

REFERENCE

- Angawi, R. F., Swenson, D. C., Gloer, J. B. and Wicklow, D. T. 2003. " Lowdenic acid: A New antifungal polyketide-derived metabolite from a new fungicolous *Verticillium* sp. " *J. Nat. Prod.* 66, 1259-1262.
- Angelo, V., Lisa, A. B., John, W. A., Roy, G. J. and David, M. 1992. "Production of enniatins by *Fusarium acuminatum* and *Fusarium compactum* in liquid culture: Isolation and characterization of three new enniatins, B₂, B₃ and B₄" *J. Agric. Food Chem.* 40, 1076-1082.
- Blais, L. A., ApSimon, J. W., Blackwell, B. A., Greenhalgh, R. and Miller, J. D. 1992. "Isolation and characterization of enniatins from *Fusarium avenaceum* DAOM 196490" *Can. J. Chem.* 70, 1281-1287.
- Burmeister, H. R. and Plattner, R. D. 1987. "Enniatin production by *Fusarium tricinctum* and its effect on germinating wheat seeds" *Phytopathology.* 77(10), 1483-1487.
- Cameron, D. W., Feutrill, G. I. And Griffiths, P. G. 1981. "Synthesis of the fungal pigment 2,7-dihydroxy-5-methyl-1,4-naphthoquinone" *Aust. J. Chem.* 34, 227-229.
- Choy, Y. M. and Unrau, A. M. 1971. "Metabolites of *Verticillium dahliae*: The isolation and structure elucidation of some disaccharides and a trisaccharide" *Can. J. Biochem.* 49, 894-899.

- Claydon, N., Grove, J. E. and Pople, M. 1984. " New metabolic products of *Verticillium lecanii* Ppart 1. 3 β -hydroxy-4,4,14 α -trimethyl-5 α -pregna-7,9(11)-diene-20S-carboxylic acid and the isolation and characterization of some minor metabolites" *J. Chem. Soc. Perkin Trans.1.* 497-502.
- Collins, L. and Franzblau, S. G. 1997. "Microplate alamar blue assay versus BACTEC 460 system for high-throughput screening of compounds against *Mycobacterium tuberculosis* and *Mycobacterium avium*" *Antimicrob. Agents Chemother.* 41, 1004-1009.
- Desjardins, R. E., Canfield, C. J. and Chulay, J. D. 1979 " Quantitative assessment of antimalarial activity *in vitro* by semiautomated microdilution technique" *Antimicrob. Agents Chemother.* 16, 710-718.
- DeVault, R. L. and Rosenbrook, W. Jr. 1973. " A novel class of diketopiperazines" *J. Antibiot.* 26, 532-534.
- Grove, J. F. and Pople, M. 1980. "The insecticidal activity of beauvericin and the enniatin complex" *Mycopathologia.* 70, 103-105.
- Grove, J. F. 1984a. "New metabolic products of *Verticillium lecanii*. Part 2. 3 β ,12 β -Dihydroxy-4,4,14 α -trimethyl-5 α -pregna-7,9(11)-diene-20S-carboxylic acid and 4,4,14 α -trimethyl-3-oxo-5 α -pregna-7,9(11)-diene-20S-carboxylic acid" *J. Chem. Soc. Perkin Trans.1.* 1219-1221.
- Grove, J. F. 1984b. "23,24,25,26,27-Pentanorlanorst-8-en-3 β ,22-diol from *Verticillium lecanii*" *Phytochemistry.* 23(8), 1721-1723.
- Gupta, S., Peiser, G., NakaJima, T. and Hwang, Y. S. 1994. "Characterization of a phytotoxic cyclotetrapeptide, a novel chlamydocin analogue, from *Verticillium coccosporum*" *Tetrahedron Letters.* 35(33), 6009-6012.

- Hauser, D., Loosli, H. R. and Niklaus, P. 1972. "Isolierung von 11 α , 11' α -Dihydroxychaetocin aus *Verticillium tenerum*" *Helvetica Chimica Acta*. 55(6), 2182-2186.
- Hawksworth, D. L. 1995. "The fungal dimension of biodiversity: magnitude, significance, and conservation" *Mycol. Res.* 641-655.
- Herdeis, C., Mohareb, R. M., Neder, R. B., Schwabenlander, F. and Telser, J. 1999. "Studies on the synthesis of chiral nonracemic 3,4-disubstituted azepanes, a formal synthesis of (+)- and (-) balanol" *Tetrahedron: Asymmetry*. 10, 4521-437.
- Hywel-Jones, N. L., Evans, H. C. and Jun, Y. 1997. "A re-evaluation of the leafhopper pathogen *Torrubiella hemipterigena*, its anamorph *Verticillium hemipterigenum* and *V. pseudohemipterigenum* sp. nov." *Mycol. Res.* 101, 1242-1246.
- Ichihara, A., Nonaka, M., Sakamura, S., Sato, R. and Tajimi, A. 1988. "Structure and synthesis of alboatrin, a novel phytotoxic metabolite from *Verticillium albo-atrum*" *Chemistry letters*. 27-30.
- Jaturapat, A., Isaka, M., Hywel-Jones, N. L., Lertwerawat, Y., Kamchonwongpaisan, S., Kirtikara, K., Tanticharoen, M. and Thebtaranonth, Y. 2001. "Bioxanthracenes from the insect pathogenic fungus *Cordyceps pseudomilitaris* BCC 1620. I. Taxonomy, fermentation, isolation and antimalarial activity" *J. Antibiot.* 54, 29-35.
- Katagiri, K., Sato, K., Hayakawa, S., Matsushima, T. and Minato, H. 1970. "Verticillin A, a new antibiotic from *Verticillium* sp." *J. Antibiot.* 23, 420-422.

- Krause, M., Lindemann, A., Glinski, M., Hornbogen, T., Bonse, G., Jeschke, P., Thielking, G., Gau, W., Kleinkauf, H. and Zocher, R. 2001. "directed biosynthesis of new enniatins" *J. Antibiot.* 54, 797-804.
- Kulanthaivel, P., Hallock, Y. F., Boros, C., Hamilton, S. M., Janzen, W. P., Ballas, L. M., Loomis, C. R. and Jiang, J. B. 1993. " Balanol: a novel and potent inhibitor of protein kinase C from the fungus *Verticillium balanoides*" *J. Chem. Soc.* 115, 6452-6453.
- Laursen, B., Denieul, M. P. and Skrydstro, T. 2002. "Formal total synthesis of the PKC inhibitor, balanol: preparation of the fully protected benzophenone fragment" *Tetrahedron.* 58, 2231-2238.
- Lee, C., Gorisch, H., Kleinkauf, H. and Zocher, R. 1992. "A highly specific D-hydroxyisovalerate dehydrogenase from the enniatin producer *Fusarium sambucinum*" *J. Biol. Chem.* 267, 11741-11744.
- Lin, Y., Wang, J., Wu, X., Zhou, S., Vrijmoed, L. L. P. and Jones, E. B. G. 2002. "A Novel Compound Enniatin G from the Mangrove Fungus *Halosarpheia* sp. (strain 732) from the South China Sea" *Aust. J. Chem.* 55, 225-227.
- Matsumoto, M., Minato, H., Kondo, E., Mitsugi, T. and Katagiri, K. 1975. "Cephalochromin, dihydroisoustilaginoidin A, and iso-ustilaginoidin A from *Verticillium* sp. K-113" *J. Antibiot.* 28, 602-604.
- Matsuo, K. and Sakaguchi, Y. 1996. "Synthesis of (-)-vertinolide" *Heterocycles.* 43 (12), 2553-2556.
- McCorkindale, N. J., McRitchie, A. C., and Hutchinson, S. A., 1973. "Lamellicolic anhydride-a heptaketide naphthalic anhydride from *Verticillium lamellicola*" *J. Chem. Soc., Chem. Comm.* 4, 108-109.

- McCorkindale, N. J., Hutchinson, S. A., McRitchie, A. C. and Sood, G. R. 1983. "Lamellicolic anhydride, 4-*O*-carbomethoxylamellicolic anhydride and monomethyl 3-chloroamellicolate, metabolites of *Verticillium lamellicola*" *Tetrahedron* 39(13), 2283-2288.
- Michel, K. H., Chaney, M. O., Jones, N. D., Hoehn, M. M. and Nagarajan, R. 1974. "Epipolythiopiperazinedione antibiotics from *Penicillium turbatum*" *J. Antibiot.* 27, 57-64.
- Mikawa, T., Chiba, N., Ogishi, H., Gomi, S., Miyaji, S. and Sezaki, M. 1991. "Novel antibiotic MK 1688 and its manufacture with *Fusarium* species" Japanese Patent, JP 02229177-A2; *Chem. Abstr.* 114, 227487k.
- Minato, H., Matsumoto, M. and Katayama, T. 1973. " Studies on the metabolites of *Verticillium* sp. structures of verticillins A, B and C." *J. Chem. Soc. Perkin Trans. I.* 1819-1825.
- Morris, R. A. C., Ewing, D. F., Whipps, J. M. and Coley-Smith, J. 1995. "Antifungal hydroxymethyl-phenols from mycoparasite *Verticillium biguttatum*" *Phytochemistry.* 39 (5), 1043-1048.
- Narayana, N., Diller, T. C., Koide, K., Bunnage, M. E., Nicolaou, K. C., Brunton, L. L., Xuong, N. H., Eyck, L. F. T. and Taylor, S. S. 1999. "Crystal structure of the potent natural product inhibitor balanol in complex with the catalytic subunit of cAMP-dependent protein kinase" *Biochemistry.* 38, 2367-2376.
- Nilanonta, C., Isaka, M., Kittakoop, P., Saenboonrueng, J., Rukachaisirikul, V., Kongsaree, P. and Thebtaranonth, Y. 2003a. "New Diketopiperazines from the Entomopathogenic Fungus *Verticillium hemipterigenum* BCC 1449" *J. Antibiot.* 56, 647-651.

- Nilanonta, C., Isaka, M., Chanphen, R., Thong-orn, N., Tanticharoen, M. and Thebtaranonth, Y. 2003b. "Unusual enniatins produced by the insect pathogenic fungus *Verticillium hemipterigenum*: isolation and studies on precursor-directed biosynthesis" *Tetrahedron*. 59, 1015-1020.
- Niwa, M., Ogiso, S., Endo, T., Furukawa, H. and Yamamura, S. 1980. "Isolation and structure of citreopyrone, a metabolite of *Penicillium citreo-viride* Biourge" *Tetrahedron Lett.* 21, 4481-4482.
- Ovchinnikov, Yu. A., Ivanov, V. T., Mikhaleva, I. I. and Shemyakin, M. M. 1964. "Synthesis of Enniatin C" *Izv. Akad. Nauk. S. S. S. R., Ser. Khim.* 1823.
- Ovchinnikov, Yu. A. 1974. "Membrane Active Complexones. Chemistry and Biological Function" *FEBS Lett.* 44, 1-21.
- Petch, T. 1923. "Studies in entomogenous fungi. III. *Torrubiella*" *Trans. Br. Mycol. Soc.* 9, 108-128.
- Petch, T. 1932 "Notes on entomogenous fungi, 22-48" *Trans. Br. Mycol. Soc.* 16, 209-245.
- Pieper, R., Kleinkauf, H. and Zocher, R. 1992. "Enniatin synthetases from different fusaria exhibiting distinct amino acid specificities" *J. Antibiot.* 45, 1273-1277.
- Plattner, Pl. A., Nager, U. and Boller, A. 1948. "Über die isolierung neuartiger antibiotika aus Fusarien" *Helv. Chim. Acta.* 31, 594-602.
- Plattner, Pl. A. and Nager, U. 1948. "Analysis and characterization of enniatins. The separation of *N*-methyl amino acids by paper chromatography" *Helv. Chim. Acta.* 31, 2203-2209.

- Sato, H., Konoma, K. and Sakamura, S. 1979. " Phytotoxins produced by onion pink root fungus, *Pyrenochaeta terrestris*" *Agric. Biol. Chem.* 43, 2409-2411.
- Sato, H., Konoma, K., Sakamura, S., Furusaki, A., Matsumoto, T. and Matsuzaki, T. 1981. " X-ray crystal structure of pyrenocine A, a phytotoxin from *Pyrenochaeta terrestris*" *Agric. Biol. Chem.* 45, 795-797.
- Seephonkai, P., Isaka, M., Kittakoop, P., Boonudomlap, U. and Thebtaranonth, Y. 2004. "A novel ascochlorin glycoside from the insect pathogenic fungus *Verticillium hemipterigenum* BCC 2370" *J. Antibiot.* 57, 10-16.
- Skehan, P., Storeng, R., Scudiero, D., Monks A., McMahon, J., Vistica, D., Warren, J. T., Bokesch, H., Kenney, S. and Boyd, M. R. 1990. " New colorimetric cytotoxicity assay for anticancer-drug screening" *J. Natl. Cancer Inst.* 82, 1107-1112.
- Soman, A. G., Gloer, J. B., Angawi, R. F., Wicklow, D. T. and Dowd, P. F. 2001. " Vertilecanins: New phenopicolinic acid analogues from *Verticillium lecanii*. " *J. Nat. Prod.* 64, 189-192.
- Stipanovic, R. D. and Bell, A. A. 1976. "Pentaketide metabolites of *Verticillium dahliae*. 3. Identification of (-)-3,4-dihydro-3,8-dihydroxy-1(2H)-naphthalenone [(-)-vermelone] as a precursor to melanin" *J. Org. Chem.* 41 (14), 2468-2469.
- Strongman, D. B., Strunz, G. M., Giguere, P., Yu, C. M. and Calhoun, L. 1988. "Enniatins from *Fusarium avenaceum* isolated from balsam fir foliage and their toxicity to spruce budworm larvae. *Choristoneurea fumiferana* (Clem.)" *J. Chem. Ecol.* 14, 753-764.

- Strunz, G. M., Heissner, C. J., Kakushima, M. and Stillwell, M. A. 1974. "Metabolites of *Hyalodendron* sp.: bisdethiodi(methylthio)hyalodendrin" *Can. J. Chem.* 52, 325-326.
- Strunz, G. M., Kakushima, M. and Stillwell, M. A. 1975. "An epitetrathiodioxopiperazine with 3*S*,6*S* configuration from *Hyalodendron* sp" *Can. J. Chem.* 53, 295-297.
- Takamatsu, S., Rho, M., Masuma, R., Hayashi, M., Komiyama, K., Tanaka, H. and Omura, S. 1994. "A novel testosterone 5 α -reductase inhibitor, 8',9'-dehydroascochlorin produced by *Verticillium* sp. FO-2787" *Chem Pharm Bull.* 42, 953-956.
- Tirunarayanan, M. O. and Sirsi, M. 1957. "Antibiotics from the genus fusarium enniatin B. Part I. Culture studies and antimicrobial activity" *J. Indian Inst. Sci.* 39, 185-194.
- Toki, S., Ando, K., Yoshida, M., Kawamoto, I., Sano, H. and Matsuda, Y. 1992a. "ES-242-1, A novel compound from *Verticillium* sp., binds to a site on *N*-methyl-D-Aspartate receptor that is coupled to the channel domain" *J. Antibiot.* 45, 88-93.
- Toki, S., Ando, K., Kawamoto, I., Sano, H. Yoshida, M. and Matsuda, Y. 1992b. "ES-242-2,-3,-4,-5,-6,-7, and -8, novel bioanthracenes produced by *Verticillium* sp., which act on the *N*-methyl-D-aspartate receptor " *J. Antibiot.* 45, 1047-1054.
- Tomoda, H., Nishida, H., Huang, X., Masuma, R., Kim, Y. K. and Omura, S. 1992a. "New cyclodepsipeptides, enniatins D, E and F produced by *Fusarium* sp. FO-1305" *J. Antibiot.* 45, 1207-1215.

- Tomoda, H., Huang, X. H., Nishida, H., Nagao, R., Okuda, S., Tanaka, H., Omura, S., Arai, H. and Inoue, K. 1992b. "Inhibition of acyl-CoA:cholesterol acyltransferase activity by cyclodepsipeptide antibiotics" *J. Antibiot.* 45, 1626-1632.
- Trifonov, L. S., Dreiding, A. S., Hoesch, L. and Rast, D. M. 1981. "Isolation of four hexaketides from *Verticillium intertextum*" *Helvetica Chimica Acta.* 64(6), 1843-1846.
- Trifonov, L. S., Bieri, J. H., Prewo, R. and Dreiding, A. S. 1982. "The constitution of vertinolide, a new derivative of tetronic acid, produced by *Verticillium intertextum*" *Tetrahedron.* 38(3), 397-403.
- Trifonov, L. S., Bieri, J. H., Prewo, R. and Dreiding, A. S. 1983. "Isolation and structure elucidation of three metabolites from *Verticillium intertextum*: sorbicillin, dihydrosorbicillin and bisvertinoquinol" *Tetrahedron.* 39(24), 4243-4256.
- Trifonov, L. S., Hilpert, H., Floersheim, P., Dreiding, A. S., Rast, D. M., Skrivanova, R., and Hoesch, L. 1986. "Bisvertinols: a new group of dimeric vertinoids from *Verticillium intertextum*" *Tetrahedron.* 42, 3157-3179.
- Tsantrizos, Y. S., Xu, X.-J., Sauriol, F. and Hynes, R. C. 1993. "Novel quinazolinones and enniatins from *Fusarium lateritium* Nees" *Can. J. Chem.* 71, 1362-1367.
- Valadon, L. R. G. and Heale, J. B. 1965. Carotenoids in mutants of *Verticillium albo-atrum*" *J. Gen. Microbiol.* 41, 341-348.
- Visconti, A., Blais, L. A., Apsimon, J.W., Greenhalgh, R. and Miller, J. D. 1992. "Production of enniatins by *Fusarium acuminatum* and *Fusarium compactum* in liquid culture: isolation and characterization of three new enniatins, B₂, B₃, and B₄" *J. Agric. Food Chem.* 40, 1076-1082.

- Viviani, F., Gaudry, M. and Marquet, A. 1990. "Melanin biosynthesis: A study of polyphenol deoxygenation" *J. Chem. Soc. Perkin Trans. I.* 1255-1259.
- Zocher, R., Salnikow, J. and Kleinkauf, H. 1976. "Biosynthesis of Enniatin B" *FEBS Lett.* 71, 13-17.
- Zocher, R. and Kleinkauf, H. 1978. "Biosynthesis of Enniatin B: Partial purification and characterization of the synthesizing enzyme and studies of the biosynthesis" *Biochem. Biophys. Res. Commun.* 81, 1162-1167.
- Zocher, R., Keller, U. and Kleinkauf, H. 1982. "Enniatin Synthetase, a Novel Type of Multifunctional Enzyme Catalyzing Depsipeptide Synthesis in *Fusarium oxysporum*" *Biochemistry.* 21, 43-48.