

REFERENCES

- Abdul Halim A-B. M., Abu Sayeed, M., Sazedur, R. M. & Ashik, M. M. (2006). Characterization and antimicrobial activities of a phthalic acid derivative produced by *Streptomyces bangladeshiensis* a novel species collected in Bangladesh. *Research Journal of Medicine and Medical Sciences*. 1(2): 77-81.
- Acinas, S. G., Marcelino, L. A., Klepac-Ceraj, V. & Polz, M. F. (2004). Divergence and redundancy of 16S rRNA sequences in genomes with multiple *rrn* operons. *Journal of Bacteriology*. 186(9): 2629-2635.
- Adriana, G., Evgenia, V. T., Elitza, D., Peter, N., Thomas, H. (2005). Keratinase production by newly isolated Antarctic actinomycete strains. *World Journal of Microbiology and Biotechnology*. 21(6-7): 831-834.
- Aghighi, S., Sahidi Banjar, G. H. & Saadoun, I. (2004). First report of antifungal properties of a new strain of *Streptomyces plicatus* (strain 101) against four Iranian phytopathogenic isolates of *Verticillium dahlia*, a new horizon in biocontrol agents. *Biotechnology*. 3(1): 90-97.
- Alderson, G. Ritchie, D. A., Cappellano, C., Cool, R. H., Ivanova, N. M., Huddleston, A. S., Flaxman, C. S., Kristufek, V. & Lounes, A. Physiology and genetics of antibiotic production and resistance. *Research Microbiology*. 144: 665-672.
- Altschul, S., Gish, W., Miller, W., Myers, E. & Lipman, D. (1990). Basic local alignment search tool. *Journal of Molecular Biology*. 215 (3): 403-410.
- Al-Zarban, S. S., Al-Musallam, A. A., Abbas, I., Stackebrandt, E. & Kroppenstedt, R. M. (2002). *Saccharomyces halophila* sp. nov., a novel halophilic actinomycete isolated from marsh soil in Kuwait. *International Journal of Systematic and Evolutionary Microbiology*. 52: 555-558.
- Amaro, A., Duarte, E., Amando, A., Ferronha, H. & Botelho, A. (2008). Comparison of three DNA extraction methods for *Mycobacterium bovis*, *M. tuberculosis* and *M. avium* subsp. *avium*. *Letters in Applied Microbiology*. 47(1): 8-11.
- Amoroso, M. J., Castro, G. R., Carlino, F. J., Romero, N. C., Hill, R. T. & Oliver, G. (1998). Screening of heavy metal-tolerant actinomycetes isolated from the Sali River. *Journal of General and Applied Microbiology*. 44: 129-132.
- Anukool, U., Gaze, W. H. & Wellington, E. M. H. (2004). In situ monitoring of Streptothricin production by *Streptomyces rochei* F20 in soil and rhizosphere. *Applied and Environmental Microbiology*. 70(9): 5222-5228.
- Arai, T. (1997). What are actinomycetes? In: *Atlas of Actinomycetes*. Miyadoh, S., Hamada, M., Hotta, K., Kudo, T., Seino, A., Vobis, G. & Yokota, A. (eds.). Japan: Asakura Publishing Co. Ltd. pp. 176-177.

- Arai, T. & Mikami, Y. (1972). Chromogenecity of *Streptomyces*. *Applied Microbiology*. 23: 402-406.
- Armougom, F. & Raoult, D. (2009). Exploring microbial diversity using 16S rRNA high-throughput method. *Review Article: Journal of Computer Science and System Biology*: 2(1): 69-92.
- Aruna, S. Vijayalakshmi, K., Shashikanth, M., Surekha Rani, M. & Jyothi, K. (2008). First report of antimicrobial spectra of novel strain of *Streptomyces tritolerans* (Strain AS1) isolated from earthworm gut (*Eisenia foetida*) against plant pathogenic bacteria and fungi. *Current Research in Biotechnology*. 1(2): 46-55.
- Atta, H. M. (2009). An antifungal agent produced by *Streptomyces olivaceiscleroticus*, AZ-SH514. *World Applied Sciences Journal*. 6(11): 1495-1505.
- Atta, H. M., Bahobail, A. S. & El-Sehrawi, M. H. (2011). Studies on isolation, classification and phylogenetic characterization of antifungal substance produced by *Streptomyces albidoflavus*-143. *New York Science Journal*. 4(3): 40-53.
- Augustine, S. K., Bhavsar, S. P. & Kapadnis, B. P. (2005a). Production of growth independent metabolite active against dermatophytes by *Streptomyces rochei* AK 39. *Indian Journal of Medical Research*. 121: 164-170.
- Augustine, S. K., Bhavsar, S. P. & Kapandis, B. P. (2005b). A non-polyene antifungal antibiotic from *Streptomyces albidoflavus* PU 23. *Journal of Bioscience*. 30(2): 201-211.
- Azuma, E. & Maruyama, H. B. (1974). Biochemically active substances from actinomycetes and other organisms. II Effects of various compounds on motilometry. *The Journal of Antibiotics*. XXVII(3): 185-191.
- Baharlouei, A., Sharifi-Sichi, G. R. & Sahidi Bonjar, G. H. (2010). Identification of an antifungal chitinase from a potential biocontrol agent, *Streptomyces plicatus* strain 101, and its new antagonistic spectrum activity. *The Philippine Agricultural Scientist*. 93(4): 439-440.
- Basic Local Alignment Search Tool*. Retrieved June 12, 2010, from <http://blast.ncbi.nlm.nih.gov/Blast.cgi>
- Berdy, J. (2005). Bioactive microbial metabolites: A personal view. *Journal of Antibiotics*. 58(4): 1-26.
- Berger, J., Jampolsky, L. M. & Goldberg, M. W. (1953). In Guide to the classification and identification of the actinomycetes and their antibiotics. Waksman, S. A. & Lechevalier, H. A. (eds.). Baltimore: The Williams and Wilkins Co. pp. 1-246.

- Bergey's Manual of Determinative Bacteriology, 6th edition. Bergey, D. H., Harrison, F. C., Breed, R. S., Hammer, B. W. & Huntoon, F. M. (eds.). Baltimore: The Williams & Wilkins Co. pp. 1–442.
- Bhoria, G., Singh, G. & Hoondal, G. S. (2009). Optimization of mannanase production from *Streptomyces* sp. PG-08-03 in submerged fermentation. *BioResources*. 4(3): 1130-1138.
- Biol 312 Molecular Biology Lab*. Interpreting DNA sequence. Retrieved June 15, 2010, from http://delliss.people.cofc.edu/virtuallabbook/LabReadings/Interpreting_DNA_SequenceREV.pdf
- Boonlarpradab, C., Kauffman, C. A., Jensen, P. R. & Fenical, W. (2008). Marineosins A and B, cytotoxic spiroaminals from a marine-derived actinomycete. *National Institute of Health Public Access*. 10(24): 5505-5508.
- Bossche, H. V. (1991). Anti-candida drugs: mechanisms of action. In *Candida and candidamycosis*. Tumbay, E., Seeliger, H. P. R. & ANg, O. (editors). New York: Plenum Press.
- Bressollier, P., Letourneau, F., Urdaci, M. & Verneuil, B. (1999). Purification and characterization of a keratinolytic serina proteinase from *S. albidoflavus*. *Applied and Environmental Microbiology*. 65(6): 2570-2576.
- Burstein, S. (1953). Reduction of phosphomolybdic acid by compounds possessing conjugated double bonds. *Analytical Chemistry*. 25(3): 422–424.
- Busch, J. E. & Stutzenberger, F. J. (1997). Amylolytic activity of *Thermomonospora fusca*. *World Journal of Microbiology and Biotechnology*. 13: 637-642.
- Cai, Y., Xue, Q., Chen, Z. & Zhang, R. (2009). Classification and salt-tolerance of actinomycetes in the Qinghai Lake water and Lakeside saline soil. *Journal of Sustainable Development*. (2009). 2(1): 107-110.
- Cao, L., Qiu, Z., You, J., Tan, H. & Zhou, S. (2005). Isolation and characterization of endophytic streptomycete antagonists of fusarium wilt pathogen from surface-sterilized banana roots. *FEMS Microbiology Letters*. 247: 147-152.
- Cassone, A., Bistoni, F., Cenci, E., Pesce, C. D., Tissi, L. & Marconi, P. (1982). Immunopotential of anticancer chemotherapy by *Candida albicans*, other yeasts and insoluble glucan in an experimental lymphoma model. *Sabouraudia*. 20(2): 115-25.

- Charlotte, E. G. S., Gurtler, H., Pedersen, R., Molin, S. & Wilkins, K. (2002). Volatile metabolites from actinomycetes. *Journal of Agricultural and Food Chemistry*. 50(9): 2615-2621.
- Chen, K., Neimark, H., Rumore, P. & Steinman, C. R. (1989). Broad-range DNA probes for detecting and amplifying eubacterial nucleic acids. *FEMS Microbiology Letter*. 57: 19-24.
- Cheng, S. C., Huang, M. Z. & Shiea, J. (2011). Thin layer chromatography/mass spectrometry. *Journal of Chromatography A*. 1218(19): 2700-2711. Gurung, T. D., Sherpa, C., Agrawal, V. P. & Lekhak, B. (2009). Isolation and characterization of antibacterial actinomycetes from soil samples of Kalapatthar; Mount Everest region. *Nepal Journal of Science and Technology*. 10: 173-182.
- Cho, Woong, K., Seo, Y., Yoon, T. & Shin, J. (1999). Purification and structure determination of antifungal phospholipids from a marine *Streptomyces*. *Journal of Microbiology and Biotechnology*. 9(6): 709-715.
- Christova, K., Sholeva, Z. & Chipeva, V. (1995). Application of molecular biological methods in taxonomy of genus *Streptomyces*. *Journal of Culture Collections*. 1: 3-10.
- Chun, J., Lee, J.-H., Jung, Y., Kim, M., Kim, S., Kim, B. K. & Lim, Y.-W. (2007). EzTaxon: a web-based tool for the identification of prokaryotes based on 16S ribosomal RNA gene sequences. *International Journal of Systematic and Evolutionary Microbiology*. 57: 2259-2261.
- Chung, K.-S., Jang, Y.-J., Kim, N.-S., Park, S.-Y., Choi, S.-J., Kim, J.-Y., Ahn, J.-H., Lee, H.-J., Lim, J.-H., Song, J.-H., Ji, J.-H., Oh, J.-H., Song, K.-B., Yoo, H.-S. & Won, M. (2007). Rapid screen of human genes for relevance to cancer using fission yeast. *Journal of Biomolecular Screening*. 12(4): 568-577.
- Clarridge, J. E. (2004). Impact of 16S rRNA gene sequence analysis for identification of bacteria on clinical microbiology and infectious diseases. *Clinical Microbiology Reviews*. 17(4): 840-862.
- Cole, J. R., Chai, B., Farris, R. J., Wang, Q., Kulam, S. A., McGarrell, D. M., Garrity, G. M. & Tiedje, J. M. (2005). The Ribosomal Database Project (RDP-II): sequences and tools for high-throughput rRNA analysis. *Nucleic Acids Research*. 33: D294-D296.
- Coombs, J. T. & Franco, C. M. M. (2003). Isolation and identification of actinobacteria from surface-sterilized wheat roots. *Applied Environmental and Microbiology*. 69: 5603-5608.

- Cooper, B. H. & Silva-Hutner, M. (1985). Yeasts of medical importance. In: *Manual of Clinical Microbiology*. Lennette, E. H., Balows, A., Hausler, Jr., W. J. & Shadomy, H. J. (eds.). Fourth edition. pp: 526-541. Washington, D. C.: American Society for Microbiology.
- Crawford, D. L., Pometto III, A. L. & Crawford, R. L. (1983). Lignin degradation by *Streptomyces viridosporus*: Isolation and characterization of a new polymeric lignin degradation intermediate. *Applied and Environmental Microbiology*. 45(3): 898-904.
- Cross, T. (1981). Aquatic actinomycetes: a critical survey of the occurrence, growth and role of actinomycetes in aquatic habitats. *Journal of Applied Bacteriology*. 50: 397-423.
- Dastagar, S. G., Li, W. J., Dayanand, A., Tang, S. k., Tian, X. P., Zhi, X. Y., Xu, L. H. & Jiang, C. L. (2006). Separation, identification and analysis of pigment (melanin) production in *Streptomyces*. *African Journal of Biotechnology*. 5(8): 1131-1134.
- De Schrijver, A. & De Mot, R. (1999). Degradation of pesticides by actinomycetes. *Critical Reviews in Microbiology*. 25(2): 85-119.
- Dehnad, A. R., Yeganeh, L. P., Bakhshi, R., Mokhtarzadeh, A., Soofiani, S. A., Monadi, A. R., Gasanova, S. & Abusov, R. (2010). Investigation antibacterial activity of *Streptomyces* isolates from soil samples, West of Iran. *African Journal of Microbiology Research*. 4(16): 1685-1693.
- Dellis, S. (2009). Interpreting DNA sequence. *The Virtual Lab Book*. Retrieved May 20, 2011, from http://delliss.people.cofc.edu/virtuallabbook/LabReadings/Interpreting_DNA_SequenceREV.pdf
- dEnfert, C. & Hube, C. (editors). (2007). *Candida: comparative and functional genomics*. Caister: Academic Press.
- Dey, S. & Chaphalkar, S. R. (1998). Thermophilic streptomycete flora of a meteoritic crater. *Actinomycetes*. 9: 37-45.
- Dikin, A., Kamaruzaman, S., Jugah, K. & Idris, A. S. (2007). Effect of different carbon sources and peptones in the production of antimicrobial substances from bacteria against *Schizophyllum commune* FR. *International Journal of Agriculture & Biology*. 9(1): 49-53.
- Edwards, U., Rogall, T., Bloecker, H., Emde, M. & Boettger, E. (1989). Isolation and direct complete nucleotide determination of entire genes: Characterization of a gene coding for 16S ribosomal RNA. *Nucleic Acids Research*. 17: 7843-7853.

- Ensign, J. C., Normand, P., Burden, J. P. & Yallop, C. A. (1993). Physiology of some actinomycete genera. *Research Microbiology*. 144: 657-660.
- Eposito, E., Paulillo, S. M. & Manifo, G. P. (1998). Biodegradation of the herbicide Diuron in soil by indigenous actinomycetes. *Chemosphere*. 37: 541-548.
- Euzeby, J. P. (1997). List of Bacterial Names with Standing in Nomenclature: a Folder Available on the Internet. *International Journal of Systematic Bacteriology*. 47(2): 590-2.
- Euzeby, J. P. (1998, January 28). *List of Prokaryotic names with Standing in Nomenclature*. Retrieved August 10, 2010, from <http://www.bacterio.cict.fr/>
- Fenical, W. H. (2007). Antibiotic drug discovery from the new marine actinomycete genus *Marinomyces*. *California Sea Grant College Program, Paper NMP07_01*.
- Fiedler, H. P., Bruntner, C. Bull, A. T., Ward, A. C., Goodfellow, M., Potterat, O., Puder, C. & Mihm, G. (2005). Marine actinomycetes as a source of novel secondary metabolites. *Antoine van Leeuwenhoek*. 87: 37-42.
- Gajendra, P. S. R., Rajesh, J. S., Vishal, S. & Pushpa, A. (2000). Fingerprinting method for phylogenetic classification and identification of microorganisms based on variation in 16S rRNA gene sequences. *Reprinted from BioTechniques*. 29: 108-116.
- Gandhimathi, R., Arunkumar, M., Selvin, J., Thangavelu, T., Sivaramkrishnan, S., Kiran, G. S., Shanmughapriya, S. & Natarajaseenivasan, K. (2008). Antimicrobial potential of associated marine actinomycetes. *Journal de Mycologie Medicale*. 18: 16-22.
- Gause, G. F., Preobazhenskaya, T. P., Sveshnikova, M. A., Terekhova, L. P. & Maximova, T. S. (1983). A guide for the determination of actinomycetes. Genera *Streptomyces*, *Streptoverticillium* and *Chainia*. Moscow: Nauka. USSR.
- Georgopapadakou, N. H. & Walsh, T. J. (1994). Human mycoses: drugs and targets for emerging pathogens. *Science*. 264: 371-373.
- Getha, K. & Vikineswary, S. (2002). Antagonistic effects of *Streptomyces violaceusniger* strain G10 on *Fusarium oxysporium* f.sp. *cubense* race 4: Indirect evidence for the role of antibiosis in the antagonistic process. *Journal of Industrial Microbiology & Biotechnology*. 28: 303-310.
- Getha, K., Vikineswary, S., Wong, W. H., Seki, T., Ward, A. & Goodfellow, M. (2005). Evaluation of *Streptomyces* sp. Strain g10 for suppression of *Fusarium* wilt and rhizosphere colonization in pot-grown banana plantlets. *Journal of Industrial Microbiology Biotechnology*. 32: 24-32.

- Ghanem, N. B., Sabry, S. A., El-Sherif, Z. M. & El-Ela, G. A. A. (2000). Isolation and enumeration of marine actinomycetes from seawater and sediments in Alexandria. *Journal of General Applied Microbiology*. 46: 105-111.
- Goodfellow, M. & Haynes, J. A. (1984). Actinomycetes in marine sediments. In: *Biological, Biochemical and Biomedical Aspects of Actinomycetes*. Ortiz-ortiz, L., Bojalil, L. F. & Yakoleff, V. (eds.). pp. 453-472. Orlando: Academic Press Inc.
- Goodfellow, M. & Orchard, V. A. (1974). Antibiotic sensitivity of some Nocardioform bacteria and its value as a criterion for taxonomy. *Journal of General Microbiology*. 83: 375-387.
- Goodfellow, M. & Williams, S. T. (1983). Ecology of actinomycetes. *Annual Review of Microbiology*. 37: 189-216.
- Goodfellow, M., Mordarski, M. & Williams, S. T. (eds.). (1984). The biology of the actinomycetes. London: Academic Press INC.
- Goodfellow, M., Schaal, K. P., Zlotnik, H., Sandoval, H., Brown, J. M., Carlotti, A., Colon, L. C., Faibra, D. T., Guerin, V., Gvozdiak, O. R., Kamne-Fotso, M. V., Kim, S. B., Panteix, G., Tarnok, I. I. & Trujillo, M. E. (1993). Identification of some clinically significant actinomycetes. *Research Microbiology*. 144: 647-651.
- Gottlieb, D. (1960). An evaluation of criteria and procedures used in the description and characterization of the Streptomycetes: A cooperative study. *Applied Microbiology*. 9: 55-65.
- Gottlieb, D. (1976). The production and role of antibiotics in soil. *The Journal of Antibiotics*. 29: 7-12.
- Grein, A. & Meyers, S. P. (1958). Growth characteristics and antibiotic production of actinomycetes isolated from littoral sediments and materials suspended in sea water. *Journal of Bacteriology*. 76: 457-463.
- Groth, I., Schumann, P., Rainey, F. A., Martin, K., Schuetze, B. & Augsten, K. (1997). *Bogoriella caseilytica* gen. nov., sp. nov., a new alkaliphilic actinomycete from soda lake in Africa. *International Journal of Systematic Bacteriology*. 47: 788-794.
- Gurung, T. D., Sherpa, C., Agrawal, V. P. & Lekhak, B. (2009). Isolation and characterization of antibacterial actinomycetes from soil samples of Kalapatthap; Mount Everest Region. *Nepal Journal of Science and Technology*. 10: 173-182.
- Hakvag, S., Fjaerik, E., Josefsen, K. D., Ian, E., Ellingsen, T. E. & Zotchev, S. B. (2008). Characterization of *Streptomyces* spp. isolated from the sea surface microlayer in the Trondheim Fjord, Norway. *Marine Drugs*. 6(4): 620-635.
- Hayakawa, M. (2008). Studies on the isolation and distribution of rare actinomycetes in soil. *Actinomycetologica*. 22(1): 12-19.

- Healy, F. G. & Lambert, D. H. (1991). Relationships among *Streptomyces* spp. causing potato scab. *International Journal of Systematic Bacteriology*. 41(4): 479-482.
- Hernandez, M., Rodriguez, J., Soliveri, J., Copa, J. L., Perez, M. I. & Arias, M. E. (1994). Paper mill effluent decolorization by fifty *Streptomyces* strains. *Applied and Environmental Microbiology*. 60(11): 3909-3913.
- Hong, K., Gao, A. H., Xie, Q. Y., Gao, H., Zhuang, L., Lin, H. P., Yu, H. P., Li, J., Yao, X. S., Goodfellow, M. & Ruan, J. S. (2009). Actinomycetes for marine drug discovery isolated from mangrove soils and plants in China. *Marine Drugs*. 7: 24-44.
- Hou, Y. H., Li, F. C., Wang, S. J. Qin, S. & Wang, Q. F. (2008). Intergeneric conjugation in holomycin-producing marine *Streptomyces* sp. strain M095. *Microbiological Research*. 163: 96-104.
- Houghton, P. J. & Raman, A. (1998). Laboratory Handbook for the Fractionation of Natural Extracts. London: Chapman & Hall.
- Huang, Y. F., Tian, L., Sun, Y. & Pei, Y. H. (2006). Two new compounds from marine *Streptomyces* sp. FX-58. *Journal of Asian Natural Products Research*. 8(6): 495-498.
- Huang, Y., Li, W., Wang, L. Lanoot, B., Vancanneyt, M., Rodriguez, C., Liu, Z., Swings, J. & Goodfellow, M. (2004). *Streptomyces glauciniger* sp. nov., a novel mesophilic streptomycete isolated from soil in south China. *International Journal of Systematic and Evolutionary Microbiology*. 54: 2085-2089.
- Ibrahim, H. A. (2006). A biological and biochemical of actinomycetes isolated from Kuwait saline soil-Kuwait. *Journal of Applied Science Research*. 2(10): 809-815.
- ICI Dulux Colour Inspirations. (2008). <http://www.icipaints.com.my>.
- Igantova, Z., Gousterova, A., Spassov, G. & Nedkov, P. (1999). Isoaltion and partial characterization of extracellular keratinase from a wool degrading thermophilic actinomycete strain *Thermoactinomyces candidus*. *Canadian Journal of Microbiology*. 45: 217-222.
- Imada, C., Masuda, S., Kobayashi, T., Hamada-Sato, N. & Nakashima, T. (2010). Isolation and characterization of marine and terrestrial actinomycetes using a medium supplemented with NaCl. *Actinomycetologica*. 24 (1): 12-17.
- Inahashi, Y., Iwatsuki, M., Ishiyama, A., Namatame, M., Tsukashima, A. N., Matsumoto, A., Hirose, T., Sunazuka, T., Yamada, H., Otoguro, K., Takahashi, Y., Omura, S. & Shiomi, K. (2011). Spoxazomicins A-C, novel antitrypanosomal alkaloids produced by an endophytic actinomycete,

Streptosporangium oxazolinicum K07-0460(T). *The Journal of Antibiotics*. 64(4): 303-307.

- Inceoglu, O., Hoogwout, E. F., Hill, P. & Van Elsas, J. D. (2010). Effect of DNA extraction method on the apparent microbial diversity of soil. *Applied and Environmental Microbiology*. 76(10): 3378-3382.
- Intra, B., Mungsuntisuk, I., Nihira, T., Igarashi, Y. & Panbangred, W. (2011). Identification of actinomycete from plant rhizospheric soils with inhibitory activity against *Colletotrichum* spp. the causative agent of anthracnose disease. *BMC Research Notes*. 4(98): 1-9.
- Ismet, A., Vikineswary, S., Parameswari, S., Wong, W. H., Ward, A., Seki, T., Fiedler, H. P. & Goodfellow, M. (2004). Production and chemical characterization of antifungal metabolites from *Micromonospora* sp. M39 isolated from mangrove rhizosphere soil. *World Journal of Microbiology & Biotechnology*. 20: 523-528.
- Iwami, M., Kawai, Y., Kiyoto, S., Terano, H., Koshaka, M., Aoki, H. & Imanaka, H. (1986). A new antitumor antibiotic, chromoxymycin: I. Taxonomic studies on the producing strain: a new subspecies of the genus *Streptomyces*. *The Journal of Antibiotics*. XXXIX(1):6-11.
- Jain, P. K. & Jain, P. C. (2007). Isolation, characterization and antifungal activity of *Streptomyces sampsonii* GS1322. *Indian Journal of Experimental Biology*. 45: 203-206.
- Jarerat, A. & Tokiwa, Y. (2001). Degradation of poly (tetramethylene succinate) by thermophilic actinomycetes. *Biotechnology Letter*. 23: 647-651.
- Jayaraman, S., Manoharan, M. S. & Illanchezian, S. (2008). In-vitro antimicrobial and antitumor activities of *Stevia rebaudiana* (Asteraceae) leaf extracts. *Tropical Journal of Pharmaceutical Research*. 7(4): 1143-1149.
- Jendrossek, D., Tomasi, G., & Kroppenstedt, R. M. (1997). Bacterial degradation of natural rubber: a privilege of actinomycetes? *FEMS Microbiology Letter*. 150: 179-188.
- Jensen, P. R., Dwight, R. & Fenical, W. (1991). Distribution of actinomycetes in near-shore tropical marine sediments. *Applied and Environmental Microbiology*. 57(4): 1102-1108.
- Jensen, P. R., Willaims, P. G., Dong-Chan Oh, Lisa Zeigler & Fenical, W. (2006). Species-specific secondary metabolite production in marine actinomycetes of the genus *Salinispora*. *Applied and Environmental Microbiology*. 73(4): 1146-1152.
- Jiang, C. L. & Xu, L. H. (1993). Actinomycete diversity in unusual habitats. *Actinomycetes*. 4(2): 47-57.

- Jiang, C. L. & Xu, L. H. (1996). Diversity of aquatic actinomycetes in lakes of the Middle Plateau, Yunnan, China. *Applied Environmental and Microbiology*. 62: 249-253.
- Jiang, C. L., Xu, L. H., Yang, Y. R., Wang, L. F. Shi, Z. W. & Guo, G. Y. (1993). A study on alkalophilic actinomycetes in Yunnan. *Actinomycetologica*. 7: 58-64.
- Kaiser, G. E. (March, 1999) Identification of bacteria through biochemical testing. *Biol 230 Microbiology Laboratory Manual*. Retrieved May 20, 2011, from <http://student.ccbcmd.edu/courses/bio141/labmanua/lab8/lab8.html>
- Kataoka, M., Ueda, K., Kudo, T., Seki, T. & Yoshida, T. (1997). Application of the variable region in 16S rDNA to create an index for rapid species identification in the genus *Streptomyces*. *FEMS Microbiology Letter*. 151: 249-255.
- Kathiresan, K., Balagurunathan, R. & Selvam, M. M. (2005). Fungicidal activity of marine actinomycetes against phytopathogenic fungi. *Indian Journal of Biotechnology*. 4: 271-276.
- Kavitha & Vijayalakshmi, M. (2007). Studies on cultural, physiological and antimicrobial activities of *Streptomyces rochei*. *Journal of Applied Sciences Research*. 3(12): 2026-2029.
- Kavithambigai, E., Tan, C. J., Vikineswary, S. & Parameswari, S. (2001). Isolation of actinomycetes from mangrove soil samples and selected marine organisms. In: *New Horizons in Microbiology – Proceedings of the 24th Malaysian Microbiology Society Symposium*. Rofina, Y. O., Aishah, S., Thong, K. L., Zanal, A. M. A. & Kamaruzaman, S. (eds.). pp. 286-289. Cherating, Pahang, Malaysia.
- Khamna, S., Yokota, A. & Lumyong, S. (2009). L-asparaginase production by actinomycetes isolated from some Thai medicinal plant rhizosphere soils. *International Journal of Integrative Biology*. 6(1): 22-26.
- Khan, S. T., Takagi, M. & Shin-ya, K. (2010). Diversity, salt requirement, and antibiotic production of *Actinobacteria* isolated from marine sponges. *Actinomycetologica*. 24(1): 18-23.
- Kim, K-J., Yang, Y-J. & Kim, J-G. (2003). Purification and characterization of chitinase from *Streptomyces* sp. M-20. *Journal of Biochemistry and Molecular Biology*. 36(2): 185-189.
- Kishneth, P. (2010). Biochemical comparison of rice wine produced using common and glutinous rice with three different traditional starter cakes. Master thesis. Institute of Biology and Tropical Preservation: University Malaysia Sabah.
- Kleeberg, I., Hetz, C., Kroppenstedt, R. M., Muller, R-J. & Deckwer, W-D. (1998). Biodegradation of aliphatic-aromatic copolymers by *Thermomonospora fusca*

and other thermophilic compost isolates. *Applied and Environmental Microbiology*. 64(5): 1731-1735.

- Kolbert, C. P. & Persing, D. H. (1999). Ribosomal DNA sequencing as a tool for identification of bacterial pathogens. *Current Opinion in Microbiology*. 2: 299-305.
- Kotake, C., Yamasaki, T., Moriyama, T., Shinoda, M., Komiyama, N., Furumei, T., Konishi, M. & Oki, T. (1992). Butyrolactols A and B, new antifungal antibiotics: Taxonomy, isolation, physic-chemical properties, structure and biological activity. *The Journal of antibiotics*. 45(9): 1442-1450.
- Krempl-Lamprecht, L. (1991). Factors of the pathogenicity of *Candida albicans*: A review. In *Candida and candidamycesis*. Tumbay, E., Seeliger, H. P. R. & Ang, O. (editors). New York: Plenum Press.
- Kreuze, J. F., Suomalainen, S., Paulin, L. & Valkonen, J. P. T. (1999). Phylogenetic analysis of 16S rRNA genes and PCR analysis of the *necl* gene from *Streptomyces* spp. causing common scab, pitted scab, and netted scab in Finland. *Bacteriology*. 89(6): 462-469.
- Kumar, S., Masatahi, N., Dudley, J. & Tamura, K. (2008). MEGA: A biologist-centric software for evolutionary analysis of DNA and protein sequences. *Briefings in Bioinformatics*. 9(4): 299-306.
- Kunoh, H. (2002). Endophytic actinomycetes: attractive biocontrol agents. *Journal of General Plant Pathology*. 68: 249-252.
- Kurtboke, D. I. (1996). Actinomycete identification schemes. *Actinomycetes*. 7(1): 1-3.
- Lam, K. S. (2006). Discovery of novel metabolites from marine actinomycetes. *Current Opinion in Microbiology*. 9(3): 245-251.
- Lazim, H., Slama, N., Abbassi, M. Barakallah, I., Ben Hassen, A. & Limam, F. (2008). Protoplasting impact on polyketide activity and characterization of the interspecific fusants from *Streptomyces* spp. *African Journal of Biotechnology*. 7(17): 3155-3161.
- Lee, Y. J., Lee, J. Y., Jung, H. W. & Hwang, B. K. (2005). *Streptomyces koyangensis* sp. nov., a novel actinomycete that produces 4-phenyl-3-butenic acid. *International Journal of Systematic and Evolutionary Microbiology*. 55: 257-262.
- Lindner, F., Junk, R., Neseemann, G. & Schmidt-Thome, J. (1958). In *Approved Lists of Bacterial Names*. *International Journal of Systematic Bacteriology*. Skerman, V. B. D., McGowan, V. & Sneath, P. H. A. (eds). 30(1): 388.

- Linós, A., Berekaa, M. M., Steinbuchel, A., Kim, K. K., Sproer, C. & Kroppenstedt, R. M. (2002). *Gordonia westfalica* sp. nov., a novel rubber-degrading actinomycete. *International Journal of Systematic and Evolutionary Microbiology*. 52: 1133-1139.
- Linós, A., Steinbuchel, A., Sproer, C. & Kroppenstedt, R. M. (1999). *Gordonia polyisoprenivorans* sp. nov., a rubber-degrading actinomycete isolated from an automobile tyre. *International Journal of Systematic Bacteriology*. 49: 1785-1791.
- Lo, C. W., Lai, N. S., Cheag, H. Y., Wong, N. K. I. & Ho, C. C. (2002). Actinomycetes isolated from soil samples from the Crocker range Sabah. Asean Review of Biodiversity and Environmental Conservation (ARBEC). July-September 2002: 1-7.
- Locci, R. (1989). Streptomycetes and related genera. In: Bergey's Manual of Systematic Bacteriology, Volume 4. Williams, S. T., Sharpe, M. E., Holt, J. G., Murray, R. G. E., Brenner, D. J., Krieg, N. R., Moulder, J. W., Pfenning, N., Sneath, P. H. A. & Staley, J. T. (eds.). (1989). Baltimore: Williams & Wilkins. pp. 2451-2508.
- Macedo, J. M. B., Gottschalk, L. M. F. & Bon, E. P. S. (1999). Calcium carbonate mediates higher lignin peroxidase activity in the culture supernatant of *Streptomyces viridosporus* T7A. *Brazilian Journal of Chemical Engineering*. 16(2).
- Magarvey, N. A., Keller, J. M., Bernan, V., Dworkin, M. & Sherman, D. H. (2004). Isolation and characterization of novel marine-derived actinomycete taxa rich in bioactive metabolites. *Applied and Environmental Microbiology*. 70(12): 7520-7529.
- Maha A. H., Moustafa Y. El-Naggar & Wafa Y. S. (2001). Physiological factors affecting the production of an antimicrobial substance by *Streptomyces violatus* in batch cultures. *Egyptian Journal of Biology*. 3: 1-10.
- Makkar, N. S. & Cross, T. (1992). Actinoplanetes in soil and plant litter from freshwater habitats. *Journal of Applied Microbiology*. 52: 209-218.
- Manna, A., Giri, P. & Paul, A. K. (1999). Degradation of poly(3-hydroxybutyrate) by soil streptomycetes. *World Journal of Microbiology and Biotechnology*. 15: 705-709.
- Manteca, A., Alvarez, R., Salazar, N., Yague, P. & Sanchez, J. (2008). Mycelium differentiation and antibiotic production in submerged cultures of *Streptomyces coelicolor*. *Applied and Environmental Microbiology*. 74(12): 3877-3886.
- Marston, A. (2011). Thin-Layer chromatography with biological detection in phytochemistry. *Journal of Chromatography A*. 1218(19): 2676-2683.

- Maskey, R. P., Kock, I., Helmke, E. & Laatsch, H. (2003). Isolation and structure determination of phenazostatin D, a new phenazine from a marine actinomycete isolate *Pseudonocardia* sp. B6273. *Verlag der Zeitschrift für Naturforschung Tubingen*. 58b: 692-694.
- Matsumoto, A., Takahashi, Y., Mochizuki, M., Seino, A., Iwai, Y. & Omura, S. (1998). Characterization of actinomycetes isolated from fallen leaves. *Actinomycetologica*. 12 (1): 46-48.
- Mayfield, C. I., Williams, S. T., Ruddick, S. M. & Hatfield, H. L. (1972). Studies on the ecology of actinomycetes in soil – iv. Observations on the form and growth of streptomycetes in soil. *Soil of Biology and Biochemistry*. 4: 79-91.
- Mevs, U., Stackebrandt, E., Schumann, P., Gallikowski, C. A. & Hirsch, P. (2000). *Modestobacter multiseptatus* gen. nov., sp. nov., a budding actinomycete from soils of the Asgard Range (transantarctic mountains). *International Journal of Systematic Evolutionary and Microbiology*. 50: 337-346.
- Meyers, P. R., Goodwin, C. M., Bennett, J. A., Aken, B. L., Price, C. E. & Rooyen J. M. (2004). *Streptomyces africanus* sp. Nov., a novel streptomycete with blue aerial mycelium. *International Journal of Systematic and Evolutionary Microbiology*. 54: 1531-1535.
- Microbugz*. Nitrate reduction test. Retrieved January 5, 2010, from http://www.austincc.edu/microbugz/nitrate_reduction.php
- Migueluez, E. M., Hardisson, C. & Manzanal, M. B. (1999). Hyphal death during colony development in *Streptomyces antibioticus*: Morphological evidence for the existence of a process of cell deletion in a multicellular prokaryote. *The Journal of Cell Biology*. 145(3): 515-525.
- Miller, E. D., Kauffman, C. A., Jensen, P. R. & Fenical, W. (2006). Piperazimycins: cytotoxic hexadepsipeptides from a marine-derived bacterium of the genus *Streptomyces*. *Journal of Organism Chemistry*. 72: 323-330.
- Miyajima, K., Tanaka, F., Takeuchi, T. & Kuninaga, S. (1998). *Streptomyces turgidiscabies* sp. nov. *International Journal of Systematic Bacteriology*. 48: 495-502.
- Montiel, M. D., Rodriguez, J., Perez-Leblic, M. I., Hernandez, M., Arias, M. E. & Copa-Patino, J. L. (1999). Screening of mannanase in actinomycetes and their potential application in the biobleaching of pine kraft pulps. *Applied Microbiology and Biotechnology*. 52: 240-245.
- Moore, B. S., Trischman, J. A., Seng, D., Kho, D., Jensen, P. R. & Fenical, W. (1999). Salinamides, antiinflammatory depsipeptides from a marine Streptomycete. *Journal of Organisms Chemistry*. 64: 1145-1150.

- Moran, M. A., Rutherford, L. T. & Hodson, R. E. (1995). Evidence for indigenous *Streptomyces* population in a marine environment determined with a 16S rRNA probe. *Applied Environmental Microbiology*. 61(10): 3695-3700.
- Moustafa Y. El-Naggar, Maha A. H. & Wafa Y. S. (2001). Isolation and characterization of an antimicrobial substance produced by *Streptomyces violatus*. *Egyptian Journal of Biology*. 3: 11-21.
- Muramatsu, H. (2008). Development of a simple-identification method for actinomycetes based on partial 16S rDNA sequences as exemplified by a comparative study of Malaysian and Japanese actinomycetes. *Actinomycetologica*. 22(1): 30-33.
- Narayana, K. J. P. & Vijayalakshmi, M. (2009). Chitinase production by *Streptomyces* sp. ANU6277. *Brazilian Journal of Microbiology*. 40: 725-733.
- Narayana, K. J. P., Prabhakar, P., Vijayalakshmi, M., Venkateswarlu, Y. & Krishna, P. S. J. (2008). Study on bioactive compounds from *Streptomyces* sp. ANU 6277. *Polish Journal of Microbiology*. 57(1): 35-39.
- Nawaz, K., Hussain, K., Choudary, N., Majeed, A., Ilyas, U., Ghani, A., Lin, F., Ali, K., Afhgan, S., Raza, G. & Lashari, M. I. (2011). Eco-friendly role of biodegradation against agricultural pesticides hazards. *African Journal of Microbiology Research*. 5(3): 177-183.
- Newman, D. J., Jensen, P. R., Clement, J. J. & Acebal, C. (1989). Novel activities from marine-derived microorganisms in Novel Microbial Products for Medicine and Agriculture. Demam, A. L., Somkuti, G. A., Cevera, H. & Rossmoore, H. W. (eds). Society for Industrial Microbiology. Pg: 239-251.
- Nikolova, S. A., Tzekova, N. & Yocheva, L. (2005). Taxonomy of *Streptomyces* sp. Strain 3B. *Journal of Culture Collection*. 4(1): 36-42.
- Nishimura, H., Kimura, T. & Kuroya, M. (1953). In Approved Lists of Bacterial Names. *International Journal of Systematic Bacteriology*. Skerman, V. B. D., McGowan, V. & Sneath, P. H. A. (eds). 30(1): 375.
- Ogunmwonyi, I. H., Mazomba, N., Mabinya, L., Ngwenya, E., Green, E., Akinpelu, D. A., Olaniran, A. O., Bernard, K. & Okoh, A. I. (2010). Studies on the culturable marine actinomycetes isolated from the Nahoon beach in the Eastern Cape Province of South Africa. *African Journal of Microbiology Research*. 4(21): 2223-2230.
- Okami, Y. & Hotta, K. (1988). Search and discovery of new antibiotics. In: Actinomycetes in Biotechnology. Goodfellow, M., Williams, S. T. & Mordarski, M. (eds.). pp: 33-67. San Diego: Academic Press.

- Okami, Y. & Okazaki, T. (1974). Studies on marine microorganisms. III. Transport of spores of actinomycetes into shallow sea mud and the effect of salt and temperature on their survival. *Journal of Antibiotics*. 27: 240-247.
- Okami, Y. (1975). The development of actinomycetology in Japan. An introductory review of the studies on actinomycetes with reference to taxonomy. *Japan Journal of Microbiology*. 19(6): 411-417.
- Okazaki, K. & Okami, Y. (1975). Actinomycetes tolerant to increased NaCl concentration and their metabolites. *Journal of Fermentation Technology*. 53: 833-840.
- Okazaki, K. & Tagawa, K. (1991). Purification and properties of chitinase from *Streptomyces cinereorubber*. *Journal of Fermentation and Bioengineering*. 71: 237-241.
- Olano, C., Mendez, C. & Salas, J. A. (2009). Antitumor compounds from marine actinomycetes. *Marine Drugs*. 7: 210-248.
- Oniscu, C., Cascaval, D., Galaction, A. I. & Dumitru, I. F. (2000). Study on reactive extraction of erythromycin. *Roum Biotechnology Letter*. 5(6): 439-447.
- Osada, H. (2001). An overview on the diversity of actinomycete metabolites. *Actinomycetologica*. 15(1): 11-14.
- Oskay, M. (2009). Antifungal and antibacterial compounds from *Streptomyces* strains. *African Journal of Biotechnology*. 8(13): 3007-3017.
- Oskay, M., A. Usame, T. & Cem, Azeri. (2004). Antibacterial activity of some actinomycetes isolated from farming soils of Turkey. *African Journal of Biotechnology*. 3(9): 441-446.
- Ouhdouch, Y., Barakate, M. & Finance, C. (2001). Actinomycetes of Moroccan habitats: isolation and screening for antifungal activities. *European Journal of Soil Biology*. 37: 69-74.
- Pagani, H., Langini, G., Tamoni, G. & Coronelli, C. (1973). Tetrenolin and SS/1018 A, antibacterial agents isolated from a strain of actinomycetales. *The Journal of Antibiotics*. XXVI(1): 1-6.
- Pandey, A., Shukla, A. & Majumdar, S. K. (2005). Utilization of carbon and nitrogen sources by *Streptomyces kanamyceticus* M27 for the production of an anti bacterial antibiotic. *African Journal of Biotechnology*. 4(9): 909-910.
- Park, D. H., Kim, J. S., Kwon, S. W., Wilson, C., Yu, Y. M., Hur, J. H. & Lim, C. K. (2003). *Streptomyces luridiscabiei* sp. nov., *Streptomyces puniscabiei* sp. nov. and *Streptomyces niveiscabiei* sp. nov., which cause potato common scab disease in Korea. *International Journal of Systematic Evolutionary and Microbiology*. 53: 2049-2054.

- Park, D. H., Nam, C., Lee, J. M., Lee, D. & Kim, B. S. (2008). Antifungal activity of valinomycin, a peptide antibiotic produced by *Streptomyces* sp. strain M10 antagonistic to *Botrytis cinerea*. *Journal of Microbiology Biotechnology*. 18(5): 880-884.
- Pasti, M. B. & Belli, M. L. (1985). Cellulolytic activity of actinomycetes isolated from termites (Termitidae) gut. *FEMS Microbiology Letter*. 26: 107-112.
- Pasti, M. B., Pometto III, A. L., Nuti, M. P. & Crawford, D. L. (1990). Lignin solubilizing ability of actinomycetes isolated from termite (Termitidae) gut. *Applied and Environmental Microbiology*. 56: 2213-2218.
- Peczynska-Czoch, W. & Mordarski, M. (1988). Actinomycete enzymes. In: *Actinomycetes in Biotechnology*. Goodfellow, M., Williams, S. T. & Mordarski, M. (eds.). pp. 219-283. San Diego: Academic Press.
- Petrolini, B., Quaroni, S., Saracchi, M. & Sardi, P. (1991). Studies on the streptomycete population inhabiting plant roots. *Actinomycetes*. 2: 56-65.
- Pettett, L. M. & Kurbotke, D. I. (2004). Development of an environmentally friendly biofertilizer with keratin degrading and antibiotic producing actinomycetes. *Actinomycetologica*. 18: 34-42.
- Phipps, R. K., Blunt, J. W., Cole, A. L. J. & Munro, M. H. G. (2004). Anthracycline derivatives from a marine-derived New Zealand *Streptomyces*. *Issue in Honour of Prof. Rod Rickards*. ISSN 1424-6376, ARKIVOC (X): 94-100.
- Ping, X., Takahashi Y., Seino A., Iwai Y. & Omura, S. (2004). *Streptomyces scabrisporus* sp. Nov. *International Journal of Systematic and Evolutionary Microbiology*. 54: 577-581.
- Pisano, M. A., Sommer, M. J. & Brancaccio, L. (1989). Isolation of bioactive actinomycetes from marine sediments using rimfamycin. *Applied Microbiology Biotechnology*. 31: 609-612.
- Pisano, M. A., Sommer, M. J. & Lopez, M. M. (1986). Application of pretreatments for the isolation of bioactive actinomycetes from marine sediments. *Applied Microbiology Biotechnology*. 25: 285-288.
- Polz, M. F. & Cavanaugh, C. M. (1998). Bias in template-to-product ratios in multitemplate PCR. *Applied Environmental and Microbiology*. 64(10): 3724-3730.
- Pontes, D. S., Lima, B. C. I., Chartone, S. E. & Nascimento, A. M. (2007). Molecular approaches: Advantages and artifacts in assessing bacterial diversity. *Journal of Industrial Microbiology and Biotechnology*. 34: 463-473.
- Porter, J. N. (1971). Prevalence and distribution of antibiotic-producing actinomycetes. *Advances in Applied Microbiology*. 14: 73-92.

- Pridham, T. G. & Lyons, A. J. (1960). *Streptomyces albus* (Rossi-doria) Waksman et Henrichi: Taxonomic study of strains labeled *Streptomyces albus*. *Taxonomy of S. albus*. 81: 431-441.
- Pridham, T. G., Hesseltine, C. W. & Benedict, R. G. (1958). A guide for the classification of streptomycetes according to selected groups. *Applied Microbiology*. 6: 52-79.
- Qiagen-QIAquick PCR Purification Kit. Retrieved May 29, 2011, from <http://www.qiagen.com/products/dnacleanup/gelpcrsicleanupsystems/qiaquickpcrpurificationkit.aspx?rp=1000254&rpq=0#Tabs=t1>
- Radwan, S. S., Barabas, G., Sorkhoh, N. A., Damjanovich, S., Szabo, I., Szollo'si, J., Matko, J., Penyige, A., Hirano, T. & Szabo, I. M. (1998). Hydrocarbon uptake by *Streptomyces*. *FEMS Microbiology Letter*. 169: 87-94.
- Ramachandra, M., Crawford, D. L. & Hertel, G. (1988). Characterization of an extracellular lignin peroxidase of the lignocellulolytic actinomycete *Streptomyces viridosporus*. *Applied and Environmental Microbiology*. 54(12): 3057-3063.
- Ravel, J., Amoroso, M. J., Colwell, R. R. & Hill, R. T. (1998). Mercury-resistant actinomycetes from the Chesapeake Bay. *FEMS Microbiology Letter*. 162: 177-184.
- Reddy, N. G., Ramakrishna, D. P. N. & Raja Gopal, S. V. (2011). A morphological, physiological and biochemical studies of marine *Streptomyces rochei* (MTCC10109) showing antagonistic activity against selective human pathogenic microorganisms. *Asian Journal of Biological Sciences*. 4(1): 1-14.
- Reyes, G. D. & Chen, Y. C. (1993). Isolation and identification of actinomycetes for industrial use. *The Philippine Journal of Biotechnology*. 4(1): 101-116.
- Ribosomal Database Project. (1992). Retrieved May 18, 2011, from http://rdp.cme.msu.edu/seqmatch/seqmatch_help.jsp
- Rifaat, H. M., Nagieb, Z. A. & Ahmed, Y. M. (2005). Production of xylanases by *Streptomyces* species and their bleaching effect on rice straw pulp. *Applied Ecology and Environmental Research*. 4(1): 151-160.
- Rintala, H., Nevalainen, A., Ronka, E. & Suutari, M. (2001). PCR primers targeting the 16S rRNA gene for the specific detection of streptomycetes. *Molecular and Cellular Probes*. 15: 337-347.
- Rizk, M., A-Rahman, T. & Metwally, I. (2007). Screening of antagonistic activity in different *Streptomyces* species against some pathogenic microorganisms. *Journal of Biological Sciences*. 7(8): 1418-1423.

- Roux, K. H. (1995). Optimization and troubleshooting in PCR. *Genome Research*. 4: S185-S194.
- Rowbotham, T. J. & Cross, T. (1977). Ecology of *Rhodococcus coprophilus* and associated actinomycetes in fresh water and agricultural habitats. *Journal of General Microbiology*. 100: 231-240.
- Sadowsky, M. J., Kinkel, L. L., Bowers, J. H. & Schottel, J. L. (1996). Use of repetitive intergeni: DNA sequences to classify pathogenic and disease-suppressive *Streptomyces* strains. *Applied and Environmental Microbiology*. 62(9): 3489-3493.
- Sahin, N. & Ugur, A. (2003). Investigation of the antimicrobial activity of some *Streptomyces* isolates. *Turkish Journal of Biology*. 27: 79-84.
- Saida, R., Aziz, F., Anake, K. & Rob, V. S. (2004). Antimicrobial activity of utenospongins B, a metabolite from the marine sponge *Hippospongia communis* collected from the Atlantic Coast of Morocco. *Marine Drugs*. 2: 147-153.
- Saini, H. S., Chadha, B. S., Bhaskar, S., Singh, S., Kumar, R. & Mahajan, M. (1998). Short note: biodegradation of chlorobenzoates by actinomycetes. *World Journal of Microbiology and Biotechnology*. 14: 785-786.
- Sakai, T., Sameshima, T., Matsufuji, M., Kawamura, N., Dobashi, K. & Mizui, Y. (2004). Pladienolides, new substances from culture of *Streptomyces platensis* Mer-11107. Taxonomy, fermentation, isolation and screening. *The Journal of Antibiotics*. 57(3): 173-179.
- Sanglier, J. J., Haag, H., Huck, T. A. & Fehr, T. (1993a). Novel bioactive compounds from actinomycetes: a short review (1988-1992). *Research Microbiology*. 144: 633-642.
- Sanglier, J. J., Wellington, E. M. H., Behal, V., Fiedler, H. P., Ghorbel, R. E., Finance, C., Hacene, M., Kamoun, A., Mercer, D. K., Prinzi, S. & Trigo, C. (1993b). Novel bioactive compounds from actinomycetes. *Research Microbiology*. 144: 661-662.
- Schizosaccharomyces pombe*. Retrieved January 1, 2011, from <http://megasun.bch.umontreal.ca/People/lang/species/spo/spogeneral.html>
- Schneegurt, M. A., Dore, S. Y. & Kulpa, C. F. Jr. (2003). Direct extraction of DNA from soils for studies in microbial ecology. *Current Issues of Molecular Biology*. 5(1): 1-8.
- Schneider, K., Rose, H., Vikineswary, S., Jones, A. L., Goodfellow, M., Nicholson, G., Beil, W., Sussmuth, R. D. & Fiedler, H. P. (2007). Nocardichelins A and B,

- siderosphores from *Nocardia* strain Acta 3026#. *Journal of Natural Product*. 70: 932-935.
- Selvakumar, D., Ashokkumar, B. & Dhevendaran, K. (2009). Food-grade pigments from *Streptomyces* sp. isolated from the marine sponge *Callyspongia diffusa*. *Food Research International*. 42: 487-492.
- Selvameenal, L., Radhakrishnan, M. & Balagurunathan, R. (2009). Antibiotic pigment from desert oil actinomycetes; biological activity, purification and chemical screening. *Indian Journal of Pharmaceutical Sciences*. 71(5): 499-504.
- Shimizu, M., Nakagawa, Y., Sato, Y., Furumai, T., Igarashi, Y., Onaka, H., Yoshida, R. & Kunoh, H. (2000). Studies on endophytic actinomycetes (I) *Streptomyces* sp. Isolated from *Rhododendron* and its antifungal activity. *Journal of General Plant Pathology*. 66: 360-366.
- Shirling, E. B. & Gottlieb, B. (1966). Methods for characterization of *Streptomyces* species. *International Journal of Systematic Bacteriology*. 16(3): 313-340.
- Shomura, T., Yoshida, J., Amano, S. & Kojima, M. (1979). Studies on *Actinomycetales* producing antibiotics only on agar culture. I. Screening, taxonomy and morphology-productivity relationship of *Streptomyces halstedii*, strain SF-1993. *Journal of Antibiotics*. 32: 427-435.
- Singh, R., Kapoor, V. & Kumar, K. (2011). Influence of carbon and nitrogen sources on the α -amylase production by a newly isolated thermophilic *Streptomyces* sp. MSC702 (MTCC10772). *Asian Journal of Biotechnology*. 3(6): 540-553.
- Skarbek, J. D. & Brady, L. R. (1978a). In Approved Lists of Bacterial Names. *International Journal of Systematic Bacteriology*. Skerman, V. B. D., McGowan, V. & Sneath, P. H. A. (eds). 30(1): 375.
- Skarbek, J. D. & Brady, L. R. (1978b). *Streptomyces cavourensis* sp. nov. (nom. rev.) and *Streptomyces cavourensis* subsp. *washingtonensis* subsp. nov., a chromomycin-producing subspecies. *International Journal of Systematic Bacteriology*. 28(1): 45-53.
- Skerman, V. B. D. (1967). A guide to the identification of the genera of bacteria. Baltimore: The Williams & Wilkins Co. pp. 218-220.
- Song, J. Lee, S. C., Kang, J. W., Baek, H. J. & Suh, J. W. (2004) Phylogenetic analysis of *Streptomyces* spp. isolated from potato scab lesions in Korea on the basis of 16S rRNA gene and 16S-23S rDNA internally transcribed spacer sequences. *International Journal of Systematic and Evolutionary Microbiology*. 54: 203-209.
- Stackebrandt, E., Liesack, W. & Witt, D. (1992). Ribosomal RNA and rDNA sequence analyses. *Gene*. 115: 255-260.

- Staneck, J. L. & Roberts, G. D. (1974). Simplified approach to identification of aerobic actinomycetes by thin-layer chromatography. *Applied Microbiology*. 28(2): 226-231.
- Striegel, M. F. & Hill, J. (1996). Thin-layer chromatography for binding media analysis. Los Angeles: The Getty Conservation Institute.
- Suga, M., Goto, A. & Hatakeyama, T. (2007). Electrically induced protein release from *Schizosaccharomyces pombe* cells in a hyperosmotic condition during and following a high electropulsation. *Journal of Bioscience and Bioengineering*. 103(4): 298-302.
- Suzuki, K-I., Sasaki, J., Uramoto, M., Nakase, T. & Komagata, K. (1997). *Cryobacterium psychrophilum* gen. nov., sp. nov., nom. rev., comb. nov., an obligately psychrophilic actinomycete to accommodate “*Curtobacterium psychrophilum*” Inoue and Komagata 1976. *International Journal of Systematic Bacteriology*. 47: 474-478.
- Taechowisan, T., Peberdy, J. F. & Lumyong, S. (2003). Isolation of endophytic actinomycetes from selected plants and their antifungal activity. *World Journal of Microbiology and Biotechnology*. 19: 381-385.
- Takahashi, Y., Matsumoto, A., Seino, A., Iwai, Y. & Omura, S. (1996). Rare actinomycetes isolated from desert soils. *Actinomycetologica*. 10: 91-97.
- Takaine, M. & Mabuchi, I. (2007). Properties of actin from the fission yeast *Schizosaccharomyces pombe* and interaction with fission yeast profiling. *The Journal of Biological Chemistry*. 282(30): 21683-21694.
- Takizawa, M., Colwell, R. R. & Hill, R. T. (1993). Isolation and diversity of actinomycetes in the Chesapeake Bay. *Applied and Environmental Microbiology*. 59(4): 997-1002.
- Tan, C. J. (2007). Biological and chemical characterization of actinomycetes isolated from selected marine microorganisms from peninsular Malaysia. Master of Science thesis. Faculty of Science: University of Malaya.
- Tan, C. J., How, K. C., Loh-Mia, P. P., Iset, A., Getha, K., Seki, T. & Vikineswary, S. (2002). Bioactivity of selected actinomycetes against *Ganoderma boninense*. *Asia Pacific Journal of Molecular Biology and Biotechnology*. 10(2): 119-125.
- Tan, C. J., Kavithambigai, E., Vikineswary, S. & Parameswari, S. (2001). Biodiversity of actinomycetes isolated from marine organisms and coastal resources. 24th *Symposium of The Malaysian Society for Microbiology*. Pg: 10-12.
- Tan, G. Y. A., Christable L., Sim, H. L., Nik Zaharah N. A. A., Sarini S. & Vikineswary, S. (2005). Survey of culturable actinomycetes from marine

macroorganisms and mangrove areas of Langkawi Islands. *Malaysian Journal of Science*. 24: 69-75.

- Tan, G. Y. A., Vikineswary, S., Christable, L. J., Thong, K. L., & Affendi, Y. A. (2004). Antagonistic activities of selected actinomycetes isolated from marine organisms against *Candida albicans*, *C. parasilopsis* and selected pathogenic fungus and bacteria. *Marine Science into the New Millenium: New Perspectives & Challenges*, Phang *et al.* (eds.). pp. 489-495.
- Tendler, M. D. & Burkholder, P. R. (1960). Studies on the thermophilic actinomycetes: I. Methods of cultivation. 9: 394-399.
- Terkina, I. A., Drukker, V. V., Parfenova, V. V. & Kostornova, T. Y. (2002). The biodiversity of actinomycetes in Lake Baikal. *Microbiology*. 71: 346-349.
- Thamchaipenet, A., Chaipeckdee, V., Kawasaki, H. & Seki, T. (2001). Partial 16S rDNA analysis of anti-fungal producing streptomycetes isolated from coastal areas of Thailand. In: *Biotechnology for Sustainable Utilization of Biological Resources in the Tropics*. Murooka, Y., Yoshida, T. Seki, T., Matangkasombut, P., Espino, T. M., Soetisna, U. & Abdul KARim, M. I. (eds.). pp: 132-137. Osaka: International Center for Biotechnology.
- Tian, X. L., Cao, L. X., Tan, H. M., Zeng, Q. G., Jia, Y. Y., Han, W. Q. & Zhou, S. N. (2004). Study on the communities of endophytic fungi and endophytic actinomycetes from rice and their antipathogenic activities *in vitro*. *World Journal of Microbiology & Biotechnology*. 20: 303-309.
- Tortoli, E. (2003). Impact of genotypic studies on mycobacterial taxonomy: the new mycobacteria of the 1990's. *Clinical Microbiology Reviews*. 16: 319-354.
- Tresner, H. D., Hayes, J. A. & Backus, E. J. (1968). Differential tolerance of Streptomycetes to sodium chloride as a taxonomic aid. *Applied Microbiology*. 16(8): 1134-1136.
- Tsukiura, H., Okanishi, M., Koshiyama, H., Ohmori, T., Miyaki, T. & Kawaguchi, H. (1964). In Approved Lists of Bacterial Names. *International Journal of Systematic Bacteriology*. Skerman, V. B. D., McGowan, V. & Sneath, P. H. A. (eds). 30(1): 370.
- Vairappan, C. S., Daitoh, M., Suzuki, M., Abe, t. & Masuda, M. (2001). Antibacterial halogenated metabolites from Malaysian *Laurencia* species. *Phytochemistry*. 58: 291-297.
- Vanajakumar, S., Selvakumar, N. & Natarajan, R. (1991) Antagonistic properties of actinomycetes isolated from molluscs of the Porto Novo region, South India. In: *Bioactive compounds from marine organisms*. Thompson, M. F., Sarojini, R. & Nagabushanam (eds.). New Delhi: Oxford & IBH Publishing Co. pp. 267-274.

- Veiga, M., Esparis, A. & Fabregas, J. (1983). Isolation of cellulolytic actinomycetes from marine sediments. *Applied and Environmental Microbiology*. 46(1): 286-287.
- Vercesi, A., Nasini, G. & Locci, R. (1992). Biological and chemical characterization of the antibiotic activity of *Streptomyces* species isolated from grapevine carposphere. *Actinomycetes*. 3: 12-18.
- Vikineswary, S. (2005). Marine bacteria-novel resources for biotechnology. *MIMA Bulletin*. 24-27.
- Vikineswary, S., Christabel, L. J., Thong, K. L., Tan, G. Y. A. & Affendi, Y. A. (2008). Sponges of Tioman and their actinomycetes inhabitants. In *Natural History of Pulau Tioman Group of Islands*. Phang, S. M., Affendi, Y. A., Jillian, O. L. S. & Abdul Jamal, M. (eds.): 35-41.
- Vikineswary, S., Christable, L. J., Thong, K. L., Tan, G. Y. A. & Affendi, Y. A. (2006). Sponges and their actinomycete inhabitants. *MIMA Bulletin*. 14-16.
- Vikineswary, S., Getha, K., Ismet, A., Wong, W. H., Seki, T. & Toshiomi, Y. (1998). Indigenous marine-derived actinomycetes and their potential as sources of antifungal compounds. *Annual Reports of IC Biotech*. 21: 947-951.
- Vikineswary, S., Ismet, A., Thong, K. L. & Parameswari, S. (2003). Rare actinomycetes in mangrove soils and leaf litter. *Journal Bioscience*. 14(1): 105-109.
- Vikineswary, S., Nadaraj, P., Wong, W. H. & Balabaskaran, S. (1997). Actinomycetes from a tropical mangrove ecosystem – Antifungal activity of selected strains. *Asia Pacific Journal of Molecular Biology and Biotechnology*. 5(2): 81-86.
- Vobis, G. (1997). Morphology of actinomycetes. In: *Atlas of Actinomycetes*. Miyadoh, S., Hamada, M., Hotta, K., Kudo, T., Seino, A., Vobis, G. & Yokota, A. (eds.). pp. 180-191. Japan: The Society for Actinomycetes.
- Waksman, S. A. & Henrici, A. T. (1948). In Breed, R. S., Murray, E. G. D. & Hitchens, A. P. (eds). *Bergey's Manual of Determinative Bacteriology*, 6th edition. Baltimore: The William & Wilkins Co. Pp: 929-980.
- Waksman, S. A. (1959). *The Actinomycetes: Nature, occurrence and activities*. Vol I. Baltimore: The Williams & Wilkins Company.
- Waksman, S. A. (1967). *The Actinomycetes: A summary of current knowledge*. New York: The Ronald Press Company.
- Waldron, Jr., C. R., Becker-Vallone, C. A. & Eveleigh, D. E. (1986). Isolation and characterization of a cellulolytic actinomycete *Microbiospora bispora*. *Applied Microbiology and Biotechnology*. 24: 477-486.

- Weisburg, W. G., Barns, S. M., Pelletier, D. A. & Lane, D. J. (1991). 16S ribosomal DNA amplification for phylogenetic study. *Journal of Bacteriology*. 173(2): 697-703.
- Weyland, H. (1969). Actinomycetes in North Sea and Atlantic Ocean sediments. *Nature*. 223: 858.
- Whitehouse, C. A., Baldwin, C., Sampath, R., Blyn, L. B., Melton, R., Li, F., Hall, T. A., Harpin, V., Matthews, H., Tediashvili, M., Jaiani, E., Kokashvili, T., Janelidze, N., Grim, C., Colwell, R. R. & Huq, A. (2010). Identification of pathogenic *Vibrio* species by multilocus PCR-electrospray ionization mass spectrometry and its application to aquatic environments of the former soviet Republic of Georgia. *Applied and environmental Microbiology*. 76(6): 1996-2001.
- Wijittra, A., Somboon, T., Surattana, A. & Khanit, S. (2006). Identification and antimicrobial activities of actinomycetes from soils in Samed Island and geldanamycin from strain PC4-3. *Thai Journal of Pharmacology*. 30: 49-56.
- Wikipedia the Free Encyclopedia*. Nuclear magnetic resonance. Retrieved February 4, 2012, from <http://en.wikipedia.org/wiki/NMR>
- Wilkins, K. & Scholler, C. (2009). Volatile organic metabolites from selected *Streptomyces* strains. *Actinomycetologica*. 23(2): 27-33.
- Williams, S. T. & Cross, T. (1971). Actinomycetes isolation from soil. In: Methods in microbiology. Brooth, C. (Ed.). Volume 4. London: Academic Press. Pp. 295-334.
- Williams, S. T. (1970). Further investigations of actinomycetes by scanning electron microscopy. *Journal of General Microbiology*. 62: 67-73.
- Williams, S. T., Locci, R., Beswick, A., Kurtboke, D. I., Kuznetsov, V. D., Le Monnier, F. J., Long, P. F., Maycroft, K. A., Palma, R. A., Petrolini, B., Quaroni, S., Todd, J. I. & West, M. (1993). Detection and identification of novel actinomycetes. *Research Microbiology*. 144: 653-656.
- Williams, S. T., Sharpe, M. E., Holt, J. G., Murray, R. G. E., Brenner, D. J., Krieg, N. R., Moulder, J. W., Pfennig, N., Sneath, P. H. A. & Staley, J. T. (eds.). (1989). *Bergey's Manual of Systematic Bacteriology*, Volume 4. Baltimore: Williams & Wilkins.
- Woese, C. R. (1987). Bacterial evolution. *Microbiology Reviews*. 51: 221-271.
- Woo, J-H., Kitamura, E., Myouga, H. & Kamei, Y. (2002). An antifungal protein from the marine bacterium *Streptomyces* sp. strain AP77 is specific for *Phythium porphyrae*, a causative agent of red rot disease in *Porphyra* spp. *Applied and Environmental Microbiology*. 68(6): 2666-2675.

- Wood, V., Gwilliam, R., Rajandream, M. A., Lyne, M., Lyne, R., Stewart, A. *et al.* (2002). The genome sequence of *Schizosaccharomyces pombe*. *Nature*. 415: 871-880.
- Wu, R. Y. & Chen, M. H. (1995). Identification of *Streptomyces* strain KS3-5. *Botanical Bulletin of Academia Sinica*. 36: 201-205.
- Yang, S. S. & Wang, J. Y. (1999). Protease and amylase production of *Streptomyces rimosus* in submerged and solid state cultivations. *Botany Bull Academia Sinica*. 40: 259-265.
- Ye, L., Zhou, Q., Liu, C., Luo, X., Na, G. & Xi, T. (2009). Identification and fermentation optimization of a marine-derived *Streptomyces griseorubens* with anti-tumor activity. *Indian Journal of Marine Sciences*. 38(1): 14-21.
- Yuan, W. & Crawford, D. L. (1995). Characterization of *Streptomyces lydicus* WYEC108 as a potential biocontrol agent against fungal root and seed rots. *Applied and Environmental Microbiology*. 61: 3119-3128.
- Zakalyukina, Y. V., Zenova, G. M. & Zvyagintsev, D. G. (2002). Acidophilic soil actinomycetes. *Microbiology*. 71: 342-345.
- Zhou, W. & Zimmermann, W. (1993). Decolorization of industrial effluents containing reactive dyes by actinomycetes. *FEMS Microbiology Letters*. 107(2-3): 157-161.
- Zin, N. M., Sarmin, N. I. M, Ghadin, N., Basri, D. F., Sidik, N. M., Hess, W. M. & Strobel, G. A. (2007). Bioactive endophytic streptomycetes from the Malaya Peninsula. *FEMS Microbiology Letter*. 274: 83-33.