

LITERATURE CITED

1. **Bell, A.**, 1981. Biochemical mechanisms of disease resistance. *Annu. Rev. Plant Physiol.* **32**: 21-81.
2. **Conn, E., E.**, 1981. Cyanogenic glycosides. pp. 479-500. In: Stumpf, P. K., and E. E. Conn (eds) *Biochemistry of Plants*, vol 7, Academic Press, New York.
3. **Niemeyer, H., M.**, 1988. Hydroxamic acids (4-hydroxy-1,4-benzoxazin-3-ones), defense chemicals in the gramineae. *Phytochemistry* **27**: 3349-3358.
4. **Nisius, A.**, 1988. The stromacentre in *Avena* plastids: an aggregation of β -glucosidase responsible for the activation of oat- leaf saponins. *Planta* **173**: 474-481.
5. **Brzobohaty, B., Moore, I., Christofferson, P., Bako L., Campos N., Schell J., and Palme K.**, 1993. Release of active cytokinin by a β -glucosidase localized to the maize root meristem. *Science* **262**: 1051-1054.
6. **Matsuzaki, T., and Koiwai, A.**, 1986. Germination inhibition in stigma extracts of tobacco and identification of MeABA, ABA, and ABA-B-D-glucopyranoside. *Agric. Biol. Chem.* **50**: 2193-2199.
7. **Schliemann, W.**, 1984. Hydrolysis of conjugated gibberellins by β -glucosidases from Dwarf Rice (*Oryza sativa* L. cv. Tan-ginbozu). *J. Plant Physiol.* **116**: 123-132.
8. **Smith, A. R., and van Staden, J.**, 1978. Changes in endogenous cytokinin levels in kernels of *Zea mays* L. during imbibition and germination. *J. Exp. Bot.* **29**: 1067-1073.
9. **Dharmawardhana, D. P., Ellis, B. E., and Carlson, J. E.**, 1995. A β -glucosidase from lodgepole pine xylem specific for the lignin precursor coniferin. *Plant Physiol.* **107**: 331-339.

10. **Leah, R., Kigel, J., Svendsen, and I. Mundy, J.,** 1995. Biochemical and molecular characterization of barley seed β -glucosidase. *J. Biol. Chem.* **270**: 15789-15797.
11. **Simos, G., Panagiotidis, C. A., Skoumbas, A., Choli, D., Ouzounis, C., and Georgatsos, J. G.,** 1994. Barley β -glucosidase: Expression during seed germination and maturation and partial amino acid sequences. *Biochim. Biophys. Acta.* **1199**: 52-58.
12. **Esen, A., and Cokmus, C.,** 1990. Maize genotypes classified as null at the glu locus have β -glucosidase activity and immunoreactive protein. *Biochemical Genetics* **28**: 319-336.
13. **Esen, A.,** 1992. Purification and partial characterization of maize (*Zea mays* L.) β -glucosidase. *Plant Physiol.* **98**: 174-182.
14. **Cuevas, L., Niemeyer, H., M., and Jonsson, L., M., V.,** 1992. Partial purification and characterization of a hydroxamic acid glucoside β -D-glucosidase from maize. *Phytochemistry* **31**: 2609-2619.
15. **Bandaranayake, H., and Esen, A.,** 1996. Nucleotide sequence of a cDNA corresponding to second β -glucosidase gene in maize (*Zea mays* L.) (Accession # U44087). *Plant Physiol.* **110**: 1048.
16. **Henrissat, B.,** 1991. A classification of glycosyl hydrolases based on amino acid similarities. *Biochem. J.* **280**: 309-316.
17. **Trimbur, D., E., Warren, R., A., J., and Withers, S. G.,** 1992. Region-directed mutagenesis of residues surrounding the active site nucleophile in β -glucosidase from *Agrobacterium faecalis*. *J Biol Chem.* **267**: 10248-10211.
18. **Falk, A. J. and Rask, L,** 1995. Expression of a zeatin-O-glucoside-degrading β -glucosidase in *Brassica napus*. *Plant Physiol.* **108**: 1369-1377.

19. **Xue, J., Lenman, M., Falk, A., and Rask, L.,** 1992. The glucosinolate-degrading enzyme myrosinase in Brassicaceae is encoded by a gene family. *Plant Mol. Biol.* **18**: 387-398.
20. **Xue, J., Jorgensen, M., Pihlgren, U., and Rask, L.,** 1995. The myrosinase gene family in *Arabidopsis thaliana* : Gene organization, expression and evolution. *Plant Mol. Biol.* **27**: 911-922.
21. **Koshland, D. E.** 1953. Stereochemistry and the mechanism of enzymatic reactions. *Biol. Rev. Camb. Soc.* **28**: 416-436.
22. **Sinnott, M L.** 1990. Catalytic mechanism of enzymic glycosyl transfer. *Chem Rev* **90**: 1171-1202.
23. **Lawson, S., L., Warren, R., A., and Withers, S., G.,** 1998. Mechanistic consequences of replacing the active-site nucleophile Glu-358 in *Agrobacterium* sp. β -glucosidase with a cysteine residue. *Biochem J.* **330**: 203-209.
24. **Street, I., P., Kempton, J., B., and Withers, S., G.,** 1992. Inactivation of a β -glucosidase through the accumulation of a stable 2-deoxy-2-fluoro- α -D-glucopyranosyl-enzyme intermediate: a detailed investigation. *Biochemistry* **31**: 9970-9978.
25. **Withers, G., S., Warren, R., A.,J., Street, I., P., Rupitz, K., Kempton, J., B., and Aebersold R.,** 1990. Unequivocal demonstration of the involvement of a glutamate residue as a nucleophile in the mechanism of a "retaining" glycosidase. *J Am Chem Soc* **112**: 5887-5889.
26. **Withers, S., G., Rupitz, K., Trimbur, D., and Warren, R. A. J.,** 1992. Mechanistic consequences of mutation of the active site nucleophile Glu-358 in *Agrobacterium* β -glucosidase. *Biochemistry* **31**: 9979-9985.

27. **Moracci, M., Capalbo, L., Ciaramella, M., and Rossi, M.,** 1996. Identification of two glutamic acid residues essential for catalysis in the β -glycosidase from the thermoacidophilic archaeon *Sulfolobus solfataricus*. *Protein Eng.* **9**: 1191-1195.
28. **Cottaz, S., Henrissat, B., and Driguez, H.,** 1996. Mechanism-based inhibition and stereochemistry of glucosinolate hydrolysis by myrosinase. *Biochemistry.* **35**: 15256-15259.
29. **Wang, Q., D., Trimbur, R., Graham, R., Warren, R. A. J., and Withers, S. G.,** (1995). Identification of the acid/base catalyst in *Agrobacterium faecalis* β -glucosidase by kinetic analysis of mutants. *Biochemistry* **34**: 14554-14562.
30. **Barrett, T., Suresh, C., G., Tolley, S., P., Dodson, E., J., and Hughes, M., A.,** 1995. The crystal structure of a cyanogenic β -glucosidase from white clover, a family 1 glycosyl hydrolase. *Structure* **3**: 951-960.
31. **Wiesmann, C., Beste, G., Hengstenberg, W., and Schulz, G. E.,** 1995. The three-dimensional structure of 6-phospho- β -galactosidase from *Lactococcus lactis*. *Structure* **3**: 961-8.
32. **Burmeister, W., P., Cottaz, S., Driquez, H., Iori, R., Palmieri S., and Henrissat, B.,** 1997. The crystal structures of *Sinapis alba* myrosinase and a covalent glycosyl-enzyme intermediate provide insights into the substrate recognition and active-site machinery of an S-glycosidase. *Structure* **5**: 663-675.
33. **Sanz-Aparicio, J., Hormoso, J., A., Martinez-Ripoll, M., Lequerica, J. L., and Polaina, J.,** 1998. Crystal structure of β -glucosidase A from *Bacillus polymyxa*: insights into the catalytic activity in Family 1 glycosyl hydrolases. *J. Mol. Biol.* **275**: 491-502.
34. **Davies, G., and Henrissat, B.,** 1995. Structures and mechanisms of glycosyl hydrolases. *Structure* **3**: 853-859.
34. **Wang, G., and Withers, S., G.,** 1995. Substrate-assisted catalysis in β -

glycosidases. *J. Amer. Chem Soc.* **117**: 10137-10138.

36. **Cicek, M., and Esen, A.**, 1999. Expression of soluble and catalytically active plant (monocot) beta-glucosidases in *E. coli*. *Biotechnol Bioeng.* **63**: 392-400.

37. **Horton, R., M., Cai, Z., Ho, S., N., and Pease, L., R.**, 1990. Gene splicing by overlap extension: tailor-made genes using the polymerase chain reaction. *Biotechniques* **8**: 528-535.

38. **Roby, F., J., and White B., J.**, 1990. *Biochemical Techniques, Theory and Practice*. Chapter 4. Waveland Press, Inc. Illinois. pp 107-108.

39. **Witt, E., Frank, R., and Hengstenberg, W.**, 1993. 6-Phospho- β -galactosidases of gram-positive and 6-phospho- β -glucosidase B of gram-negative bacteria: comparison of structure and function by kinetic and immunological methods and mutagenesis of the lacG gene of *Staphylococcus aureus*. *Protein Eng.* **6**: 913-920.

40. **Kerestessy, Z., Hughes, M. A., and Liptak, A.**, 1996. Co-purification from *Escherichia coli* of a plant β -glucosidase-glutathione S-transferase fusion protein and the bacterial chaperonin GroEL. *Biochem J.* **314**: 41-47.