

REFERENCES

1. Henrissat, B., Callebaut, I., Fabrega, S., Lehn, P., Mornon, J. P. and Davies, G. (1995). Conserved catalytic machinery and the prediction of a common fold for several families of glycosyl hydrolases. *Proc. Natl. Acad. Sci.*, 92, 7090-7094.
2. Henrissat, B. (1991). Classification of glycosyl hydrolases base on amino acid sequence similarities. *Biochem. J.*, 280, 309-316.
3. Faley, J. W., Zalcmann, A. T. and Talalay, P. (2001). The chemical diversity and distribution of glucosinolates and isothiocyanates among plants. *Phytochem.*, 56, 5-51.
4. Bones, A. M. and Rossiter, J. T. (1996). The myrosinase-glucosinolate system, its organisation and biochemistry. *Physiol. Plant.*, 97, 194-208.
5. Horn, P. J. and Vaughan, J. G. (1983). Seed glucosinolates of fourteen wild *Brassica* species. *Phytochem.*, 22, 465-470.
6. Nagashima, Z. and Uchiyama, M. (1959). Possibility that myrosinase is a single enzyme and mechanism of decomposition of mustard oil glycoside by myrosinase. *Bull. Agr. Biol. Chem. Soc. Japan*, 23, 555-556.
7. Hogland, A. S., Lenman, M., Falk, A. and Rask, L. (1991). Distribuiion of myrosinase in rapeseed tissues. *Plant Physiol.*, 99, 231-221.
8. Bones, A. M., Visvalingam, S. and Thangstad, O. P. (1994). Sulphate can induce differential expression of thioglucoside glucohydrolases (myrosinases). *Planta*, 193, 558-566.

- 9) Gil, V. and MacLeod, A. J. (1980). The effect of pH on glucosinolate degradation by a thioglucoside glucohydrolase preparation. *Phytochem.*, 19, 2547-2551.
10. Gil, V. and MacLeod, A. J. (1980). Effects of a *Lepidium sativum* enzyme preparation on the degradation of glucosinolates. *Phytochem.*, 19, 2071-2076.
11. Gil, V. and MacLeod, A. J. (1980c). Studies on glucosinolate degradation in *Lepidium sativum* seed extracts. *Phytochem.*, 19, 1369-1374.
12. Hasapis, X. and MacLeod, A. J. (1982). Benzylglucosinolate degradation in heat treated *Lepidium sativum* seeds and detection of a thiocyanate formation factor. *Phytochem.*, 21, 1009-1013.
13. MacLeod, A. J. and Rossiter, J. T. (1986). Isolation and examination of thioglucoside glucohydrolase from seeds of *Brassica napus*. *Phytochem.*, 25, 1047-1051.
14. Petroski, R. J. and Kwolek, W. F. (1985). Interactions of a fungal thioglucoside glucohydrolase and *Cruciferous* plant epithiospecifier protein to form 1-cyanoepithioalkanes : Implications of an allosteric mechanism. *Phytochem.*, 24, 213-216.
15. Petroski, R.J. and Tookey, H. L. (1982). Interactions of thioglucoside glucohydrolase and epithiospecifier protein of *Cruciferous* plants to form 1-cyanoepithioalkanes. *Phytochem.*, 21, 1903-1905.
16. Luthy, J. and Benn, M. (1979). The conversion of potassium allylglucosinolate to 3, 4-epithiobutanenitrile by *Crambe abyssinica* seed flour. *Phytochem.*, 18, 2028-2029.
17. Benn, M. (1977). Glucosinolates. *Pure Appl. Chem.*, 49, 197-210.

18. Kjaer, A. (1974). The natural distribution of glucosinolates : A uniform group of sulfur-containing glucosides. Chemistry in botanical classification. Academic Press, London.
19. Bones, A. M., Thangstad, O. P., Haugen, O. A. and Espevik, T. (1991). Fate of myrosin cells : Characterization of monoclonal antibodies against myrosinase. *J. Exp. Bot.*, 42, 1541-1549.
20. James, D. and Rossiter, J. T. (1991). Development and characteristics of myrosinase in *Brassica napus* during seedling growth. *Physiol. Plant.*, 82, 163-170.
21. Cole, R. A. (1976). Isothiocyanates, nitriles, and thiocyanates as the products of autolysis of glucosinolates in *Cruciferae*. *Phytochem.*, 15, 759-762.
22. Anon, (1991). The state of food and agriculture. *Food and Agriculture Organization* : Rome.
23. Maheshwari, P. N., Stanley, D. W. and Gray, J. I. (1981). Detoxification of rapeseed products. *J. Food Protect.*, 44, 459-470.
24. Brabban, A. D. and Edwards, C. (1994). Isolation of glucosinolate degrading microorganisms and their potential for reducing the glucosinolate content of rapemeal. *FEMS Microbiol. Lett.*, 119, 83-88.
25. Fenwick, G. R.(1982). The assessment of a new protein sources : Rapeseed., *Proc. Nutr. Soc.*, 41, 277-288.
26. Faley, J. W. and Talalay, P. (1999). Antioxidant function of sulforaphane : A potent inducer of phase 2 detoxification enzymes. *Food Chem. Toxicol.*, 37, 973-979.

27. Verhoeven, D. R., Verhagen, H., Goldbohm, R. A., Van Den Brandt, P. A. and Van Poppel, G. (1997). A review of mechanism underlying anticarcino-genicity by *Brassica* vegetables. *Chem. Biol. Interact.*, 28, 79-129.
28. Nugon-Baudon, L., Rabot, S., Wal, J. M. and Szylit, O. (1990). Interactions of the intestinal microflora with glucosinolates in rapeseed meal toxicity : First evidence of an intestinal *Lactobacillus* possessing a myrosinase-like activity *in vitro*. *J. Sci. Food Agr.*, 52, 547-559.
29. Nugon-Baudon, L., Szylit, O. and Raibaud, P. (1988). Production of toxic glucosinolate derivatives from rapeseed meal by intestinal microflora of rat and chicken. *J. Sci. Food Agr.*, 43, 299-308.
30. Wright, P. A. L., Scougall, R. K., Shannon, D. W. F. and Wells, J. W. (1987). Role of glucosinolates in the causation of liver haemorrhages in laying hens fed water extracted or heated-treated rapeseed-cake. *Res. Vet. Sci.*, 43, 313-319.
31. Hill, R. (1979). A review of the toxic effects of rapeseed meals with observations on meal from improved varieties. *Br. J. Vet.*, 135, 3-14.
32. Fenwick, G. R., Heaney, R. K. and Mullin, W. J. (1983). Glucosinolates and their breakdown products in food and food plants. *CRC Crit. Rev. Food Sci. Nutr.*, 18, 123-201.
33. Oginsky, E. L., Stein, A. E. and Greer, M. A. (1965). Myrosinase activity in bacteria as demonstrated by the conversion of progoitrin to goitrin. *Proc. Soc. Exp. Med.*, 119, 360-364.
34. Tani, N., Ohtsuru, M. and Hata, T. (1974). Isolation of myrosinase producing microorganisms. *Agr. Biol. Chem.*, 38, 1617-1622.

35. Ballester, D., Rodrigo, R., Nakouzi, J., Chichester, C. O., Yanez, E. and Monckberg, F. (1970). Rapeseed meal III : A simple method for detoxification. *J. Agr. Food Chem.*, 1970, **21**: p. 143-144.
36. Kozlowska, H., Sosuski, F. W. and Youngs, C. G. (1972). Extraction of glucosinolates from rapeseed. *Can. Int. Food Sci. Technol. J.*, 5, 149-154.
37. Shahidi, F. and Gabon, J. E. (1990). Fate of sinigrin in methanol/ammonia/water-hexane extraction of *B. juncea* mustard seed. *J. Food Sci.*, 55, 793-795.
38. Shahidi, F., Naczk, M., Rubin, L. J. and Diosady, L. L. (1987). A novel processing approach for rapeseed and mustard seed removal of undesirable constituents by methanol-ammonia. *J. Food Protect.*, 51, 743-749.
39. Sosuski, F. W., Soliman, F. S. and Bhatty, R. S. (1972). Diffusion extraction of glucosinolates from rapeseed. *Can. Int. Food Sci. Technol. J.*, 5, 101-104.
40. Van Megen, W. H. (1983). Removal of glucosinolates from defatted rape seed meal by extraction with aqueous ethanol. *Can. Int. Food Sci. Technol. J.*, 16, 93-96.
41. Rauchberger, Y., Mokady, S. and Cogan, U. (1979). The effect of aqueous leaching of glucosinolates on the nutritive quality of rapeseed meal. *J. Agr. Food Chem.*, 30, 31-39.
42. Smiths, J. P., Anssens, R. J. J., Knol, W. and Bol, J. (1994). Modelling of the glucosinolate content in solid-state fermentation of rapeseed meal with fuzzy logic. *J. Ferm. Bioeng.*, 77, 579-581.
43. Smiths, J. P., Knol, W. and Bol, J. (1993). Glucosinolate degradation by *Aspergillus clavatus* and *Fusarium oxysporum* in liquid and solid-state fermentation. *Appl. Microbiol. Biotech.*, 38, 696-701.

44. Pandey, A. (1992). Recent process developments in solid-state fermentation. *Process Biochem.*, 27, 109-117.
45. Palop, M. L., Smiths, J. P. and Brink, B. T. (1995). Degradation of sinigrin by *Lactobacillus agilis* R16. *Int. J. Food Microbiol.*, 26, 219-229.
46. Cottaz, S., Henrissat, B. and Driguez, H. (1996). Mechanism-based inhibition and stereochemistry of glucosinolate hydrolysis by myrosinase. *Biochemistry*, 35, 15256-15259.
47. Daxenbichler, M. E., Van Etten, C. H. and Williams, P. H. (1979). Glucosinolates and derived products in *Cruciferous* vegetables : Analysis of 14 varieties of Chinese cabbage. *J. Agr. Food Chem.*, 27, 34-37.
48. Fielsend, J. and Milford, G. F. L. (1994). Changes in glucosinolate during crop development in single and double-low genotypes of winter oilseed rape (*Brassica napus*) I : Production and distribution in vegetative tissues and developing pods and potential role in recycling of sulfur within the crop. *Ann. Appl. Biol.*, 124, 531-542.
49. DeClercq, D. R. and Daun, J. K. (1989). Determination of the total glucosinolate content in canola by reaction with thymol and sulfuric acid. *JAOCs*, 66, 788-791.
50. Kershaw, S. J. and Johnstone, R. A. W. (1990). Modification of a mini-column method for rapid routine determination of total glucosinolate content of rapeseed by glucose assay. *JAOCs*, 67, 821-826.
51. Smith, C. A. and Dacombe, C. (1987). Rapid method for determining total glucosinolates in rapeseed by measurement of enzymatic released glucose. *J. Sci. Food Agr.*, 38, 141-150.

52. Heaney, R. K. and Fenwick, G. R. (1980). Glucosinolates in *Brassica* vegetables : Analysis of 22 varieties of Brussels sprout (*Brassica oleracea* var. *gemmaifera*). *J. Agr. Food Chem.*, 31, 758-793.
53. Carlson, D.G., Dexenbicher, M. E., Van Etten, C. H. and Tookey, H. L.(1981). Glucosinolates in *Crucifer* vegetables : Turnips and rutabages. *J. Agr. Food Chem.*, 29, 1235-1239.
54. Tsuruo, I., Yoshida, M. and Hata, T. (1967). Studies on the myrosinase in mustard seed part I : The chromatographic behaviors of the myrosinase and some of its characteristics. *Agr. Biol. Chem.*, 31, 18-26.
55. Wilkinson, A. P., Rhodes, M. J. C. and Fenwick, G. R. (1984). Determination of myrosinase (thioglucoside glucohydrolase) activity by a spectrophotometric coupled enzyme assay. *Anal. Biochem.*, 139, 284-291.
56. Palmieri, S., Leoni, O. and Iori, R. (1982). A steady-state kinetics study of myrosinase with direct ultraviolet spectrophotometric assay. *Anal. Biochem.*, 123, 320-324.
57. Van Etten, C. H., Daxenbichler, M. E., Williams, P. H. and Kwolek, W. F. (1976). Glucosinolates and derived products in *Cruciferous* vegetables : Analysis of the edible part of twenty-two varieties of cabbage. *J. Agr. Food Chem.*, 24, 452-455.
58. Olsen, O. and Sorensen, H. (1980). Sinalbin and other glucosinolates in seeds of double low rape species and *Brassica napus* cv. Bronowski. *J. Agr. Food Chem.*, 28, 43-48.

59. Kaoulla, N., MacLeod, A. L. and Gil, V. (1980). Investigation of *Brassica oleracea* and *Nasturtium officinale* seeds for the presence of epithiospecifier protein. *Phytochem.*, 19, 1053-1056.
60. Minchinton, I., Sang, J., Burke, D. and Truscott, R. J. W. (1982). Separation of desulfoglucosinolates by reversed phase high performance liquid chromatography. *J. Chromato.*, 247, 141-148.
61. Luthy, B. and Matiles, P. H. (1984). The mustard oil bomb : Rectified analysis of the subcellular organization of the myrosinase system. *Biochem. Physiol. Pflanz.*, 179, 5-12.
62. Grob, K. and Matiles, P. H. (1979). Vacuolar location of glucosinolates in horseradish root cells. *Plant Sci. Lett.*, 14, 327-335.
63. Lenman, M., Rodin, J., Josefsson, L. G. and Rask, L. (1990). Immunological characterization of rapeseed myrosinase. *Eur. J. Biochem.*, 198, 747-753.
64. MacLeod, A. J. and Rossiter, J. T. (1987). Degradation of 2-hydroxybut-3-enylglucosinolate (progoitrin). *Phytochem.*, 26, 669-673.
65. Tookey, H. L. (1973). *Crambe* thioglucoside glucohydrolase (EC 3.2.3.1) : Separation of a protein required for epithiobutane formation. *Can. J. Biochem.*, 51, 1651-1660.
66. MacLeod, A. J. and Rossiter, J. T. (1985). The occurrence of activity of epithiospecifier protein in some *Cruciferae* seeds. *Phytochem.*, 24, 1895-1898.
67. Koritsas, V. M., Lewis, J. A. and Fenwick, G. R. (1991). Glucosinolate responses oilseedrape, mustard and kale to mechanical wounding and infestation by cabbage stem flea beetle (*Psylliodes chrysocephala*). *Ann. Appl. Biol.*, 118, 209-221.

68. Dougty, K. J., Porter, A. J. R., Morton, J. M., Kiddle, G., Bock, C. H. and Wallsgrove, R. (1991). Variation in the glucosinolate content of oilseed rape (*Brassica napus* L.) leaves II : Response to infection by *Alternaria brassicae* (Berk). *Ann. Appl. Biol.*, 118, 469-477.
69. Birch, A. N. E., Griffiths, D. W. and MacFarlane, S. W. H. (1990). Changes in forage and oilseed rape (*Brassica napus*) root glucosinolates in response to attack by turnip root fly (*Delia floralis*). *J. Agr. Food Chem.*, 51, 309-320.
70. Helmlinger, J., Rausch, T. and Hilgenberg, W. (1983). Localization of newly synthesized indole-3-methylglucosinolate (glucobrassicin) in vacuoles of horseradish (*Armoracia rusticana*). *Plant Physiol.*, 58, 3127-3133.
71. Sulzenbacher, G., Driguez, H., Henrissat, B., Schulein, M. and Davies, G. J. (1996). Structure of the *Fusarium oxysporum* endoglucanase I with a non-hydrolazable substrate analogue : Substrate distortion gives rise to the preferred axial orientation for leaving group. *Biochemistry*, 35, 15280-15287.
72. Aucagne, V., Gueyrard, D., Tatibouet, A., Cattaz, S., Driguez, H., Lafosse, M. and Rollin, P. (1990). The first synthesis of C-glucotropaeolin. *Tet. Lett.*, 40, 7319-7321.
73. Isshiki, K., Tokuoka, K., Mori, R. and Chiba, S. (1992). Preliminary examination of allylisothiocyanate vapor for food preservation. *Biosci. Biotech. Biochem.*, 56, 1476-1477.
74. Greer, M. A. (1962). The isolation and identification of progoitrin from *Brassica* seed. *Arch. Biochem. Biophys.*, 99, 369-371.
75. Delaquis, P. J. and Mazza, G. (1995). Antimicrobial properties of isothiocyanates in food preservation. *Food Technol.*, 40, 73-84.

76. Shifran, B. G., Purrington, S. T., Breidt, F. and Fleming, H. P. Antimicrobial properties of sinigrin and its hydrolysis products. *J. Food Sci.*, 63, 621-624.
77. Delaquis, P. J. and Sholberg, P. L. (1997). Antimicrobial activity of gaseous allylisothiocyanate. *J. Food Protect.*, 60, 943-947.
78. Tang, C. S. (1974). Benzylisothiocyanate as a naturally occurring papain inhibitor. *J. Food Sci.*, 39, 94-96.
79. Stoner, G. D. and Morse, M. A. (1997). Isothiocyanates and plant polyphenols as inhibitors of lung and esophageal cancer. *Canc. Lett.*, 19, 113-119.
80. Zhang, Y. and Talalay, P. (1998). Mechanism of differential potencies of isothiocyanate as inducer of anti-carcinogenic phase 2 enzymes. *Canc. Res.*, 58, 4632-4639.
81. Zhang, Y. and Talalay, P. (1994). Anticarcinogenic activities of organic isothiocyanate : Chemistry and mechanisms. *Canc. Res.*, 54, 1967-1981.
82. Bussy, A. (1840). Sur la formation de l'huile essentielle de moutarde. *J. Pharmacol.*, 27, 464-471.
83. Vose, J. R. (1972). The fractionation of two glucosinolases from *Sinapis alba* seed by isoelectric focusing. *Phytochem.*, 11, 1649-1653.
84. MacGibbon, D. B. and Allison, R. M. (1970). A method for the detection of plant glucosinolases (myrosinases). *Phytochem.*, 9, 541-544.
85. Lonnerdal, B. and Janson, J. C. (1973). Studies on myrosinases II : Purification and characterization of a myrosinase from rapeseed (*Brassica napus* L.). *Biochim. Biophys. Acta*, 315, 421-429.

86. Palmieri, S., Iori, R. and Leoni, O. (1986). Myrosinase from *Sinapis alba* L. : A new method of purification for glucosinolate analysis. *J. Agr. Food Chem.*, 34, 138-140.
87. Pessina, A., Thomas, R. M., Palmieri, S. and Luisi, P. L. (1990). An improved method for the purification of myrosinase and its physicochemical characterization. *Arch. Biochem. Biophys.*, 280, 383-389.
88. Bjorkman, R. and Janson, J. C. (1972). Studies on myrosinases I : Purification and characterization of a myrosinase from white mustard seed (*Sinapis alba* L.). *Biochim. Biophys. Acta*, 276, 508-518.
89. Ohtsuru, M. and Hata, T. (1972). Molecular properties of multiple forms of plant myrosinase. *Agr. Biol. Chem.*, 36, 2495-2503.
90. Ohtsuru, M. and Kawatani, H. (1979). Studies on the myrosinase from *Wasabia japonica* : Purification and some properties of *Wasabi* myrosinase. *Agr. Biol. Chem.*, 43, 2249-2255.
91. Bjorkman, R. and Lonnerdal, B. (1973). Studies on myrosinases III : Enzymatic properties of myrosinases from *Sinapis alba* and *Brassica napus* seeds. *Biochim. Biophys. Acta*, 327, 121-131.
92. Tsuruo, I. and Hata, T. (1967). Studies on the myrosinase in mustard seed part II : On the activation mode of the myrosinase by L-ascorbic acid. *Agr. Biol. Chem.*, 31, 27-32.
93. Tsuruo, I. and Hata, T. (1968). Studies on the myrosinase in mustard seed part III : On the effects of neutral salts. *Agr. Biol. Chem.*, 32, 479-483.

94. Tsuruo, I. and Hata, T. (1968) Studies on the myrosinase in mustard seed part IV : Sugars and glucosides as competitive inhibitors. *Agr. Biol. Chem.*, 32, 1420-1424.
95. Iori, R., Rollin, P., Striecher, H., Thiem, J. and Palmieri, S. (1996). The myrosinase-glucosinolate interaction mechanism studied using some synthetic competitive inhibitors. *FEBS Lett.*, 358, 87-90.
96. Ohtsuru, M. and Hata, T. (1979). The interaction of L-ascorbic acid with the active center of myrosinase. *Biochim. Biophys. Acta*, 567, 384-391.
97. Botti, M. G., Taylor, M. and Botting, N. P. (1995). Studies on the mechanism of myrosinase : Investigation of the effect of glycosyl acceptors on enzyme activity. *J. Biol. Chem.*, 270, 20530-20535.
98. Cottaz, S., Rollin, P. and Driguez, H. (1997). Synthesis of 2-deoxy-2-fluoro-glucotropaeolin, a thioglucosidase inhibitor. *Carb. Res.*, 298, 127-130.
99. Falk, A., Taipalensuu, J. E. B., Lenman, M. and Rask, L. (1995). Characterization of rapeseed myrosinase-binding protein. *Planta*, 195, 387-395.
100. Ohtsuru, M. and Hata, T. (1973). General characteristics of the intracellular myrosinase from *Aspergillus niger*. *Agr. Biol. Chem.*, 37, 2543-2548.
101. Reese, E. T., Clapp, R. L. and Mandels, M. (1958). *A thioglucosidase in fungi*. *Arch. Biochem. Biophys.*, 75, 228-242.
102. Ohtsuru, M., Tsuruo, I. and Hata, T. (1969). Studies on fungous myrosinase part I : Production, purification and some characteristics. *Agr. Biol. Chem.*, 33, 1309-1314.

103. Ohtsuru, M., Tsuruo, I. and Hata, T. (1969). Studies on fungous myrosinase part III : Effects of various reagents on its enzymatic activities. *Agr. Biol. Chem.*, 33, 1315-1319.
104. Ohtsuru, M., Tsuruo, I. and Hata, T. (1969). Studies on fungous myrosinase part II : On the β -glucosidase activity of fungous myrosinase and the relationship of fungous and plant myrosinases to β -glucosides. *Agr. Biol. Chem.*, 33, 1320-1325.
105. Phillipchuk, G. E. and Jackson, H. (1979). Rapeseed oil meal as a nitrogenous substrate for microbial fermentation. *J. Gen. Appl. Microbiol.*, 25, 117-125.
106. Yeoman, K. H. and Edwards, C. (1992). Growth of thermophilic bacteria in rapemeal-derived media. *J. Gen. Appl. Microbiol.*, 73, 120-125.
107. Ohtsuru, M., Tsuruo, I. and Hata, T. (1973). The production and stability of intracellular myrosinase from *Aspergillus niger*. *Agr. Biol. Chem.*, 37, 967-971.
108. Lowry, O. H., Rosebrough, H. J., Farr, A. L. and Randall, R. T. (1951). Protein measurements with the Folin phenol reagent. *J. Biol. Chem.*, 193, 265-298.
109. Hawksworth, D. L. (1993). IMI technical hand book : Research on enzyme production from fungi. 1993: International Mycological Institute.
110. Miller, G.L. (1959). Use of dinitrosalicylic acid reagent for the determination of reducing sugar. *Anal. Chem.*, 31, 426-428.
111. Jungsamarnyart, N. (1986). Basic and technique on biological applications of transmission electron microscope (TEM). Kasetsart University.
112. Jungsamarnyart, N. (1986) Principle and biological application techniques of trasmission and scanning electron microscope. Kasetsart University.

113. Millonig, G. (1961). Avantages of phosphate buffer for osmium tetroxide solution in fixation. *J. Appl. Phys.*, 32, 1637-1643.
114. Harris, E. L. V. and Angal, S. (1989). Protein purification methods : A practical approach. Oxford University Press.
115. Janson, J. C. and Ryden, L. (1989). Protein purification : Principles, high resolution methods, and applicaions. A John Wiley & Sons, Inc.
116. Laemmli, U. K. (1970). Cleavage of structure proteins during the assembly of the head of bacteriophage T4. *Nature*, 227, 680-685.
117. Carlile, M. J. and Watkinson, S. C. (1997). The fungi. Hartcourt Brace & Company, Publishers.
118. Jennings, D. H. and Lysek, G. (1996). Fungal bilogy : Understanding the fungal lifestyle. Bios Scientific Publishers Limited.
119. Raper, K. B. and Fennell, D. I. (1965). The genus *Aspergillus*. Baltimore: The Williams & Wilkins Co.
120. Sakorn, P., Rakariyatham, N., Niamsup, H. and Nungkunsarn, P. (2002). Rapid detection of myrosinase-producing fungi : A plate culture based on opaque barium sulphate formation. *World J. Microbiol. Biotech.*, 18, 73-74.
121. Miller, R.W., Van Etten, C. H., McGrew, C. and Wolff, I. (1962). Amino acid composition of seed meal from forty-one species of *Cruciferae*. *J. Agr. Food Chem.*, 10, 426-430.
122. Ohlson, R. (1972). Projection and prospects for rapeseed and mustard seed. *J. Am. Chem. Soc.*, 49, 522-526.

123. Tsao, R., Yu, Q., Friesen, I., Potter, J. and Chiba, M. (2000). Factors affecting the dissolution and degradation of oriental mustard-derived sinigrin and allylisothiocyanate in aqueous media. *J. Agr. Food Chem.*, 48, 1898-1902.
124. Kawakishi, S. and Namiki, M. (1969). Decomposition of allylisothicyanate in aqueous solution. *Agr. Biol. Chem.*, 33, 452-459.