metab. Disp. 16, 420-424.

209. Sven Hammarström, Lars Örning, Kerstin Bernström, Andrea Keppler, Bengt Mannervik and Mats Söderström (1989) Glutathione: a co-substrate for leukotriene C biosynthesis, in "Coenzymes and Cofactors" (D. Dolphin, R. Poulson and O. Avramovic, eds.), Vol. 3B, pp. 357-382, John Wiley & Sons, New York.

210. Bengt Mannervik, Inger Carlberg and Kerstin Larson (1989) Glutathione: general review of mechanism of action, in "Coenzymes and Cofactors" (D. Dolphin, R. Poulson and O. Avramovic, eds.), Vol. 3A, 475-516, John Wiley & Sons, New York.

211. Mohammad K. Tahir, Nazmi Özer and Bengt Mannervik (1988) Isoenzymes of glutathione transferase in rat small intestine, Biochem. J. 253, 759-764.

212. Giovanni B. Principato, U. Helena Danielson and Bengt Mannervik (1988) Relaxed thiol substrate specificity of glutathione transferase effected by a non-substrate glutathione derivative, FEBS Lett. 231, 155-158.

213. Mohammad Kalim Tahir, Claes Guthenberg and Bengt Mannervik (1989) Glutathione transferases in rat hepatoma cells. Effects of ascites cells on the isoenzyme pattern in liver and induction of glutathione transferases in the tumour cells, Biochem. J. 257, 215-220.

214. Gian Maria Pacifici, Margareta Warholm, Claes Guthenberg, Bengt Mannervik and Anders Rane (1987) Detoxification of styrene oxide by human liver glutathione transferase, Human Toxicol. 6, 483-489.

215. Bengt Jernström, Iain G.C. Robertson, Bengt Mannervik and Lennart Dock (1988) Enzymatic detoxication of tumorigenic bay-region diol-epoxides of polycyclic aromatic hydrocarbons by conjugation with glutathione, in "Chemical Carcinogenesis: Models and Mechanisms" (F. Feo, P. Pano, A. Columbano and R. Garcea, eds.), pp. 67-73, Plenum Press, New York.

216. Bengt Jernström, Lennart Dock, M. Hall, Bengt Mannervik, Mohammad K. Tahir and P.L. Grover (1989) Glutathione transferase catalyzed conjugation of benzo(*a*)pyrene 7,8-diol-9,10-epoxide with glutathione in human skin, Chem.-Biol. Interact. 70, 173-180.

217. Martyn T. Smith, Celia G. Evans, Penelope Doane-Setzer, Victor M. Castro, M. Kalim Tahir and Bengt Mannervik (1989) Denitrosation of 1,3-bis(2-chloroethyl)-1-nitrosourea by class Mu glutathione transferases and its role in cellular resistance in rat brain tumor cells, Cancer Res. 49, 2621-2625.

218. M. Quamrul Islam, Anton Platz, Josiane Szpirer, Claude Szpirer, Göran Levan and Bengt Mannervik (1989) Chromosomal localization of human glutathione transferase genes of classes Alpha, Mu and Pi, Hum. Genet. 82, 338-342.

219. Sandra W. Cowan, Terese Bergfors, T. Alwyn Jones, Gudrun Tibbelin, Birgit Olin, Philip G. Board and Bengt Mannervik (1989) Crystallization of GST2, a human class Alpha glutathione transferase, J. Mol. Biol. 208, 369-370.

220. Bengt Mannervik, Mikael Widersten, Philip G. Board (1989) Glutathione-linked enzymes in detoxication reactions, in "Glutathione Centennial: Molecular Perspectives and Clinical Implications" (N. Taniguchi, T. Higashi, Y. Sakamoto and A. Meister, eds.), pp. 23-34, Academic Press, San Diego.

221. David J. Meyer, Eoin Lalor, Brian Coles, Andreas Kispert, Per Ålin, Bengt Mannervik and Brian Ketterer (1989) Single-step purification and HPLC analysis of glutathione transferase 8-8 in rat tissues, Biochem. J. 260, 785-788.

222. Paolo Di Simplicio, Helgi Jensson and Bengt Mannervik (1989) Effects of inducers of drug metabolism on basic hepatic forms of mouse glutathione transferase, Biochem. J. 263, 679-685.

223. Mats Söderström, Bengt Mannervik and Sven Hammarström (1990) Leukotriene C_4 synthase: characterization in mouse mastocytoma cells, Methods Enzymol. 187, 306-312.

224. Kiflu Berhane and Bengt Mannervik (1990) Inactivation of the genotoxic aldehyde acrolein by human glutathione transferases of classes Alpha, Mu and Pi, Mol. Pharmacol. 37, 251-254.

225. Bengt Mannervik, Philip G. Board, Kiflu Berhane, Robert Björnestedt, Victor M. Castro, U. Helena Danielson, Xiao-Yong Hao, Rüdiger Kolm, Birgit Olin, Giovanni B. Principato, Marianne Ridderström, Gun Stenberg and Mikael Widersten (1990) Classes of glutathione transferases. Structural and catalytic properties of the enzymes, in "Glutathione S-Transferases and Drug Resistance" (J.D. Hayes, C.B. Pickett and T.J. Mantle, eds.), pp. 35-46, Taylor & Francis, London.

226. Louise Mankowitz, Victor M. Castro, Bengt Mannervik, Jan Rydström and Joseph W. DePierre (1990) Increase in the amount of glutathione transferase 4-4 in the rat adrenal gland after hypophysectomy and down-regulation by subsequent treatment with adrenocorticotropic hormone, Biochem. J. 265, 147-154.

227. Bengt Mannervik (1990) The role of glutathione transferases in the cellular resistance to electrophilic compounds produced by biological oxidations, in "Biological Oxidation Systems" (C.C. Reddy, G.A. Hamilton and K.M. Madyastha, eds.), Vol. I, pp. 515-526, Academic Press, New York.

228. Victor M. Castro, Mats Söderström, Inger Carlberg, Mikael Widersten, Anton Platz and Bengt Mannervik (1990) Differences among human tumor cell lines in the expression of glutathione transferases and other glutathione-linked enzymes, Carcinogenesis 11, 1569-1576.

229. Johan Hansson, Kiflu Berhane, Victor M. Castro, Ulf Jungnelius, Bengt Mannervik and Ulrik Ringborg (1991) Sensitization of human melanoma cells to the cytotoxic effect of melphalan by the glutathione transferase inhibitor ethacrynic acid, Cancer Res. 51, 94-98.

230. Ulf Tidefelt, Annika Elmhorn-Rosenborg, Christer Paul, Xiao-Yong Hao, Bengt Mannervik and Lennart C. Eriksson (1992) Expression of glutathione transferase π as a predictor for treatment results at different stages of acute nonlymphoblastic leukemia, Cancer Res. 52, 3281-3285.

231. Thomas C. Shea, Ginger Claflin, Kenine E. Comstock, Barbara J.S. Sanderson, Nelson A. Burstein, Edward J. Keenan, Bengt Mannervik and W. David Henner (1990) Glutathione transferase activity and isoenzyme composition in primary human breast cancers, Cancer Res. 50, 6848-6853.

232. Louise Mankowitz, Joseph W. DePierre, Bengt Mannervik and Hans-Arne Hansson (1991) Immunohistochemical distribution of isoenzymes of glutathione transferase in adult rat adrenal gland before and after hypophysectomy. Biochem. J. 280, 399-405.

233. Gun Stenberg, Philip G. Board, Inger Carlberg and Bengt Mannervik (1991) Effects of directed mutagenesis on conserved arginine residues in a human class Alpha glutathione transferase, Biochem. J. 274, 549-555.

234. Philip G. Board and Bengt Mannervik (1991) The contribution of the *C*-terminal sequence to the catalytic activity of GST2, a human Alpha-class glutathione transferase, Biochem. J. 275, 171-174.

235. Mats Söderström, Bengt Mannervik, Vladimir Garkov and Sven Hammarström (1992) On the nature of leukotriene C synthase in human platelets, Arch. Biochem. Biophys. 294, 70-74.

236. Bengt Mannervik, Kiflu Berhane, Victor M. Castro, Birgit Olin, Marianne Ridderström, Rita Vignani, John W. Kozarich and Ulrik Ringborg (1991) Glutathione-linked enzymes in normal and tumor cells and their role in resistance against genotoxic agents, in "Xenobiotics and Cancer" (Ernster, L., Esumi, H., Fujii, Y., Gelboin, H.V., Kato, R. and Sugimura, T., eds.), pp. 253-262, Japan Sci. Soc. Press, Tokyo/Taylor & Francis Ltd., London.

237. B. Mannervik (1991) Differential expression of glutathione transferase isoenzymes and its significance for cellular resistance to toxic chemical substances, in "Hepatic Metabolism and Disposition of Endo- and Xenobiotics" (K.W. Bock, W. Gerok S. Matern and R. Schmid, eds.), pp. 229-236, Kluwer Academic Publ., Dordrecht.

238. Mikael Widersten, William R. Pearson, Åke Engström and Bengt Mannervik (1991) Heterologous expression of the allelic variant Mu-class glutathione transferase μ and ψ, Biochem. J. 276, 519-524.

239. Siv Sellin, Barton Holmquist, Bengt Mannervik and Bert L. Vallee (1991) Oxidation and reduction of 4-hydroxyalkenals catalyzed by isozymes of human alcohol dehydrogenase, Biochemistry 30, 2514-2518.

240. Gun Stenberg, Philip G. Board and Bengt Mannervik (1991) Mutation of an evolutionarily conserved tyrosine residue in the active site of a human class Alpha glutathione transferase, FEBS Lett. 293, 153-155.

241. Mikael Widersten, Eva Holmström and Bengt Mannervik (1991) Cysteine residues are not essential for the catalytic activity of human class Mu glutathione transferase M1a-1a, FEBS Lett. 293, 156-159.

242. Bengt Jernström, Albrecht Seidel, Mario Funk, Franz Oesch and Bengt Mannervik (1992) Glutathione conjugation of *trans*-3,4-dihydroxy 1,2-epoxy 1,2,3,4-tetrahydro-benzo[*c*]phenanthrene isomers by human glutathione transferases, Carcinogenesis 13, 1549-1555.

243. Robert Björnestedt, Mikael Widersten, Philip G. Board and Bengt Mannervik (1992) Design of two chimaeric human-rat class Alpha glutathione transferases for probing the contribution of *C*-terminal segments of protein structure to the catalytic properties, Biochem. J. 282, 505-510.

244. Gun Stenberg, Marianne Ridderström, Åke Engström, Sally E. Pemble and Bengt Mannervik (1992) Cloning and heterologous expression of cDNA encoding class Alpha rat glutathione transferase 8-8, an enzyme with high catalytic activity towards genotoxic a,ß-unsaturated carbonyl compounds, Biochem. J. 284, 313-319.

245. Bengt Mannervik, Yogesh C. Awasthi, Philip G. Board, John D. Hayes, Carmine Di Ilio, Brian Ketterer, Irving Listowsky, Ralf Morgenstern, Masami Muramatsu, William R. Pearson, Cecil B. Pickett, Kiyomi Sato, Mikael Widersten and C. Roland Wolf (1992) Nomenclature for human glutathione transferases, Biochem. J. 282, 305-306.

246. Louise Staffas, Louise Mankowitz, Mats Söderström, Agneta Blanck, Inger Porsch-Hällström, Carola Sundberg, Bengt Mannervik, Birgit Olin, Jan Rydström and Joseph W. DePierre (1992) Further characterization of hormonal regulation of glutathione transferase in rat liver and adrenal glands. Sex differences and demonstration that growth hormone regulates the hepatic levels, Biochem. J. 286, 65-72.

247. Gun Stenberg, Robert Björnestedt and Bengt Mannervik (1992) Heterologous expression of recombinant human glutathione transferase A1-1 from a hepatoma cell line, Protein Expression Purif. 3, 80-84.

248. Rüdiger H. Kolm, Grazyna E. Sroga and Bengt Mannervik (1992) Participation of the phenolic hydroxyl group of Tyr-8 in the catalytic mechanism of human glutathione transferase P1-1, Biochem. J. 285, 537-540.

249. Rüdiger H. Kolm, Gun Stenberg, Mikael Widersten and Bengt Mannervik (1995) High-level bacterial expression of human glutathione transferase P1-1 encoded by semisynthetic DNA, Protein Expression Purif. 6, 265-271.

250. Mikael Widersten and Bengt Mannervik (1992) A structural role of histidine 15 in human glutathione transferase M1-1, an amino acid residue conserved in class Mu enzymes, Protein Engineer. 5, 551-557.

251. Xiaoqin Shan, Tak Yee Aw, Elizabeth R. Smith, Magnus Ingelman-Sundberg, Bengt Mannervik, Takashi Iyanagi and Dean P. Jones (1992) Effect of chronic hypoxia on detoxication enzymes in rat liver, Biochem. Pharmacol. 43, 2421-2426.

252. Mikael Widersten, Rüdiger H. Kolm, Robert Björnestedt and Bengt Mannervik (1992) Contribution of five amino acid residues in the glutathione-binding site to the function of human glutathione transferase P1-1, Biochem. J. 285, 377-381.

253. Manuel de la Torre, Xiao-Yong Hao, Rolf Larsson, Peter Nygren, Takashi Tsuruo, Bengt Mannervik and Jonas Bergh (1993) Characterization of four doxorubicin adapted human breast cancer cell lines with respect to chemotherapeutic drug sensitivity, drug resistance associated membrane proteins and glutathione transferases, Anticancer Res. 13, 1425-1430.

254. Björn Rozell, Hans-Arne Hansson, Claes Guthenberg, Muhammad Kalim Tahir and Bengt Mannervik (1993) Glutathione transferases of classes Alpha, Mu and Pi show selective expression in different regions of the rat kidney, Xenobiotica 23, 835-849.

255. Irmgard Sinning, Gerard J. Kleywegt, Bengt Mannervik, Philip G. Board and T. Alwyn Jones (1993) The active site in class Alpha glutathione transferases, in "Structure and Function of Glutathione S-Transferases" (K.D. Tew, C.B. Pickett, T.J. Mantle, B. Mannervik and J.D. Hayes, eds.), pp. 75-85, CRC Press, Boca Raton,FL.

256. Bengt Mannervik, Kiflu Berhane, Robert Björnestedt, Philip G. Board, T. Alwyn Jones, Rüdiger H. Kolm, Birgit Olin, Irmgard Sinning, Grazyna E. Sroga, Gun Stenberg, Stefania Tardioli and Mikael Widersten (1993) Structural and functional characterization of the binding sites for glutathione (G-site) and the hydrophobic electrophilic substrate (H-site) in glutathione transferases, in "Structure and Function of Glutathione S-Transferases" (K.D. Tew, C.B. Pickett, T.J. Mantle, B. Mannervik and J.D. Hayes, eds.), pp. 29-38, CRC Press, Boca Raton, FL.

257. Irmgard Sinning, Gerard J. Kleywegt, Sandra W. Cowan, Peter Reinemer, Heini W. Dirr, Robert Huber, Gary L. Gilliland, Richard N. Armstrong, Xinhua Ji, Philip G. Board, Birgit Olin, Bengt Mannervik and T. Alwyn Jones (1993) Structure determination and refinement of human alpha class glutathione transferase A1-1, and a comparison with the mu and pi class enzymes, J. Mol. Biol. 232, 192-212.

258. Kiflu Berhane, Xiao-Yong Hao, Birger Christensson, Johan Hansson, Ulrik Ringborg and Bengt Mannervik (1995) The expression of glutathione transferase isoenzymes in human malignant lymphoma biopsies, Acta Oncol. 34, 35-41.

259. Kiflu Berhane, Mikael Widersten, Åke Engström, John W. Kozarich and Bengt Mannervik (1994) Detoxication of base propenals and other a,b-unsaturated aldehyde products of radical reactions and lipid peroxidation by human glutathione transferases, Proc. Natl. Acad. Sci. USA 91, 1480-1484.

260. Kiflu Berhane, Xiao-Yong Hao, Suzanne Egyházi, Johan Hansson, Ulrik Ringborg and Bengt Mannervik (1993) Contribution of glutathione transferase M3-3 to 1,3-bis(chloroethyl)-1-nitrosourea resistance in a human non-small cell lung cancer cell line, Cancer Res. 53, 4257-4261.

261. Bengt Mannervik and Marianne Ridderström (1993) Catalytic and molecular properties of glyoxalase I, Biochem. Soc. Trans. 21, 515-517.

262. Xiao-Yong Hao, Mikael Widersten, Marianne Ridderström, Ulf Hellman and Bengt Mannervik (1994) Covariation of glutathione transferase expression and cytostatic drug resistance in HeLa cells: establishment of class Mu glutathione transferase M3-3 as the dominating isoenzyme, Biochem. J. 297, 59-67.

263. Karin Klinga-Levan, Agneta Andersson, Charles Hanson, Marianne Ridderström, Gun Stenberg, Bengt Mannervik, Michael Vajdy, Josiane Szpirer, Claude Szpirer and Göran Levan (1993) Mapping of glutathione transferase genes in the rat, Hereditas 119, 285-296.

264. Xiao-Yong Hao, Victor M. Castro, Jonas Bergh, Birgitta Sundström and Bengt Mannervik (1994) Isoenzyme-specific quantitative immunoassays for cytosolic glutathione transferases and measurement of the enzymes in blood plasma from cancer patients and in tumor cell lines, Biochim. Biophys. Acta 1225, 223-230.

265. Xiao-Yong Hao, Jonas Bergh, Ola Brodin, Ulf Hellman and Bengt Mannervik (1994) Acquired resistance to cisplatin and doxorubicin in a small cell lung cancer cell line is correlated to elevated expression of glutathione-linked detoxication enzymes, Carcinogenesis 15, 1167-1173.

266. Ulf Jungnelius, Marianne Ridderström, Johan Hansson, Ulrik Ringborg and Bengt Mannervik (1994) Similar toxic effect of 1,3-bis(chloroethyl)-1-nitrosourea on lymphocytes from human subjects differing in the expression of glutathione transferase M1-1, Biochem. Pharmacol. 47, 1777-1780.

267. Ulf Jungnelius, Xiao-Yong Hao, Sven Skog, Victor M. Castro, Bengt Mannervik and Ulrik Ringborg (1994) Cell cycle dependent sensitivity of human melanoma cells to melphalan is correlated with the activity and cellular concentration of glutathione transferases, Carcinogenesis 15, 99-103.

268. Grigoriy Chaga, Mikael Widersten, Lennart Andersson, Jerker Porath, U. Helena Danielson and Bengt Mannervik (1994) Engineering of a metal coordinating site into human glutathione transferase M1-1 based on immobilized metal ion affinity chromatography of homologous rat enzymes, Protein Engineer. 7, 1115-1119.

269. Raymond J. Cooke, Robert Björnestedt, Kenneth T. Douglas, James H. McKie, Matthew D. King, Brian Coles, Brian Ketterer and Bengt Mannervik (1994) Photoaffinity labelling of the active site of the rat glutathione transferases 3-3 and 1-1 and human glutathione transferase A1-1, Biochem. J. 302, 383-390.

270. Robert Björnestedt, Gun Stenberg, Mikael Widersten, Philip G. Board, Irmgard Sinning, T. Alwyn Jones and Bengt Mannervik (1995) Functional significance of arginine 15 in the active site of human class Alpha glutathione transferase A1-1, J. Mol. Biol. 247, 765-773.

271. Kenine E. Comstock, Mikael Widersten, Xiao-Yong Hao, W. David Henner and Bengt Mannervik (1994) A comparison of the enzymatic and physicochemical properties of human glutathione transferase M4-4 and three other human Mu class enzymes, Arch. Biochem. Biophys. 311, 487-495.

272. Mikael Widersten, Robert Björnestedt and Bengt Mannervik (1994) Contribution of amino acid residue 208 in the hydrophobic binding site to the catalytic mechanism of human glutathione transferase A1-1, Biochemistry 33, 11717-11723.

273. Bengt Mannervik, Mikael Widersten, Robert Björnestedt and Lars O. Hansson (1995) Design of novel glutathione transferases by phage display, in "Perspectives on Protein Engineering and Complementary Technologies" (M. J. Geisow and R. Epton, eds.), pp. 138-142, Mayflower Worldwide Ltd., U.K.

274. Yuesheng Zhang, Rüdiger H. Kolm, Bengt Mannervik and Paul Talalay (1995) Reversible conjugation of isothiocyanates with glutathione catalyzed by human glutathione transferases, Biochem. Biophys. Res. Commun. 206, 748-755.

275. Bengt Mannervik and Mikael Widersten (1995) Human glutathione transferases: classification, tissue distribution, structure, and functional properties, in "Advances in Drug Metabolism in Man" (G. M. Pacifici and G.N. Fracchia, eds.), pp. 407-459, European Commission, Luxembourg.

276. Mikael Widersten and Bengt Mannervik (1995) Glutathione transferases with novel active sites isolated by phage display from a library of random mutants, J. Mol. Biol. 250, 115-122.

277. Alexander D. Cameron, Irmgard Sinning, Guillaume L'Hermite, Birgit Olin, Philip G. Board, Bengt Mannervik and T. Alwyn Jones (1995) Structural analysis of human alpha-class glutathione transferase A1-1 in the apo-form and in complexes with ethacrynic acid and its glutathione conjugate, Structure 3, 717-727.

278. Manuel de la Torre, Rolf Larsson, Peter Nygren, Anders Lindgren, Xiao-Yong Hao, Bengt Mannervik and Jonas Bergh (1996) Differential expression of glutathione S-transferase Pi in normal, preneoplastic and neoplastic human breast tissue, Cell Vision. J. Analyt. Morphol. 3, 11-15.

279. Anton Platz, Ulf Jungnelius, Eva Grafström, Bengt Lagerlöf, Bengt Mannervik and Ulrik Ringborg (1995) Glutathione transferase P1-1 expression in human melanoma metastases: correlation to N-RAS mutations and expression, Acta Oncol. 34, 759-765.

280. Johan Hansson, Margareta R. Edgren, Suzanne Egyházi, Xiao-Yong Hao, Bengt Mannervik and Ulrik Ringborg (1996) Increased cisplatin sensitivity of human fibroblasts from a subject with inherent glutathione deficiency, Acta Oncol. 35, 683-690.

281. Fanyi Jiang, Ulf Hellman, Grazyna E. Sroga, Birgitta Bergman and Bengt Mannervik (1995) Cloning, sequencing, and regulation of the glutathione reductase gene from the cyanobacterium *Anabaena* PCC 7120, J. Biol. Chem. 270, 22882-22889.

282. Rüdiger H. Kolm, U. Helena Danielson, Yuesheng Zhang, Paul Talalay and Bengt Mannervik (1995) Isothiocyanates as substrates for human glutathione transferases: structure-activity studies, Biochem. J. 311, 453-459.

283. Robert Björnestedt, Stefania Tardioli and Bengt Mannervik (1995) The high activity of rat glutathione transferase 8-8 with alkene substrates is dependent on a glycine residue in the active site, J. Biol. Chem. 270, 29705-29709.

284. Marianne Ridderström and Bengt Mannervik (1996) Optimized heterologous expression of the human zinc enzyme glyoxalase I, Biochem. J. 314, 463-467.

285. Marianne Ridderström, Franca Saccucci, Ulf Hellman, Tomas Bergman, Giovanni Principato and Bengt Mannervik (1996) Molecular cloning, heterologous expression and characterization of human glyoxalase II, J. Biol. Chem. 271, 319-323.

286. Selma Yilmaz, Mikael Widersten, Tesfai Emahazion and Bengt Mannervik (1995) Generation of a Ni(II) binding site by introduction of a histidine cluster in the structure of human glutathione transferase A1-1, Prot. Engineer. 8, 1163-1169.

287. Bengt Mannervik, Robert Björnestedt, Eva Davey, Tesfai Emahazion, Eleanor Fernandez, Lars O. Hansson, Rüdiger H. Kolm, Lisa O. Nilsson, Birgit Olin, Gun Stenberg, Stefania Tardioli, Mikael Widersten and Selma Yilmaz (1996) Glutathione transferases with novel properties generated by protein engineering and phage display, in "Glutathione S-Transferases: Structure, Function and Clinical Implications" (N.P.E. Vermeulen, G.J. Mulder, H. Niewenhuyse, W.H.M. Peters, and P.J. van Bladeren, eds.), pp. 3-11, Taylor & Francis, London.

288. Bengt Jernström, Bengt Mannervik, Mario Funk and Albrecht Seidel (1996) Glutathione transferase A1-1 catalyzed conjugation of polycyclic aromatic hydrocarbon diol-epoxides with glutathione, Polycyclic Aromatic Compounds 10, 51-57.

289. Per Jemth, Gun Stenberg, Grigoriy Chaga and Bengt Mannervik (1996) Heterologous expression, purification and characterization of rat class Theta glutathione transferase T2-2, Biochem. J. 316, 131-136.

290. Mikael Widersten, Mao Huang and Bengt Mannervik (1996) Optimized heterologous expression of the polymorphic human glutathione transferase M1-1 based on silent mutations in the corresponding cDNA, Protein Expression Purif. 7, 367-372.

291. Alexander D. Cameron, Birgit Olin, Marianne Ridderström, Bengt Mannervik and T. Alwyn Jones (1997) Crystal structure of human glyoxalase I - evidence for gene duplication and 3D domain swapping, EMBO J. 16, 3386-3395.

292. Bengt Jernström, Mario Funk, Heinrich Frank, Bengt Mannervik and Albrecht Seidel (1996) Glutathione S-transferase A1-1- catalysed conjugation of bay and fjord region diol epoxides of polycyclic aromatic hydrocarbons with glutathione, Carcinogenesis 17, 1491-1498.

293. Suzanne Egyházi, Margareta R. Edgren, Johan Hansson, Doris Kröckel, Bengt Mannervik and Ulrik Ringborg (1997) Role of O^6-methylguanine-DNA methyltransferase, glutathione transferase M3-3 and glutathione in resistance to carmustine in a human non-small cell lung cancer cell line, Eur. J. Cancer 33, 447-452.

294. Mikael Widersten, Robert Björnestedt and Bengt Mannervik (1996) Involvement of the carboxyl groups of glutathione in the catalytic mechanism of human glutathione transferase A1-1, Biochemistry 35, 7731-7742.

295. Bengt Mannervik (1996) Evolution of glutathione transferases and related enzymes for the protection of cells against electrophiles, Biochem. Soc. Trans. 24, 878-880.

296. Marianne Ridderström and Bengt Mannervik (1996) The primary structure of monomeric yeast glyoxalase I indicates a gene duplication resulting in two similar segments homologous to the subunit of dimeric human glyoxalase I, Biochem. J. 316, 1005-1006.

297. Marianne Ridderström and Bengt Mannervik (1997) Molecular cloning and characterization of the thiolesterase glyoxalase II from *Arabidopsis thaliana*, Biochem. J. 322, 449-454.

298. Juan Segura-Aguilar, Sofia Baez, Mikael Widersten, Christopher J. Welch and Bengt Mannervik (1997) Human class Mu glutathione transferases, in particular isoenzyme M2-2, catalyze detoxication of the dopamine metabolite aminochrome, J. Biol. Chem. 272, 5727-5731.

299. Fanyi Jiang, Bengt Mannervik and Birgitta Bergman (1997) Evidence for redox regulation of the transcription factor NtcA, acting both as an activator and a repressor, in the cyanobacterium *Anabaena* PCC 7120, Biochem. J. 327, 513-517.

300. William W. Johnson, Yune-Fang Ueng, Mikael Widersten, Bengt Mannervik, John D. Hayes, Philip J. Sherratt, Brian Ketterer and F. Peter Guengerich (1997) Conjugation of highly reactive aflatoxin B_1 *exo*-8,9-epoxide catalyzed by rat and human glutathione transferases: estimation of kinetic parameters, Biochemistry 36, 3056-3060.

301. Robyn M. Bolton, Linda Curstedt, Ella Cederlund, Lars Hjelmqvist, Bengt Mannervik, Jorma T. Ahokas and Hans Jörnvall (1997) Characterization of a marsupial glutathione transferase, a class Alpha enzyme from Brown Antechinus (*Antechinus stuartii*), FEBS Lett. 406, 216-219.

302. Sofia Baez, Juan Segura-Aguilar, Mikael Widersten, Ann-Sofie Johansson and Bengt Mannervik (1997) Glutathione transferases catalyse the detoxication of oxidized metabolites (*o*-quinones) of catecholamines and may serve as an antioxidant system preventing degenerative cellular processes, Biochem. J. 324, 25-28.

303. Lars O. Hansson, Mikael Widersten and Bengt Mannervik (1997) Mechanism-based phage display selection of active-site mutants of human glutathione transferase A1-1 catalyzing S_NAr reactions, Biochemistry 36, 11252-11260.

304. Marianne Ridderström, Alexander D. Cameron, T. Alwyn Jones and Bengt Mannervik (1997) Mutagenesis of residue 157 in the active site of human glyoxalase I, Biochem. J. 328, 231-235.

305. Niklas Dahl, Maritta Pigg, Ellinor Ristoff, Rayappa Gali, Birgit Carlsson, Bengt Mannervik, Agne Larsson and Philip Board (1997) Missense mutations in the human glutathione synthetase gene result in severe metabolic acidosis, 5-oxoprolinuria, hemolytic anemia and neurological dysfunction, Human Mol. Genetics 6, 1147-1152.

306. Yongping Bao, Per Jemth, Bengt Mannervik and Gary Williamson (1997) Reduction of thymine hydroperoxide by phospholipid hydroperoxidase, glutathione peroxidase and glutathione transferases, FEBS Lett. 410, 210-212.

307. Marianne Ridderström, Alexander D. Cameron, T. Alwyn Jones and Bengt Mannervik (1998) Involvement of an active-site-Zn^{2+} ligand in the catalytic mechanism of human glyoxalase I, J. Biol. Chem. 273, 21623-21628.

308. Kathrin Sundberg, Mikael Widersten, Albrecht Seidel, Bengt Mannervik and Bengt Jernström (1997) Glutathione conjugation of bay- and fjord-region diol epoxides of polycyclic aromatic hydrocarbons by glutathione transferases M1-1 and P1-1, Chem. Res. Toxicol.10, 1221-1227.

309. Kathrin Sundberg, Ann-Sofie Johansson, Gun Stenberg, Mikael Widersten, Albrecht Seidel, Bengt Mannervik and Bengt Jernström (1998) Differences in the catalytic efficiencies of allelic variants of glutathione transferase P1-1 towards carcinogenic diol epoxides of polycyclic aromatic hydrocarbons, Carcinogenesis 19, 433-436.

310. Beatrice Dragani, Gun Stenberg, Sonia Melino, Raffaele Petruzzelli, Bengt Mannervik and Antonio Aceto (1997) The conserved N-capping box in the hydrophobic core of glutathione S-transferase P1-1 is essential for refolding - Identification of a buried and conserved hydrogen bond important for protein stability, J. Biol. Chem. 272, 25518-25523.

311. Rachel Hurst, Yongping Bao, Per Jemth, Bengt Mannervik and Gary Williamson (1997) Phospholipid hydroperoxide glutathione peroxidase activity of rat class theta glutathione transferase T2-2, Biochem. Soc. Trans. 25, S559.

312. Per Jemth and Bengt Mannervik (1997) Kinetic characterization of recombinant human glutathione transferase T1-1, a polymorphic detoxication enzyme, Arch. Biochem. Biophys. 348, 247-254.

313. Ina Hubatsch, Marianne Ridderström and Bengt Mannervik (1998) Human glutathione transferase A4-4: an Alpha class enzyme with high catalytic efficiency in the conjugation of 4-hydroxynonenal and other genotoxic products of lipid peroxidation, Biochem. J. 330, 175-179.

314. Rachel Hurst, Yongping Bao, Per Jemth, Bengt Mannervik and Gary Williamson (1998) Phospholipid hydroperoxide glutathione peroxidase activity of human glutathione transferases, Biochem. J. 332, 97-100.

315. Ann-Sofie Johansson, Gun Stenberg, Mikael Widersten and Bengt Mannervik (1998) Structure-activity relationships and thermal stability of human glutathione transferase P1-1 governed by the H-site residue 105, J. Mol. Biol.278, 687-698.

316. Jon S. Thorson, Injae Shin, Eli Chapman, Gun Stenberg, Bengt Mannervik and Peter G. Schultz (1998) Analysis of the role of the active site tyrosine in human glutathione transferase A1-1 by unnatural amino acid mutagenesis, J. Am. Chem. Soc. 120, 451-452.

317. Bengt Mannervik, Alexander D. Cameron, Eleanor Fernandez, Ann Gustafsson, Lars O. Hansson, Per Jemth, Fanyi Jiang, T. Alwyn Jones, Anna-Karin Larsson, Lisa O. Nilsson, Birgit Olin, Pär L. Pettersson, Marianne Ridderström, Gun Stenberg and Mikael Widersten (1998) An evolutionary approach to the design of glutathione-linked enzymes, Chem.-Biol. Interact. 111-112,15-21.

318. Fanyi Jiang and Bengt Mannervik (1999) Optimized heterologous expression of glutathione reductase from cyanobacterium *Anabaena* PCC 7120 and characterization of the recombinant protein, Protein Expression Purif. 15, 92-98.

319. Amy. S. Morgan, Polly E. Sanderson, Richard F. Borch, Kenneth D. Tew, Yoshiro Niitsu, Tetsuji Takayama, Daniel D. Von Hoff, Elzbieta Izbicka, Gina Mangold, Christer Paul, Ulrika Broberg, Bengt Mannervik, W. David Henner and Lawrence M. Kauvar (1998) Tumor efficacy and bone marrow-sparing properties of TER286, a cytotoxin activated by glutathione S-transferase, Cancer Res. 58, 2568-2575.

320. Christopher M. Bruns, Ina Hubatsch, Marianne Ridderström, Bengt Mannervik and John A. Tainer (1999) Human glutathione transferase A4-4 crystal structures and mutagenesis reveal the basis of high catalytic efficiency with toxic lipid peroxidation products, J. Mol. Biol. 288, 427-439.

321. Katrin Sundberg, Albrecht Seidel, Bengt Mannervik and Bengt Jernström (1998) Detoxication of carcinogenic fjord-region diol epoxides of polycyclic aromatic hydrocarbons by glutathione transferase P1-1 variants and glutathione, FEBS Lett. 438, 206-210.

322. Bengt Mannervik, Maryam Etahadieh, Eleanor Fernandez, Ann Gustafsson, Lars O. Hansson, Ina Hubatsch, Per Jemth, Ann-Sofie Johansson, Anna-Karin Larsson, Lisa O. Nilsson, Birgit Olin, Marianne Ridderström, Gun Stenberg, Lisa Tronstad and Mikael Widersten (1999) Novel natural substrates and novel isoenzymes of glutathione transferase, Clin. Chem. Enzymol. Commun. 8, 189-202.

323. Lars O. Hansson, Robyn Bolton-Grob, Tahereh Massoud and Bengt Mannervik (1999) Evolution of differential substrate specificities in Mu class glutathione transferases probed by DNA shuffling, J. Mol. Biol. 287, 265-276.

324. Alexander D. Cameron, Marianne Ridderström, Birgit Olin, Malcolm J. Kavarana, Donald J. Creighton and Bengt Mannervik (1999) Reaction mechanism of glyoxalase I explored by an X-ray crystallographic analysis of the human enzyme in complex with a transition state analogue, Biochemistry 38, 13480-13490.

325. Ann Gustafsson and Bengt Mannervik (1999) Benzoic acid derivatives induce recovery of catalytic activity in the partially inactive Met208Lys mutant of human glutathione transferase A1-1, J. Mol. Biol. 288, 787-800.

326. U. Helena Danielson, Fanyi Jiang, Lars O. Hansson and Bengt Mannervik (1999) Probing the kinetic mechanism and coenzyme specificity of glutathione reductase from the cyanobacterium *Anabaena* PCC 7120 by redesign of the pyridine-nucleotide binding site, Biochemistry 38, 9254-9263.

327. Bengt Mannervik (1999) Glutathione transferase, in "Encyclopedia of Molecular Biology" (T.E Creighton, ed.), pp. 1025-1030, John Wiley & Sons, New York.

328. Ann-Sofie Johansson, Robyn Bolton-Grob and Bengt Mannervik (1999) Use of silent mutations in cDNA encoding human glutathione transferase M2-2 for optimized expression in *Escherichia coli*, Protein Expression Purif. 17, 105-112.

329. Lars O. Hansson, Mikael Widersten and Bengt Mannervik (1999) An approach to optimizing the active site in a glutathione transferase by evolution *in vitro*, Biochem. J. 344, 93-100.

330. Per Jemth and Bengt Mannervik (1999) Fast product formation and slow product release are important features in a hysteretic reaction mechanism of glutathione transferase T2-2, Biochemistry 38, 9982-9991.

331. Beatrice Dragani, Roberta Cocco, Marianne Ridderström, Gun Stenberg, Bengt Mannervik and Antonio Aceto (1999) Unfolding and refolding of human glyoxalase II and its single-tryptophan mutants, J. Mol. Biol. 291, 481-490.

332. Susanne Wisén, Fanyi Jiang, Birgitta Bergman and Bengt Mannervik (1999) Expression and purification of the transcription factor NtcA from the cyanobacterium *Anabaena* PCC 7120, Protein Expression Purif. 17, 351-357.

333. Ann Gustafsson, Maryam Etahadieh, Per Jemth and Bengt Mannervik (1999) The C-terminal region of human glutathione transferase A1-1 affects the rate of glutathione binding and the ionization of the active-site Tyr9, Biochemistry 38, 16268-16275.

334. Lars O. Hansson, Robyn Bolton-Grob, Mikael Widersten and Bengt Mannervik (1999) Structural determinants in domain II of human glutathione transferase M2-2 govern the characteristic activities with aminochrome, 2-cyano-1, 3-dimethyl-1-nitrosoguanidine and 1,2-dichloro-4-nitrobenzene, Protein Sci. 8, 2742-2750.

335. Alexander D. Cameron, Marianne Ridderström, Birgit Olin and Bengt Mannervik (1999) Crystal structure of human glyoxalase II and its complex with a glutathione thiolester substrate analogue, Structure Folding & Design 7, 1067-1078.

336. Bengt Mannervik (1999) Measurement of glutathione reductase activity, in "Current Protocols in Toxicology" (M.D. Maines, L.G. Costa, D.J. Reed, S. Sassa, and I.G. Sipes, eds.), pp. 7.2.1-7.2.4, John Wiley & Sons, New York.

337. Bengt Mannervik and Per Jemth (1999) Measurement of glutathione transferases, in "Current Protocols in Toxicology" (M.D. Maines, L.G. Costa, D.J. Reed, S. Sassa, and I.G. Sipes, eds.), pp. 6.4.1-6.4.10, John Wiley & Sons, New York.

338. Ann-Sofie Johansson, Marianne Ridderström and Bengt Mannervik (2000) The human glutathione transferase P1-1 specific inhibitor TER 117 designed for overcoming cytostatic-drug resistance is also a strong inhibitor of glyoxalase I, Mol. Pharmacol 57, 619-624.

339. Kathrin Sundberg, Albrecht Seidel, Bengt Mannervik and Bengt Jernström (1999) Catalytic efficiency of glutathione transferase P1-1 variant towards bay- and fjord-region diol epoxides of polycyclic aromatic hydrocarbons, Polycycl. Aromatic Compounds 17, 43-51.

340. Gun Stenberg, Beatrice Dragani, Roberta Cocco, Bengt Mannervik and Antonio Aceto (2000) A conserved "hydrophobic staple motif" plays a crucial role in the refolding of human glutathione transferase P1-1, J. Biol. Chem. 275, 10421-10428.

341. Lars O. Hansson and Bengt Mannervik (2000) Use of chimeras generated by DNA shuffling: Probing structure-function relationships among glutathione transferases, Meth. Enzymol. 328, 463-477.

342. Mikael Widersten, Lars O. Hansson, Lisa Tronstad and Bengt Mannervik (2000) Use of phage display and transition-state analogs to select enzyme variants with altered catalytic properties: Glutathione transferase as an example, Meth. Enzymol. 328, 389-404.

343. Per Jemth and Bengt Mannervik (2000) Active site serine promotes stabilization of the reactive glutathione thiolate in rat glutathione transferase T2-2. Evidence against proposed sulfatase activity of the corresponding human enzyme. J. Biol. Chem. 275, 8618-8624.

344. Gun Stenberg, Abdel-Monem Abdalla and Bengt Mannervik (2000) Tyrosine 50 at the subunit interface of dimeric human glutathione transferase P1-1 is a structural key residue for modulating protein stability and catalytic function, Biochem. Biophys. Res. Commun. 271, 59-63.

345. Runa Njålsson, Katarina Carlsson, Birgit Olin, Birgit Carlsson, Lel Whitbread, Galina Polekhina, Michael W. Parker, Svante Norgren, Bengt Mannervik, Philip G. Board and Agne Larsson (2000) Kinetic properties of missense mutations in patients with glutathione synthetase deficiency, Biochem. J. 349, 275-279.

346. Fanyi Jiang, Susanne Wisén, Mikael Widersten, Birgitta Bergman and Bengt Mannervik (2000) Examination of the transcription factor NtcA-binding motif by *in vitro* selection of DNA sequences from a random library, J. Mol. Biol. 301, 783-793.

347. Marianne Ridderström, Per Jemth, Alexander D. Cameron and Bengt Mannervik (2000) The active-site residue Tyr-175 in human glyoxalase II contributes to binding of glutathione derivatives, Biochim. Biophys. Acta 1481, 344-348.

348. Jamie Rossjohn, William J. McKinstry, Aaron J. Oakley, Michael W. Parker, Gun Stenberg, Bengt Mannervik, Beatrice Dragani, Roberta Cocco and Antonio Aceto (2000) Structures of thermolabile mutants of human glutathione transferase P1-1, J. Mol. Biol. 302, 295-302.

349. Ann-Sofie Johansson and Bengt Mannervik (2001) Interindividual variability of glutathione transferase expression, in "Interindividual Variability in Human Drug Metabolism" (G.M. Pacifici and O. Pelkonen, eds.), pp. 460-519, Taylor & Francis, London.

350. Lisa O. Nilsson, Ann Gustafsson and Bengt Mannervik (2000) Redesign of substrate-selectivity determining modules of glutathione transferase A1-1 installs high catalytic efficiency with toxic alkenal products of lipid peroxidation, Proc. Natl. Acad. Sci. USA 97, 9408-9412.

351. Alexies Dagnino-Subiabre, Bruce K. Cassels, Sofia Baez, Ann-Sofie Johansson, Bengt Mannervik and Juan Segura-Aguilar (2000) Glutathione transferase M2-2 catalyzes conjugation of dopamine and dopa *o*-quinones, Biochem. Biophys. Res. Commun. 274, 32-36.

352. Pär L. Pettersson and Bengt Mannervik (2001) The role of glutathione in the isomerization of Δ^5-androstene-3,17-dione catalyzed by human glutathione transferase A1-1, J. Biol. Chem. 276, 11698-11704.

353. Marianne Ridderström and Bengt Mannervik (2002) Glyoxalases I and II, in "Encyclopedia of Molecular Medicine" (T.E. Creighton, ed.), pp. 1504-1507, Wiley, New York.

354. Bengt Mannervik (2002) Glutathione peroxidase, in "Encyclopedia of Molecular Medicine" (T.E. Creighton, ed.), pp. 1470-1471, Wiley, New York.

355. Bengt Mannervik (2002) Glutathione transferase, in "Encyclopedia of Molecular Medicine" (T.E. Creighton, ed.), pp. 1477-1479, Wiley, New York.

356. Eva-Maria Frickel, Per Jemth, Mikael Widersten and Bengt Mannervik (2001) Yeast glyoxalase I is a monomeric enzyme with two active sites, J. Biol. Chem. 276, 1845-1849.

357. Stanley Mukanganyama, Mikael Widersten, Yogeshkumar S. Naik, Bengt Mannervik and Julia A. Hasler (2002) Inhibition of glutathione S-transferases by antimalarial drugs - possible implications for circumventing anticancer drug resistance, Intern. J. Cancer 97, 700-705.

358. Ina Hubatsch and Bengt Mannervik (2001) A highly acidic tyrosine 9 and a normally titrating tyrosine 212 contribute to the catalytic mechanism of human glutathione transferase A4-4. Biochem. Biophys. Res. Commun. 280, 878-882.

359. Bengt Mannervik (2001) Glutathione transferases in the protection against ortho-quinones and other products of oxidative cellular processes, in "Mechanisms of Degeneration and Protection of the Dopaminergic System" (J.Segura-Aguilar, ed.), pp. 277-287, FP Graham Publishing Co., Johnson City, TN.

360. Stanley Mukanganyama, Yogeshkumar S. Naik, Mikael Widersten, Bengt Mannervik and Julia A. Hasler (2001) Proposed reductive metabolism of artemisinin by glutathione transferases *in vitro*, Free Rad. Res. 35, 427-434.

361. Bengt Mannervik, Robyn Bolton-Grob, Alexander D. Cameron, Maryam Etahadieh, Ann Gustafsson, Lars O. Hansson, Ina Hubatsch, Per Jemth, Ann-Sofie Johansson, T. Alwyn Jones, Anna-Karin Larsson, Lisa O. Nilsson, Birgit Olin, Pär L. Pettersson, Marianne Ridderström, Gun Stenberg, Mikael Widersten, Susanne Wisén (2001) Evolutionary design of glutathione-linked proteins *in vivo* and *in vitro* based on sampling of modules from pre-existing structures, Chem.-Biol. Interact. 133, 3-6.

362. Beatrice Dragani, Gun Stenberg, Roberta Cocco, Bengt Mannervik and Antonio Aceto (2001) Role of conserved local motifs in folding and stability of GST P1-1, Chem.-Biol. Interact. 133, 17-18.

363. Gun Stenberg, Abdel-Monem Abdallah and Bengt Mannervik (2001) The dimeric state of glutathione transferases: role of a key residue at the subunit interface in human GST P1-1, Chem.-Biol. Interact. 133, 24-27.

364. Gun Stenberg, Beatrice Dragani, Roberta Cocco, D. Rossi Principe, Bengt Mannervik and Antonio Aceto (2001) A conserved "hydrophobic staple motif" plays a crucial role in the refolding of human glutathione transferase P1-1, Chem.-Biol. Interact. 133, 49-50.

365. James L. Gardner, Theo K. Bammler, Bengt Mannervik, Evan P. Gallagher (2001) Characterization of a peptide antibody toward hGST A4-4, Chem.-Biol. Interact. 133, 63-67.

366. Per Jemth and Bengt Mannervik (2001) Ser11 plays several roles in the catalytic mechanism of rat glutathione transferase T2-2, Chem.-Biol. Interact. 133, 178-181.

367. Pär L. Pettersson and Bengt Mannervik (2001) The isomerization of □^{5}-androstene-3,17-dione catalyzed by human glutathione transferase A1-1, Chem.-Biol. Interact. 133, 196-199.

368. Lisa O. Nilsson, Ann Gustafsson, Ina Hubatsch and Bengt Mannervik (2001) Structural basis for 4-hydroxyalkenal activity in human glutathione transferase A4-4, Chem.-Biol. Interact. 133, 360-363.

369. Ann Gustafsson, Pär L. Pettersson, Leif Grehn, Per Jemth and Bengt Mannervik (2001) Role of the glutamyl α-carboxylate of the substrate glutathione in the catalytic mechanism of human glutathione transferase A1-1, Biochemistry 40, 15835-15845.

370. Ann Gustafsson, Lisa O. Nilsson and Bengt Mannervik (2002) Hybridization of Alpha class subunits generating a functional glutathione transferase A1-4 heterodimer, J. Mol. Biol. 316, 395-406.

371. Samantha Lien, Ann Gustafsson, Anna-Karin Andersson and Bengt Mannervik (2001) Human glutathione transferase A1-1 demonstrates both half-of-the-sites and all-of-the-sites reactivity, J. Biol. Chem. 276, 35599-35605.

372. Abdel-Monem Abdalla, Christopher M. Bruns, John A. Tainer, Bengt Mannervik and Gun Stenberg (2002) Design of a monomeric human glutathione transferase GSTP1, a structurally stable but catalytically inactive protein, Protein Engineer. 15, 827-834.

373. Ann-Sofie Johansson and Bengt Mannervik (2001) Human glutathione transferase A3-3, a highly efficient catalyst of double-bond isomerization in the biosynthetic pathway of steroid hormones, J. Biol. Chem. 276, 33061-33065.

374. Samantha Lien, Anna-Karin Larsson and Bengt Mannervik (2002) The polymorphic human glutathione transferase T1-1, the most efficient glutathione transferase in the denitrosation and inactivation of the anticancer drug 1,3-bis(2-chloroethyl)-1-nitrosourea, Biochem. Pharmacol. 63, 191-197.

375. Lisa O. Nilsson and Bengt Mannervik (2001) Improved heterologous expression of human glutathione transferase A4-4 by random silent mutagenesis of codons in the 5' region, Biochim. Biophys. Acta 1528, 101-106.

376. T. Kevin Hitchens, Bengt Mannervik and Gordon S. Rule (2001) Disorder-to-order transition of the active site of human class Pi glutathione transferase, GST P1-1, Biochemistry 40, 11660-11669.

377. Roberta Cocco, Gun Stenberg, Beatrice Dragani, Daniela Rossi Principe, Domenico Paludi, Bengt Mannervik and Antonio Aceto (2001) The folding and stability of human Alpha class glutathione transferase A1-1 depend on distinct roles of a conserved N-capping box and hydrophobic staple motif, J. Biol. Chem. 276, 32177-32183.

378. Maryam Edalat, Sven Pettersson, Mats A. A. Persson and Bengt Mannervik (2002) Probing biomolecular interactions of glutathione transferase M2-2 by using peptide phage display, ChemBioChem 3, 823-828.

379. Kristian Dreij, Kathrin Sundberg, Bengt Jernström, Ann-Sofie Johansson, Bengt Mannervik, and Albrecht Seidel (2002) Inactivation of carcinogenic diol epoxides of dibenzo[*A,L*]pyrene (dibenzo[*DEF,P*]chrysene) by human Alpha class glutathione transferases, Polycycl. Aromatic Comp. 22, 823-829.

380. Kerstin Broo, Anna-Karin Larsson, Per Jemth and Bengt Mannervik (2002) An ensemble of Theta class glutathione transferases with novel catalytic properties generated by stochastic recombination of fragments of two mammalian enzymes, J. Mol. Biol. 318, 59-70.

381. Ann-Sofie Johansson and Bengt Mannervik (2002) Active-site residues governing high steroid isomerase activity in human glutathione transferase A3-3, J. Biol. Chem. 277, 16648-16654.

382. Lisa O. Nilsson, Maryam Edalat, Pär L. Pettersson and Bengt Mannervik (2002) Aromatic residues in the C-terminal region of glutathione transferase A1-1 influence rate-determining steps in the catalytic mechanism, Biochim. Biophys. Acta 1598, 199-205.

383. Arthur W. Bull, Stacy K. Seeley, Jason Geno and Bengt Mannervik (2002) Conjugation of the linoleic acid oxidation product, 13-oxooctadeca-9,11-dienoic acid, a bioactive endogenous substrate for mammalian glutathione transferase, Biochim. Biophys. Acta 1571, 77-82.

384. Kristian Dreij, Kathrin Sundberg, Ann-Sofie Johansson, Erik Nordling, Albrecht Seidel, Bengt Persson, Bengt Mannervik and Bengt Jernström (2002) Catalytic activities of human alpha class glutathione transferases toward carcinogenic dibenzo[*a,l*]pyrene diol epoxides, Chem. Res. Toxicol. 15, 825-831.

385. Ina Hubatsch, Bengt Mannervik, Ling Gao, L. Jackson Roberts, Yan Chen and Jason D. Morrow (2002) The cyclopentenone product of lipid peroxidation, 15-A_{2t}-isoprostane (8-iso-prostaglandin A_2), is efficiently conjugated with glutathione by human and rat glutathione transferase A4-4, Chem. Res. Toxicol. 15, 1114-1118.

386. Birgitta I. Eklund, Maryam Edalat, Gun Stenberg and Bengt Mannervik (2002) Screening for recombinant glutathione transferases active with monochlorobimane, Anal. Biochem., 309, 102-108.

387. Ákos Végvári, Anna-Karin Larsson, Stellan Hjertén and Bengt Mannervik (2002) High-resolution capillary zone and gel electrophoresis of structurally similar amphipathic glutathione conjugates based on interaction with β-cyclodextrins, ChemBioChem 3, 1117-1125.

388. Pär L. Pettersson, Ann-Sofie Johansson and Bengt Mannervik (2002) Transmutation of human glutathione transferase A2-2 with peroxidase activity into an efficient steroid isomerase, J. Biol. Chem. 277, 30019-30022.

389. Xiaojun Ren, Per Jemth, Philip G. Board, Guimin Luo, Bengt Mannervik, Junqiu Liu, Kun Zhang and Jiacong Shen (2002) A semisynthetic glutathione peroxidase with high catalytic efficiency: Selenoglutathione transferase, Chem. Biol. 9, 789-794.

390. Richard Svensson, Caroline Grenö, Ann-Sofie Johansson, Bengt Mannervik and Ralf Morgenstern (2002) Synthesis and characterization of 6-chloroacetyl-2-dimethylaminonaphtalene as fluorogenic substrate and mechanistic probe for glutathione transferases, Anal. Biochem. 311, 171-178.

391. Geoffrey K.-W. Kong, Galina Polekhina, William J. McKinstry, Michael W. Parker, Beatrice Dragani, Antonio Aceto, Domenico Paludi, Daniela Rossi Principe, Bengt Mannervik and Gun Stenberg (2003) Contribution of glycine 146 to a conserved folding module affecting stability and refolding of human glutathione transferase P1-1, J. Biol. Chem. 278, 1291-1302.

392. Bengt Mannervik, Lars O. Hansson and William G. Bardsley (2003) Exploring the functional space of combinatorial mutant libraries for the directed evolution of novel enzyme activities, in "Enzyme Functionality: Design, Engineering and Screening" (A. Svendsen, ed.), pp. 443-460 Marcel Dekker, New York.

393. Ylva Ivarsson, Aaron J. Mackey, Maryam Edalat, William R. Pearson and Bengt Mannervik (2003) Identification of residues in glutathione transferase capable of driving functional diversification in evolution - A novel approach to protein redesign, J. Biol. Chem. 278, 8733-8738.

394. Bengt Mannervik (2003) Novel polymorphisms in the glutathione transferase superfamily, Pharmacogenetics (editorial) 13, 127-128.

395. Maryam Edalat, Mats A.A. Persson and Bengt Mannervik (2003) Selective recognition of peptide sequences by glutathione transferases: a possible mechanism for modulation of cellular stress-induced signaling pathways, Biol. Chem., 384, 645-651.

396. Henry J. Lin, Ann-Sofie Johansson, Gun Stenberg, Alicia M. Materi, Jae Man Park, Aihua Dai, Haiyan Zhou, Jason S.Y. Gim, Irving H. Kau, Steven I. Hardy, Michael W. Parker and Bengt Mannervik (2003) Naturally-occurring Phe151Leu substitution near a conserved folding module lowers stability of glutathione transferase P1-1, Biochim. Biophys. Acta 1649, 16-23.

397. Diana S. Hamilton, Xiyun Zhang, Zhebo Ding, Ina Hubatsch, Bengt Mannervik, K.N. Houk, Bruce Ganem and Donald J. Creighton (2003) Mechanism of the glutathione transferase-catalyzed conversion of antitumor 2-crotonyloxymethyl-2-cycloalkenes to GSH adducts, J. Am. Chem. Soc. 125, 15049-15058.

398. Bengt Mannervik, Anna-Karin Larsson and Lars O. Hansson (2003) Combinatorial approaches to the evolutionary redesign of substrate selectivities of glutathione transferases, Drug Metabol. Rev. 35 Suppl. 1, 6.

399. Anna-Karin Larsson, Lars O. Emrén, William G. Bardsley and Bengt Mannervik (2004) Directed enzyme evolution guided by multidimensional analysis of substrate-activity space, Protein Eng. Design Select. 17, 49-55.

400. Usama M. Hegazy, Bengt Mannervik and Gun Stenberg (2004) Functional role of the lock and key motif at the subunit interface of glutathione transferase P1-1, J. Biol. Chem. 279, 9586-9596.

401. Susanne Wisén, Tove Sjögren, Birgit Olin and Bengt Mannervik (2004) Purification, crystallization and preliminary X-ray data of the transcription factor NtcA from the cyanobacterium *Anabaena* PCC 7120, Acta Cryst. D60, 923-925.

402. Susanne Wisén, Birgitta Bergman and Bengt Mannervik (2004) Mutagenesis of the cysteine residues in the transcription factor NtcA from *Anabaena* PCC 7120 and its effects on DNA-binding in vitro, Biochim. Biophys. Acta 1679, 156-163.

403. Maryam Edalat, Bengt Mannervik, and Lars-Göran Axelsson (2004) Selective expression of detoxifying glutathione transferases in mouse colon: effect of experimental colitis and the presence of bacteria, Histochem. Cell Biol. 122, 151-159.

404. Sofia Hederos, Kerstin S. Broo, Emma Jakobsson, Gerard J. Kleywegt, Bengt Mannervik and Lars Baltzer (2004) Incorporation of a single His residue by rational design enables thiol-ester hydrolysis by human glutathione transferase A1-1, Proc. Natl. Acad. Sci. USA 101, 13163-13167.

405. Monique Akoachere, Rimma Iozef, Stefan Rahlfs, Marcel Deponte, Bengt Mannervik, Donald J. Creighton, Heiner Schirmer and Katja Becker (2005) Characterization of the glyoxalases of the malarial parasite *Plasmodium falciparum* and comparison with their human counterparts, Biol. Chem. 386, 41-52.

406. Abeer Shokeer, Anna-Karin Larsson and Bengt Mannervik (2005) Residue 234 in glutathione transferase T1-1 plays a pivotal role in the catalytic activity and the selectivity against alternative substrates, Biochem. J. 338, 387-392.

407. Bengt Mannervik, Philip G. Board, John D. Hayes, Irving Listowsky and William R. Pearson (2005) Nomenclature for mammalian soluble glutathione transferases, Methods Enzymol. 401, 1-8.

408. Bengt Mannervik (2005) Optimizing the heterologous expression of glutathione transferase, Methods Enzymol. 401, 254-265.

409. Francoise Raffalli-Mathieu and Bengt Mannervik (2005) Human glutathione transferase A3-3 active as steroid double-bond isomerase, Methods Enzymol. 401, 265-278.

410. Maryam H. Edalat and Bengt Mannervik (2005) Peptide phage display for probing GST-protein interactions, Methods Enzymol. 401, 354-367.

411. Ylva Ivarsson and Bengt Mannervik (2005) Regio- and enantioselectivities in epoxide conjugations are modulated by residue 210 in Mu class glutathione transferases, Protein Eng. Des. Sel. 18, 607-616.

412. Malena Andersson and Bengt Mannervik (2005) Exploring protein evolution by saturation mutagenesis of the GST M2-2 active site residue 210, FEBS J. 272, 81 Suppl.

413. Usama Hegazy and Bengt Mannervik (2005) Site-directed substitution of the key residue at the subunit interface of GST P1-1 by S-alkylcysteine residues sustains glutathione binding and catalytic activity of the enzyme, FEBS J. 272, 87 Suppl.

414. Ylva Ivarsson and Bengt Mannervik (2005) Exploring the importance of an active site residue on the stereo and regio selectivity of Mu class glutathione transferases, FEBS J. 272, 88 Suppl.

415. Sanela Kurtovic, Arna Runarsdottir, Anna-Karin Larsson, Lars O. Emrén and Bengt Mannervik. (2005) Diverging substrate specificities from a glutathione transferase library analyzed by multivariate methods, FEBS J. 272, 90 Suppl.

416. Abeer Shokeer, Anna-Karin Larsson and Bengt Mannervik (2005) Residue 234 in glutathione transferase T1-1 plays a pivotal role in the catalytic activity and the selectivity against alternative substrates, FEBS J. 272, 99 Suppl.

417. Birgitta Eklund, Adnan A. Elfarra and Bengt Mannervik (2005) Activation of anticancer prodrugs by human glutathione transferases, FEBS J. 272, 546 Suppl.

418. Elin Grahn, Marian Novotny, Emma Jakobsson, Ann Gustafsson, Leif Grehn, Birgit Olin, Dennis Madsen, Mårten Wahlberg, Bengt Mannervik and Gerard J. Kleywegt (2006) New crystal structures of human glutathione transferase A1-1 shed light on glutathione binding and the conformation of the C-terminal helix, Acta Cryst. D62, 197-207.

419. Kaspars Tars, Anna-Karin Larsson, Abeer Shokeer, Birgit Olin, Bengt Mannervik and Gerard J. Kleywegt (2006) Structural basis of the suppressed catalytic activity of wild-type human glutathione transferase T1-1 compared to its W234R mutant, J. Mol. Biol. 305, 96-105.

420. Hee-Sung Park, Sung-Hun Nam, Jin Kak Lee, Chang No Yoon, Bengt Mannervik, Stephen J. Benkovic and Hak-Sung Kim (2006) Design and evolution of new catalytic activity with an existing protein scaffold, Science 311, 535-538.

421. Malena A. Norrgård, Ylva Ivarsson, Kaspars Tars and Bengt Mannervik (2006) Alternative mutations of a positively selected residue elicit gain or loss of functionalities in enzyme evolution, Proc. Natl. Acad. Sci. USA 103, 4876-4881.

422. Stacy K. Seeley, Julie A. Poposki, John Maksimchuk, Jill Tebbe, Jon Gaudreau, Bengt Mannervik and Arthur W. Bull (2006) Metabolism of oxidized linoleic acid by glutathione transferases: Peroxidase activity toward 13-hydroperoxyoctadecadienoic acid, Biochim. Biophys. Acta 1760, 1064-1070.

423. Birgitta I. Eklund, My Moberg, Jonas Bergquist and Bengt Mannervik (2006) Divergent activities of human glutathione transferases in the bioactivation of azathioprine, Mol. Pharmacol. 70, 747-754.

424. Lars O. Emrén, Sanela Kurtovic, Arna Runarsdottir, Anna-Karin Larsson and Bengt Mannervik (2006) Functionally diverging molecular quasi-species evolve by crossing two enzymes, Proc. Natl. Acad. Sci. USA 103, 10866-10870.

425. Françoise Raffalli-Mathieu, David Persson and Bengt Mannervik (2006) Differences between bovine and human steroid double-bond isomerase activities of Alpha-class glutathione transferases selectively expressed in steroidogenic tissues, Biochim. Biophys. Acta 1770, 130-136.

426. P. David b, Patricia L. Taylor, Gaby Vervaet and Bengt Mannervik (2006) Screening and characterization of variant Theta-class glutathione transferases catalyzing the activation of ethylene dibromide to a mutagen, Environm. Mol. Mutagen. 47, 657-665.

427. Usama M. Hegazy, Ulf Hellman and Bengt Mannervik (2006) Replacement surgery with unnatural amino acids in the lock-and-key joint of glutathione transferase subunits, Chem. Biol. 13, 929-936.

428. Ylva Ivarsson and Bengt Mannervik (2006) Combinatorial protein chemistry in three dimensions: a paradigm for the evolution of glutathione transferases with novel activities, in "Toxicology of Glutathione Transferases" (Y.C. Awasthi, ed.), pp. 47-69, CRC Taylor & Francis, Boca Raton.

429. Sanela Kurtovic, Lars O. Emrén, Arna Runarsdottir, Anna-Karin Larsson and Bengt Mannervik (2006) Identification of functionally diverging quasi-species in molecular enzyme evolution, FASEB J. 20, A470.

430. Ylva Ivarsson, Malena A. Norrgård, Kaspars Tars and Bengt Mannervik (2006) A positively selected residue influences enzyme functionalities, FASEB J. 20, A474.

431. Birgitta I. Eklund,Sjofn Gunnarsdottir, Adnan A. Elfarra and Bengt Mannervik (2007) Human glutathione transferases catalyzing the bioactivation of anticancer thiopurine drugs, Biochem. Pharmacol. 73, 1829-1841.

432. Birgitta I. Eklund and Bengt Mannervik (2007) Importance of a hypervariable active-site residue in human Mu class glutathione transferases catalyzing the bioactivation of chemotherapeutic thiopurine prodrugs, Biochim. Biophys. Acta 770, 1098-1103.

433. Sanela Kurtovic, Arna Runarsdottir, Lars O. Emrén, Anna-Karin Larsson and Bengt Mannervik (2007) Multivariate-activity mining for molecular quasi-species in a glutathione transferase mutant library, Protein Eng. Des. Sel. 20, 243-256.

434. Sanela Kurtovic, Ronnie Jansson and Bengt Mannervik (2007) Colorimetric endpoint assay for enzyme-catalyzed iodide ion release for high-throughput screening in microtiter plates, Arch. Biochem. Biophys. 464, 284-287.

435. Ylva Ivarsson, Malena A. Norrgård, Ulf Hellman and Bengt Mannervik (2007) Engineering the enantioselectivity of glutathione transferase by combined active-site mutations and chemical modifications, Biochim. Biophys. Acta 1770, 1374-1381.

436. Bengt Mannervik (2008) Molecular enzymology of the glyoxalase system, Drug Metabol. Drug Interact. 23, 13-27.

437. Sanela Kurtovic, Olof Modén, Abeer Shokeer and Bengt Mannervik (2008) Structural determinants of glutathione transferases with azathioprine activity identified by DNA shuffling of Alpha class members, J. Mol. Biol. 375, 1365-1379.

438. Usama M. Hegazy, Kaspars Tars, Ulf Hellman and Bengt Mannervik (2008) Modulating catalytic activity by unnatural amino acid residues in a GSH-binding loop of GST P1-1, J. Mol. Biol. 376, 811-826.

439. Sanela Kurtovic, Leif Grehn, Andreas Karlsson, Ulf Hellman and Bengt Mannervik (2008) Glutathione transferase activity with a novel substrate mimics the activation of the prodrug azathioprine, Anal. Biochem. 375, 339-344.

440. Sanela Kurtovic, Abeer Shokeer and Bengt Mannervik (2008) Diverging catalytic capacities and selectivity profiles with haloalkane substrates of chimeric Alpha class glutathione transferases, Protein Eng. Des. Sel. 21, 329-341.

441. Francoise Raffalli-Mathieu, Carolina Orre, Mats Stridsberg, Maryam Hansson Edalat and Bengt Mannervik (2008) Targeting human glutathione transferase A3-3 attenuates progesterone production in human steroidogenic cells, Biochem. J. 414, 103-109.

442. Cecilia Blikstad, Abeer Shokeer, Sanela Kurtovic and Bengt Mannervik (2008) Emergence of a novel highly specific and catalytically efficient enzyme from a naturally promiscuous glutathione transferase, Biochim. Biophys Acta 1780, 1458-1463.

443. Sanela Kurtovic, Abeer Shokeer and Bengt Mannervik (2008) Emergence of novel enzyme quasi-species depends on their substrate matrix, J. Mol. Biol. 382, 136-153.

444. Daniel F. A. R Dourado, Pedro Alexandrino Fernandes, Bengt Mannervik and Maria João Ramos (2008) Glutathione transferase: New model for glutathione activation, Chem. Eur. J. 14, 9591-9598.

445. Bengt Mannervik, Arna Runarsdottir and Sanela Kurtovic (2009) Multi-substrate-activity space and quasi-species in enzyme evolution: Ohno's dilemma, promiscuity, and functional orthogonality, Biochem. Soc. Transact. 37, 740-744.

446. Larissa M. Balogh, Isolde Le Trong, Kimberly A. Kripps, Kaspars Tars, Ronald E. Stenkamp, Bengt Mannervik, and William M. Atkins (2009) Structural analysis of glutathione transferase A1-1 mutant tailored for high catalytic efficiency with toxic alkenals, Biochemistry 48, 7698-7704.

447. Usama Hegazy and Bengt Mannervik (2009) Semi-synthetic enzymes, in Amino Acids, Peptides and Proteins in Organic Chemistry, Vol. 2 (A.B. Hughes, ed.), Wiley-VCH, New York, pp. 379-431.

448. Sanela Kurtovic and Bengt Mannervik (2009) Identification of emerging quasi-species in directed enzyme evolution, Biochemistry 48, 9330-9339.

449. P. David Josephy, Meredith Kent and Bengt Mannervik (2009) Single-nucleotide polymorphic variants of human glutathione transferase T1-1 differ in stability and functional properties. Arch. Biochem. Biophys. 490, 24-29.

450. Bengt Mannervik (2009) Regression analysis, experimental error, and statistical criteria in the design and analysis of experiments for discrimination between rival kinetic models, in Contemporary Enzyme Kinetics and Mechanism (D. Purich, ed.), pp. 73-94. Elsevier, Amsterdam.

451. Daniel F. A. R. Dourado, Pedro Alexandrino Fernandes, Bengt Mannervik, and Maria João Ramos (2010) Glutathione transferase A1-1: catalytic importance of arginine 15. J. Phys. Chem. B, 114, 1690-1697.

452. Abeer Shokeer and Bengt Mannervik (2010) Minor modifications of the C-terminal helix reschedule the favored chemical reactions catalyzed by Theta class glutathione transferase T1-1. J. Biol. Chem. 285, 5639-5645.

453. Kaspars Tars, Birgit Olin and Bengt Mannervik (2010) Structural basis for featuring of steroid isomerase activity in Alpha class glutathione transferases. J. Mol. Biol. 397, 332-340.

454. Larissa M. Balogh, Isolde Le Trong, Kimberly A. Kripps, Ronald E. Stenkamp, Wei Zhang, Bengt Mannervik, and William M. Atkins (2010) Substrate specificity combined with stereopromiscuity in glutathione transferase A4-4-dependent metabolism of 4-hydroxynonenal. Biochemistry 49, 1541-1548.

455. Abeer Shokeer and Bengt Mannervik (2010) Residue 234 is a master switch of the alternative-substrates activity profile of human and rodent Theta class glutathione transferase T1-1. Biochim. Biophys. Acta 1800, 466–473.

456. Wei Zhang, Olof Modén and Bengt Mannervik (2010) Differences among allelic variants of human glutathione transferase A2-2 in the activation of azathioprine. Chem.-Biol. Interact. 186, 110–117.

457. Anna-Karin Larsson, Abeer Shokeer and Bengt Mannervik (2010) Molecular evolution of Theta class glutathione transferase for enhanced activity with the anticancer drug 1,3-bis-(2-chloroethyl)-1-nitrosourea and other alkylating agents. Arch. Biochem. Biophys. 497, 28–34.

458. Åsa Brunnström, Mats Hamberg, William J. Griffiths, Bengt Mannervik and Hans-Erik Claesson (2011) Biosynthesis of 14,15-hepoxilins in human L1236 Hodgkin lymphoma cells and eosinophils. Lipids 46, 69–79.

459. Bengt Mannervik and Arna Runarsdottir (2010) The quest for molecular quasi-species in ligand-activity space and its application to directed enzyme evolution. FEBS Lett. 584, 2565–2571.

460. Arna Runarsdottir and Bengt Mannervik (2010) A novel quasi-species of glutathione transferase with high activity towards naturally occurring isothiocyanates evolves from promiscuous low-activity variants. J. Mol. Biol. 401, 451–464.

461. Natalia Fedulova, Francoise Raffalli-Mathieu and Bengt Mannervik (2010) Porcine glutathione transferase alpha 2-2 is a human GST A3-3 analogue catalyzing steroid double-bond isomerization. Biochem. J. 431, 159-167.

462. Natalia Fedulova and Bengt Mannervik (2011) Experimental conditions affecting functional comparison of highly active glutathione transferases. Anal. Biochem. 413, 16-23.

463. Natalia Fedulova, Francoise Raffalli-Mathieu and Bengt Mannervik (2011) Characterization of porcine Alpha class glutathione transferase A1-1. Arch. Biochem. Biophys. 507, 205–211.

464. Emilia Larsson, Bengt Mannervik and Francoise Raffalli-Mathieu (2011) Quantitative and selective PCR analysis of highly similar human Alpha-class glutathione transferases. Anal. Biochem. 412, 96-101.

465. Malena A. Norrgård, Ulf Hellman and Bengt Mannervik (2011) Cys-X scanning for expansion of active-site residues and modulation of catalytic functions in a glutathione transferase. J. Biol. Chem. 286, 16871-16878.

466. Malena A. Norrgård and Bengt Mannervik (2011) Engineering of glutathione transferase M2-2 for high activity with indene 1,2-oxide and indication of an H-site residue sustaining catalytic promiscuity. J. Mol. Biol. 412, 111-120.

467. P. David Josephy, Dan Pan, Michael D. Ianni and Bengt Mannervik (2011) Functional studies of single-nucleotide polymorphic variants of human glutathione transferase T1-1 involving residues in the dimer interface. Arch. Biochem. Biophys. 513, 87-93.

468. Jie Zhang, Aya Shibata , Mika Ito, Satoshi Shuto, Yoshihiro Ito, Bengt Mannervik, Hiroshi Abe and Ralf Morgenstern (2011) Synthesis and characterization of a novel series of fluorogenic substrates for glutathione transferases. J. Am. Chem. Soc. 133, 14109-14119.

469. Olof Modén, Wei Zhang and Bengt Mannervik (2012) Mutational analysis of human glutathione transferase A2-2 identifies structural elements supporting high activity with the prodrug azathioprine. Protein Eng. Design Select. 25, 189-197.

470. Bengt Mannervik (2012) Five decades with glutathione and the GSTome. J. Biol. Chem. 287, 6072-6083.

471. Wei Zhang, Olof Modén, Kaspars Tars and Bengt Mannervik (2012) Structure-based redesign of GST A2-2 for enhanced catalytic efficiency with azathioprine. Chem. & Biol. 19, 414–421.

472. Wei Zhang, Daniel F. A. R. Dourado, Pedro Alexandrino Fernandes, Maria João Ramos and Bengt Mannervik (2012) Multidimensional epistasis and fitness landscapes in enzyme evolution. Biochem. J. 445, 39-46.

473. Mika Ito, Aya Shibata, Jie Zhang, Michio Hiroshima, Yasushi Sako, Yukiko Nakano, Kyoko Ai-kawa, Bengt Mannervik, Satoshi Shuto,Yoshihiro Ito,Ralf Morgenstern and Hiroshi Abe (2012) Universal caging group for glutathione transferase detection applied to ^{19}F nuclear magnetic resonance and bioluminogenic probes. ChemBioChem 13, 1428-1432.

474. Daniel F. A. R. Dourado, Pedro Alexandrino Fernandes, Bengt Mannervik and Maria João Ramos (2014) Isomerization of Δ^5-androstene-3,17-dione into Δ^4-androstene-3,17-dione catalyzed by human GST A3-3: A computational study identifies a dual role for glutathione. J. Phys. Chem. A, 118, 5790–5800.

475. Daniel F. A. R. Dourado, Pedro Alexandrino Fernandes, Maria João Ramos and Bengt Mannervik (2013) Mechanism of glutathione transferase P1-1-catalyzed activation of the prodrug canfosfamide (TLK286, TELCYTA®). Biochemistry 52, 8069-8078.

476. Wei Zhang and Bengt Mannervik (2013) An improved dual-tube megaprimer approach for multi-site saturation mutagenesis. World J. Microbiol. Biotechnol. 29, 667-672.

477. Song Sun, Wei Zhang, Bengt Mannervik and Dan I. Andersson (2013) Evolution of broad spectrum ß-lactam resistance in an engineered metallo-ß-lactamase. J. Biol. Chem. 288, 2314-2324.

478. Nese H. Aksoy, Bengt Mannervik and Francoise Raffalli-Mathieu (2012) Molecular cloning, expression, purification and characterization of wild type and mutant marmoset alpha class glutathione transferase. FEBS J. 279, Suppl.1, 499-499.

478. Bengt Mannervik (2013) Glutathione transferases, detoxication, cancer and longevity. L'annuaire du Collège de France, 112, 853-854. https://journals.openedition.org/annuaire-cdf/1128.

479. Usama M. Hegazy, Yaman Musdal and Bengt Mannervik (2013) Hidden allostery in human glutathione transferase P1-1 unveiled by unnatural amino acid substitutions and inhibition studies. J. Mol. Biol. 425, 1509-1514.

480. Yaman Musdal, Tugba Ertan-Bolelli, Kayhan Bolelli, Serap Yilmaz, Deniz Ceyhan, Usama Hegazy, Bengt Mannervik and Yasemin Aksoy (2012) Inhibition of human glutathione transferase P1-1 by novel benzazole derivatives. Turk. J. Biochem. 37, 431-436.

481. Matthew T. Honaker, Mauro Acchione, Wei Zhang, Bengt Mannervik and William M. Atkins (2013) Enzymatic detoxification, drug metabolism and the role of molten globule active sites. J. Biol. Chem. 288, 18599-18611.

482. Yaman Musdal, Usama Hegazy, Yasemin Aksoy and Bengt Mannervik (2013) FDA-approved drugs and other compounds tested as inhibitors of human glutathione transferase P1-1. Chem.-Biol. Interact. 205, 53–62.

483. Marcus Kjellander, Aslam M.A. Mazari, Mats Boman, Bengt Mannervik, Gunnar Johansson (2014) Glutathione transferases immobilized on nanoporous alumina: Flow system kinetics, screening and stability. Anal. Biochem. 446, 59–63.

484. Aya Shibata, Yukiko Nakano, Mika Ito, Mika Araki, Jie Zhang , Yasuhiko Yoshida, Satoshi Shuto, Bengt Mannervik, Ralf Morgenstern, Yoshihiro Ito and Hiroshi Abe (2013) Fluorogenic probes using 4-substituted-2-nitrobenzenesulfonyl derivatives as caging groups for the analysis of human glutathione transferase catalyzed reactions. Analyst 138, 7326-7330.

485. Aslam M.A. Mazari, Olle Dahlberg, Bengt Mannervik and Mattias Mannervik (2014) Overexpression of glutathione transferase E7 in Drosophila differentially impacts toxicity of organic isothiocyanates in males and females. PLoS ONE 9(10): e110103. doi:10.1371/journal.pone.0110103.

486. Olof Modén and Bengt Mannervik (2014) Glutathione transferases in the bioactivation of azathioprine. Adv. Cancer Res. 122, 199-245.

487. Sandro Huenchuguala, Patricia Muñoz, Patricio Zavala, Monica Villa, Carlos Cuevas, Ulises Ahumada, Rebecca Graumann, Beston Nore, Eduardo Couve, Bengt Mannervik, Irmgard Paris and Juan Segura-Aguilar (2014) Glutathione transferase M2-2 protects glioblastoma cells against aminochrome toxicity by preventing autophagy and lysosome dysfunction. Autophagy, 10, 618-630.

488. Sridhar Govindarajan, Bengt Mannervik, Joshua A. Silverman, Kathy Wright, Drew Regitsky, Usama Hegazy, Thomas J. Purcell, Mark Welch, Jeremy Minshull, and Claes Gustafsson (2015) Mapping of amino acid substitutions conferring herbicide resistance in wheat glutathione transferase. ACS Synth. Biol. 4, 221–227.

489. Carlos Cuevas, Sandro Huenchuguala, Patricia Muñoz, Monica Villa, Irmgard Paris, Bengt Mannervik and Juan Segura-Aguilar (2015) Glutathione transferase M2-2 secreted from glioblastoma cells protect SH-SY5Y cells from aminochrome neurotoxicity. Neurotox. Res. 27, 217-228.

490. Wei Zhang, Daniel F.A.R. Dourado and Bengt Mannervik (2015) Evolution of the active site of human glutathione transferase A2-2 for enhanced activity with dietary isothiocyanates. Biochim. Biophys. Acta 1850, 742–749.

491. Aslam M. A. Mazari, Usama M. Hegazy and Bengt Mannervik (2015) Identification of new inhibitors for human hematopoietic prostaglandin D_2 synthase among FDA-approved drugs and other compounds. Chem.-Biol. Interact. 229, 91–99.

492. Yaman Musdal and Bengt Mannervik (2015) Substrate specificities of two tau class glutathione transferases inducible by 2,4,6-trinitrotoluene in poplar. Biochim. Biophys. Acta, 1850, 1877–1883.

493. Åsa Brunnström, Ylva Tryselius, Stina Feltenmark, Erik Andersson, Helene Leksell, Anna James, Bengt Mannervik, Barbro Dahlén and Hans-Erik Claesson (2015) On the biosynthesis of 15-HETE and eoxin C4 by human airway epithelial cells. Prostaglandins Other Lipid Mediat., 121, 83-90.

494. Michele Scian, Isolde Le Trong, Aslam M.A. Mazari, Bengt Mannervik, William M. Atkins and Ronald E. Stenkamp (2015) Comparison of Epsilon- and Delta-class glutathione S-transferases: The crystal structures of glutathione S-transferase-E6 and E7 from Drosophila melanogaster, Acta Cryst. D71, 2089–2098.

495. Aslam M. A. Mazari and Bengt Mannervik (2016) Drosophila GSTs display outstanding catalytic efficiencies with the environmental pollutants 2,4,6-trinitrotoluene and 2,4-dinitrotoluene, Biochem. Biophys. Rep. 5, 141–145.

496. Birgitta Sjödin and Bengt Mannervik (2016) Blood-brain barrier-penetrating 6-halogenopurines suitable as pro-probes for positron emission tomography are substrates for human glutathione transferases, J. Pharma. Reports, J 1, 114. doi:10.4172/jpr.1000114.

497. Kyriakos Tzafestas, Maria Razalan, Ivan Gyulev, Aslam Mazari, Bengt Mannervik, Elizabeth Rylott and Neil Bruce (2017) Expression of a Drosophila glutathione transferase in Arabidopsis confers ability to detoxify the environmental pollutant, and explosive, 2,4,6-trinitrotoluene. New Phytologist, 214, 294–303. doi: 10.1111/nph.14326.

498. Alessio Bocedi, Raffaele Fabrini, Mario Lo Bello, Anna Maria Caccuri, Giorgio Federici, Bengt Mannervik, Athel Cornish-Bowden and Giorgio Ricci (2016) Evolution of negative cooperativity in glutathione transferase enabled preservation of enzyme function. J. Biol. Chem. 291, 26739–26749.

499. Marcus Cebula, Ilke Simsek Turan, Birgitta Sjödin, Madhuranayaki Thulasingam, Joseph Brock, Volodymyr Chmyrov, Jerker Widengren, Hiroshi Abe, Bengt Mannervik, Jesper Z. Haeggström, Agnes Rinaldo-Matthis, Engin U. Akkaya and Ralf Morgenstern (2016) Catalytic conversion of lipophilic substrates by phase constrained enzymes in the aqueous or in the membrane phase. Scientific Reports 6:38316, doi: 10.1038/srep38316.

500. Tugba Ertan-Bolellia, Kayhan Bolellia, Yaman Musdal, Ilkay Yildiza, EsinAki-Yalcina, Bengt Mannervik and Ismail Yalcina (2017) Design and synthesis of 2-substituted-5-(4-trifluoromethylphenylsulfonamido)benzoxazole derivatives as human GST P1-1 inhibitors. Artificial Cells, Nanomedicine, and Biotechnology, doi: 10.1080/21691401.2017.1324464.

501. Yaman Musdal, Sridhar Govindarajan and Bengt Mannervik (2017) Exploring sequence-function space of a poplar glutathione transferase using designed information-rich gene variants. Protein Eng. Des. Sel. 30, 543-549, doi: 10.1093/protein/gzx045.

502. Helena Lindström, Shawna M. Peer, Nancy H. Ing and Bengt Mannervik (2018) Characterization of equine GST A3-3 as a steroid isomerase. J. Steroid. Biochem. Mol. Biol. 178, 117-126, doi:10.1016/j.jsbmb.2017.11.011.

503. Bengt Mannervik and Birgitta I. Sjödin (2018) Prodrug activation by designer enzyme targeted to CD123-expressing tumors. Mol. Cancer Ther. 17 (1 Suppl): abstr.nr. LB-B23.

504. K. Bolelli, Y. Musdal, E. Aki-Yalcin , B. Mannervik and I. Yalcin (2017) Synthesis and activity mechanism of some novel 2-substituted benzothiazoles as hGSTP1-1 enzyme inhibitors. SAR and QSAR in Environmental Res. 28, 927-940.

505. Sandro Huenchuguala, Birgitta Sjödin, Bengt Mannervik and Juan Segura-Aguilar (2019) Novel alpha-synuclein oligomers formed with the aminochrome-glutathione conjugate are not neurotoxic. Neurotox. Res. 35, 432–440.

506. Helena Lindström, Aslam M. A. Mazari, Yaman Musdal and Bengt Mannervik (2019) Potent inhibitors of equine steroid isomerase EcaGST A3-3. PLoS ONE 14(3):e0214160. https://doi.org/10.1371/journal.pone.0214160.

507. Bengt Mannervik and Birgitta Sjödin (2019) Glutathione transferases: from the test tube to the cell, in "Glutathione" (L. Flohé, ed.), pp. 175-199, Taylor & Francis.

508. Jana Škerlová, Helena Lindström, Elodie Gonis, Birgitta Sjödin, Fabrice Neiers, Pål Stenmark and Bengt Mannervik (2020) Structure and steroid isomerase activity of Drosophila glutathione transferase E14 essential for ecdysteroid biosynthesis. FEBS Lett. 594, 1187–1195. doi:10.1002/1873-3468.13718.

509. Marc Poirot, Emmanuel Noguer, Florence Dalenc, Regis Soules, Lisa Barrett, Arnaud Rives, Hye-Young Kim, Brigitta Sjödin, Camille Franchet, Pilippe Rochaix, Raphaelle Duprez-Paumier, Magali Lacroix-Triki, Thomas Filleron, Leonor Chaltiel, Louise Jones, Emanuala Gadaleta, Claude Chalala, Sergio Roman-Roman, Thierry Dubois, Ned A. Porter, Bengt Mannervik, Michel Record and Sandrine Silvente-Poirot (2018) Characterization of the enzyme generating the cholesterol metabolite and tumor suppressor dendrogenin A in the breast and its deregulations in breast cancer. Cancer Res. 78 (13 Supplement), 5238-5238; doi:10.1158/1538-7445.

510. Raúl Valdes, Alicia Armijo, Patricia Muñoz, Kjell Hultenby, Andres Hagg, Jose Inzunza, Ivan Nalvarte, Mukesh Varshney, Bengt Mannervik and Juan Segura-Aguilar (2021) Cellular trafficking of glutathione transferase M2-2 between U373MG and SHSY-S7 cells is mediated by exosomes. Neurotox. Res. 39(2):182-190. doi: 10.1007/s12640-020-00327-5.

511. Mathieu Schwartz, Franck Menetrier, Jean-Marie Heydel, Evelyne Chavanne, Philippe Faure, Marc Labrousse, Frédéric Lirussi, Francis Canon, Bengt Mannervik, Loïc Briand and Fabrice Neiers (2020) Interactions between odorants and glutathione transferases in the human olfactory cleft. Chemical Senses 45, 645–654; doi.org/10.1093/chemse/bjaa055.

512. Abeer Shokeer, Aram Ismail, Usama M. Hegazy, Rüdiger H. Kolm and Bengt Mannervik (2020) Mutational analysis of the binding of alternative substrates and inhibitors to the active site of human glutathione transferase Pl−1. Processes 8(10), 1232; https://doi.org/10.3390/pr8101232.

513. Jana Škerlová, Aram Ismail, Helena Lindström, Birgitta Sjödin, Bengt Mannervik and Pål Stenmark (2021) Structural and functional analysis of the inhibition of equine glutathione transferase A3-3 by organotin endocrine disrupting pollutants. Environmental Pollution 268, 115960; https://doi.org/10.1016/j.envpol.2020.115960.

514. Shawna Hubert, Paul Samollow, Helena Lindström, Bengt Mannervik and Nancy Hughes Ing (2020) Conservation of glutathione transferase mRNA and protein sequences similar to human Alpha class GST A3-3 across diverse mammalian species. BioRxiv; doi.org/10.1101/2020.11.25.396168.

515. Aram Ismail, Elizabeth Lewis, Birgitta Sjödin and Bengt Mannervik (2021) Characterization of dog glutathione transferase P1-1, an enzyme relevant to veterinary medicine. Int. J. Mol. Sci. 22, 4079; https://doi.org/10.3390/ ijms22084079.

516. Juan Segura-Aguilar, Bengt Mannervik, José Inzunza, Mukesh Varshney, Ivan Nalvarte, Patricia Muñoz (2022) Astrocytes protect dopaminergic neurons against aminochrome neurotoxicity. Neural Regen. Res. 17(9):1861-1866.

517. Birgitta Sjödin and Bengt Mannervik (2021) Role of human glutathione transferases in biotransformation of the nitric oxide prodrug JS-K. Sci. Rep. 11:20765. https://doi.org/10.1038/s41598-021-00327-1.

518. Aram Ismail, Julia Sawmi and Bengt Mannervik (2021) Marmoset glutathione transferases with ketosteroid isomerase activity. Biochem. Biophys. Rep., 27, 101078; https://doi.org/10.1016/j.bbrep.2021.101078.

519. Bengt Mannervik, Aram Ismail, Helena Lindström, Birgitta Sjödin and Nancy H. Ing (2021) Glutathione transferases as efficient ketosteroid isomerases. Front. Mol. Biosci. 8:765970. doi: 10.3389/fmolb.2021.765970.

520. Juan Segura-Aguilar, Patricia Muñoz, Jose Inzunza, Mukesh Varshney, Ivan Nalvarte and Bengt Mannervik (2022) Neuroprotection against aminochrome neurotoxicity: glutathione transferase M2-2 and DT-diaphorase. Antioxidants 11(2): 296; https://doi.org/10.3390/antiox11020296.

521. Yaman Musdal, Aram Ismail, Birgitta Sjödin and Bengt Mannervik (2023) Potent GST ketosteroid isomerase activity relevant to ecdysteroidogenesis in the malaria vector Anopheles gambiae. Biomolecules 13, 976. https:// doi.org/10.3390/biom13060976 (BioRxiv; doi.org/10.1101/2023.03.01.530595).

522. Juan Segura-Aguilar and Bengt Mannervik (2023) A preclinical model for Parkinson's disease based on transcriptional gene activation via KEAP1/NRF2 to develop new antioxidant therapies. Antioxidants 12(3), 673; doi.org/10.3390/antiox12030673.

523. Birgitta Sjödin, Pedram Farsi and Bengt Mannervik (2023) Possible approaches to drug delivery via glutathione transferase proteins and chitosan, Isr. J. Chem. e202300070; doi.org/10.1002/ijch.202300070.

524. Shawna M. Hubert, Paul B. Samollow, Helena Lindström, Bengt Mannervik, and NancyH. Ing (2023) Conservation of glutathione transferase mRNA and protein sequences similar to human and horse alpha class GST A3-3 across dog, goat, and opossum species. Biomolecules 13, 1420; doi.org/10.3390/biom13091420.

525. Bengt Mannervik (2023) Versatility of glutathione transferase proteins. Biomolecules 13, 1749; doi.org/10.3390/biom13121749.

526. Bengt Mannervik and Ralf Morgenstern (2024) Glutathione transferases. in "Comprehensive Toxicology", 4th Edn., Chapter 10.16, Elsevier, New York.

527. Aram Ismail, Sridhar Govindarajan, Bengt Mannervik (2024) Human GST P1-1 redesigned for enhanced catalytic activity with the anticancer prodrug Telcyta and improved thermostability. Cancers 16, 762; doi.org/10.3390/cancers16040762.

528. Katarína Šťastná, Yaman Musdal, Aram Ismail, Kana Ebihara, Ryusuke Niwa and Bengt Mannervik (2024) Supreme glutathione-dependent ketosteroid isomerase in the yellow-fever transmitting mosquito Aedes aegypti. Biochem. Biophys. Res. Commun. 711,149914; doi:10.1016/j.bbrc.2024.149914.

529. Abeer Shokeer, Aram Ismail, Usama M. Hegazy, Rüdiger H. Kolm and Bengt Mannervik (2024) Correction: Shokeer et al. Mutational Analysis of the Binding of Alternative Substrates and Inhibitors to the Active Site of Human Glutathione Transferase P1–1. Processes 2020, 8, 1232; https://doi.org/10.3390/pr8101232.

530. Yaman Muşdal and Bengt Mannervik (2024) Exploring the inhibitory potential of hormone replacement therapy drugs on glutathione transferase P1-1. Acta Medica 55(3),171-176; https://doi.org/10.32552/2024.ActaMedica.1022.

531. Aram Ismail and Bengt Mannervik (2024) Mutations selectively evolving peroxidase activity among alternative catalytic functions of human glutathione transferase P1-1. Antioxidants, 13, 1347; https:// doi.org/10.3390/antiox13111347.