

## REFERENCES

1. Abbanat, D, Maiese, W & Greenstein, M 1999, 'Biosynthesis of the pyrroindomycins by *Streptomyces rugosporus* LL-42D005; Characterization of nutrient requirements', *The Journal of Antibiotics*, vol.52, no.2, pp.117-126.
2. Abraham, EP & Chain, E 1988, 'An enzyme from bacteria able to destroy penicillin.1940', *Reviews of infectious diseases*, vol.10, no.4, pp. 677–678.
3. Adinarayana, K, Ellaiah, P, Srinivasulu, B, Bhavani Devi, R & Adinarayana, G 2003, 'Response surface methodological approach to optimize the nutritional parameters for neomycin production by *Streptomyces marinensis* under solid-state fermentation', *Process Biochemistry*, vol.38, no.11, pp.1565-1572.
4. Akhnazarova, S & Kafarov, V 1982, *Experiment Optimization in Chemistry and Chemical Engineering*, Mir Publishers, Moscow and Chicago.
5. Altschul, SF, Madden, TL, Schäffer, AA, Zhang, J, Zhang, Z, Miller, W & Lipman, DJ 1997, 'Gapped BLAST and PSI-BLAST: a new generation of protein database search programs', *Nucleic Acids Research*, vol.25, no.1, pp.3389-3402.
6. Amayaly, BE, Graciela, GR, Nahara, AS & Irma, SME 2012, 'Antitumor activity of Actinobacteria isolated in marine sediment from Todos Santos Bay, Baja California, Mexico', *Revista de Biología Marina y Oceanografía*, vol.47, no.2, pp.317-325.
7. Anderson, AS & Wellington, E 2001, 'The taxonomy of *Streptomyces* and related genera', *International Journal of Systematic and Evolutionary Microbiology*, vol.51, no.3, pp.797–814.
8. Antony-Babu, S, Stach, JE & Goodfellow, M 2008, 'Genetic and phenotypic evidence for *Streptomyces griseus* ecovars isolated from a beach and dune sand system', *Antonie Van Leeuwenhoek*, vol.94, no.1, pp.63–74.



9. Aouiche, A, Bijani, C, Zitouni, A, Mathieu, F & Sabaou, N 2014, ‘Antimicrobial activity of saquayamycins produced by *Streptomyces* spp. PAL114 isolated from a Saharan soil’, Journal de Mycologie Médicale, vol.24, no.2, pp.17–23.
10. Arakawa, K, Sugino, F, Kodama, K, Ishii, T & Kinashi, H 2005, ‘Cyclization mechanism for the synthesis of macrocyclic antibiotic lankacidin in *Streptomyces rochei*’, Chemistry and biology, vol.12, no.2, pp.249-256.
11. Arasu, MV, Duraipandian, V, Agastian, P & Ignacimuthu, S 2009, ‘In vitro antimicrobial activity of *Streptomyces* spp. ERI-3 isolated from Western Ghats rock soil (India)’, Journal de Mycologie Médicale, vol.19, no.1, pp.22-28.
12. Arasu, MV, Kannan, P, Ezhilvendan, S, Ganesan, G, Ignacimuthu, S & Agastian, P 2010, ‘Antifungal and antifeedant activities of extracellular product of *Streptomyces* spp. ERI-04 isolated from Western Ghats of Tamil Nadu’, Journal de Mycologie Médicale / Journal of Medical Mycology, vol.20, no.4, pp.290-297.
13. Arasu, MV, Duraipandian, V & Ignacimuthu, S 2013, ‘Antibacterial and antifungal activities of polyketide metabolite from marine *Streptomyces* sp. AP-123 and its cytotoxic effect’, Chemosphere, vol.90, no.2, pp. 479-487.
14. Aravindan, R, Meikandhan, T & Viruthagiri, T 2007, ‘Statistical evaluation of medium components by Plackett-Burman experimental design and kinetic modeling of lipase production by *Pseudomonas fluorescens*’, Indian Journal of Biotechnology, vol.6, no.4, pp.469-478.
15. Arumugam, M, Mitra, A, Jaisankar, P, Dasgupta, S, Sen, T, Gachhui, R, Kumar Mukhopadhyay, U & Mukherjee, J 2009, ‘Isolation of an unusual metabolite 2-allyloxyphenol from a marine actinobacterium, its biological activities and applications’, Applied microbiology and biotechnology, vol.86, no.1, pp.109–17.
16. Arumugam, M, Mitra, A, Jaisankar, P, Dasgupta, S, Sen, T, Gachhui, R, Kumar Mukhopadhyay, U & Mukherjee, J 2010, ‘Isolation of an unusual metabolite 2-allyloxyphenol from a marine actinobacterium, its biological activities and applications’, Applied microbiology and biotechnology, vol.86, no.1, pp.109–117.



17. Asolkar, RN, Jensen, PR, Kauffman, CA & Fenical, W 2006, 'Daryamides A-C, weakly cytotoxic polyketides from a marine-derived actinomycete of the genus *Streptomyces* strain CNQ-085', Journal of natural products, vol.69, no.12, pp.1756–1759.
18. Atlas, RM, & Bartha, R 1993, Microbial Ecology-Fundamentals and Applications, Benjamin-Cummings Publishing Company, Redwood City, California.
19. Atta, HM 2007, 'Production of vitamin B12 by *Streptomyces fulvissimus*', Egypt Journal of Biomedical Sciences, vol.23, no.1, pp. 166-184.
20. Atta, HM 2009, 'An antifungal agent produced by *Streptomyces olivaceiscleroticus*, AZ-SH514', World Applied Sciences Journal, vol.6, no.11, pp.1495-1505.
21. Atta, HM, El-Sayed, AS, El-Desoukey, MA, Hassan, M & El-Gazar, M 2012, 'Biochemical studies on the Natamycin antibiotic produced by *Streptomyces lydicus*: Fermentation, extraction and biological activities, Journal of Saudi Chemical Society, In Press.
22. Atta, HM, Haroun, MB & Khalifa, MA 2011, 'Physico-chemical characteristics of vernamycin-A antibiotic biosynthesis by streptomyces SP-AZ-SH-29', Journal of Saudi Chemical Society, vol.15, no.3, pp.247–255.
23. Atta, HM 2015, 'Biochemical studies on antibiotic production from *Streptomyces* sp.: Taxonomy, fermentation, isolation and biological properties', Journal of Saudi Chemical Society, vol.19, no.1, pp.12–22.
24. Augustine, SK, Bhavsar, SP, Baserisalehi, M & Kapadnis, BP 2004, 'Isolation and characterization and optimization of antifungal activity of an actinomycete of soil origin', Indian Journal of Experimental Biology, vol.42, no.9, pp.928–932.
25. Austin, B 1989, 'Novel pharmaceutical compounds from marine bacteria' Journal of Applied Bacteriology, vol.67, no.5, pp.461 -470.
26. Balagurunathan, R & Radhakrishnan, M 2010, Biotechnological, genetic engineering and nanotechnological potential of actinomycetes - Industrial Exploitation of Microorganisms, International Publishing House Private Limited.



27. Baltz, RH 2006, 'Marcel Faber Roundtable: is our antibiotic pipeline unproductive because of starvation, constipation or lack of inspiration?', *Journal of industrial microbiology and biotechnology*, vol.33, no.7, pp.507–513.
28. Baltz, RH 2008, 'Renaissance in antibacterial discovery from actinomycetes', *Current opinion in pharmacology*, vol.8, no.5, pp.557-563.
29. Bashir, ZA, Ahmad, A, Nor, SM & Usup, G 2012, 'Factors affecting bioactivity of secondary metabolites produced by *Streptomyces* sp. PT1 using Plackett-Burman design', *Advances in Environmental Biology*, vol.6, no.12, pp.3043-3051.
30. Baskaran, R, Mohan, PM, Vijayakumar, R & Sachithanandam, V 2015, 'Diversity of Antagonistic *Streptomyces* Species in Mangrove Sediments of Andaman Island, India', *Marine Faunal Diversity in India*, Academic Press, Elsevier, London.
31. Bentley, SD, Chater, KF, Cerdeño-Tárraga, AM, Challis, GL, Thomson, NR, James, KD, Harris, DE, Quail, MA, Kieser, H, Harper, D, Bateman, A, Brown, S, Chandra, G, Chen, CW, Collins, M, Cronin, A, Fraser, A, Goble, A, Hidalgo, J, Hornsby, T, Howarth, S, Huang, CH, Kieser, T, Larke, L, Murphy, L, Oliver, K, O'Neil, S, Rabbinowitsch, E, Rajandream, MA, Rutherford, K, Rutter, S, Seeger, K, Saunders, D, Sharp, S, Squares, R, Squares, S, Taylor, K, Warren, T, Wietzorreke, A, Woodward, J, Barrell, BG, Parkhill, J & Hopwood, DA 2002, 'Complete genome sequence of the model actinomycete *Streptomyces coelicolor* A3(2)', *Nature*, vol.417 (6885) 141-147.
32. Berdy, J 1995, 'Are actinomycetes exhausted as a source of secondary metabolites?', *Biotechnologia*, vol.7, no.8, pp.13-34.
33. Berdy, J 2005, 'Bioactive Microbial Metabolites', *Journal of Antibiotics*, vol.58, no.1, pp.1-26.
34. Berdy, J 2005, 'Bioactive microbial metabolites', *The Journal of Antibiotics*, vol.58, no.1, pp.1-26.
35. Bernan, VS, Greenstein, M & Maise, WM 1997, Marine microorganisms as a source of new natural products, *Advances in applied microbiology*, vol.43, pp.57-90.



36. Bevan, P & Ryder, H 1995, 'Identification of small molecular lead compounds: The screening approach to drug discovery. Trends in Biotechnology, vol.13, no.3, pp.115-121.
37. Bibb, MJ 2005, 'Regulation of secondary metabolism in *Streptomyces*', Current Opinion in Microbiology, vol.8, no.2, pp.208–215.
38. Bibb, MJ 2005, 'Regulation of secondary metabolism in *Streptomyces*', Current Opinion in Microbiology, vol.8, no.2, pp.208–215.
39. Blois, MS 1958, 'Antioxidant Determinations by the Use of a Stable Free Radical', Nature, vol.181, pp.1199 – 1200.
40. Bode, HB, Bethe, B, Höfs, R & Zeeck, A 2002, 'Big effects from small changes: possible ways to explore nature's chemical diversity', Chembiochem : a European journal of chemical biology, vol.3, no.7, pp.619–627.
41. Box, GEP, Hunter & Hunter, JS 1978, Statistics for Experimenters: An Introduction to Design, Data Analysis and Model Building. John Wiley and Sons, New York, USA.
42. Box, GEP, Hunter, WG & Hunter, JS 1978, Statistics for Experimenters, New York, Wiley.
43. Bradford, MM 1976, 'A rapid and sensitive method for the quantitation of microgram quantities of protein utilizing the principle of protein-dye binding', Analytical biochemistry, vol.72, no.1-2, pp.248–254.
44. Brunakova, Z, Godnay, A & Timko, J 2005, 'An extracellular endodeoxyribonuclease from *Streptomyces aureofaciens*', Biochimica et biophysica acta, vol.1721, no.1-3, pp.116–23.
45. Bruntner, C, Binder, T, Pathom-aree, W, Goodfellow, M, Bull, AT, Potterat, O, Puder, C, Hörer, S, Schmid, A, Bolek, W, Wagner, K, Mihm, G & Fiedler, HP 2005, 'Frigocyclinone, a novel Angucyclinone antibiotic produced by a *Streptomyces griseus* strain from Antarctica', The Journal of antibiotics, vol.58, no.5, pp.346–349.
46. Buchanan, RE & Gibbons, NE 1974, Bergey's manual of determinative bacteriology, The Williams and Wilkins, Baltimore.



47. Bull, AT, Stach, JEM, Ward, AC & Goodfellow, M 2005, 'Marine actinobacteria: perspectives, challenges, future directions', *Antonie Van Leeuwenhoek*, vol.87, no.3, pp.65-79.
48. Burg, RW, Miller, BM, Baker, EE, Birnbaum, J, Currie, SA, Hartman, R, Kong, YL, Monaghan, RL, Olson, G, Putter, I, Tunac, JB, Wallick, H, Stapley, EO, Oiwa, R & Omura, S 1979, 'Avermectins, new family of potent anthelmintic agents: producing organism and fermentation', *Antimicrobial agents and chemotherapy*, vol.15, no.3, pp.361–367.
49. Cao, S, Lee, AS, Huang, Y, Flotow, H, Ng, S, Butler, MS & Buss, AD 2002, 'Agonodepsides A and B: two new depsides from a filamentous fungus F7524', *Journal of natural products*, vol.65, no.7, pp.1037–1038.
50. Cappuccino, JG & Sherman, N 1999, *Microbiology- A laboratory manual*, Horlow, Benjamin.
51. Carlson, JC, Li, S, Burr, DA & Sherman, DH 2009, 'Isolation and characterization of tirandamycins from a marine-derived *Streptomyces* sp.', *Journal of Natural Products*, vol.72, no.11, pp.2076–2079.
52. Chapman, AD 2009, *Numbers of Living Species in Australia and the World*, Biodiversity Information Services Toowoomba, Report for the Australian Biological Resources Study Canberra, Australia.
53. Chauhan, D, Catley, L, Li, G, Podar, K, Hidemitsu, T, Velankar, M, Mitsiades, C, Mitsiades, N, Yasui, H, Letai, A, Ovaa, H, Berkers, C, Nicholson, B, Chao, TH, Neuteboom, ST, Richardson, P, Palladino, MA & Anderson, KC 2005, 'A novel orallyactive proteasome inhibitor induces apoptosis in multiple myeloma cells with mechanisms distinct from Bortezomib', *Cancer Cell*, vol.8, no.5, pp.407–419.
54. Chen, C, Si, S, He, Q, Xu, H, Lu, M, Xie, Y, Wang, Y & Chen, R 2008, 'Isolation and characterization of antibiotic NC0604, a new analogue of bleomycin', *The Journal of Antibiotics*, vol.61, no.12, pp.747-751.
55. Cheng, JR, Fang, A & Demain, AL 1995, 'Effect of amino acids on rapamycin biosynthesis by *Streptomyces hygroscopicus*', *Applied Microbiology and Biotechnology*, vol.43, no.6, pp.1096–1098.



56. Chidambara Rajan, P, Mahalakshmi Priya, A, Jayapradha, D & Saranya Devi, S 2012, 'Isolation and Characterization of Marine Actinomycetes from West Coast of India for Its Antioxidant Activity and Cytotoxicity', International Journal of Pharmaceutical & Biological Archives, vol.3, no.3, pp.641-645.
57. Colquhoun, JA, Mexson, J, Goodfellow, M, Ward, AC, Horikoshi, K & Bull, AT 1998, 'Novel rhodococci and other mycolate actinomycetes from the deep sea', Antonie van Leeuwenhoek, vol.74 no.1-3, pp.27-40.
58. Coman, G & Bahrim, G 2011, 'Optimization of xylanase production by *Streptomyces* sp. P12-137 using response surface methodology and central composite design, Annals of Microbiology', vol.61, no.4, pp.773–779.
59. Comin-Anduix, B, Boros, LG, Marin, S, Boren, J, Callol-Massot, C, Centelles JJ, Torres JL, Agell N, Bassilian S & Cascante M 2002, 'Fermented wheat germ extract inhibits glycolysis/pentose cycle enzymes and induces apoptosis through poly (ADP-ribose) polymerase activation in Jurkat T-cell leukemia tumor cells', The Journal of biological chemistry, vol.277, no.48, pp.46408-46414.
60. Cragg, GM, Kingston, DGI & Newman, DJ 2012, 'Anticancer agents from natural products' Taylor and Francis, Boca Raton.
61. Cundliffe, E 1989, 'How antibiotic producing organisms avoid suicide', 'Annual Review of Microbiology', vol.43, no.1, pp.207–33.
62. Curl, EA, Gudauskas, RT, Harper, JD & Peterson, CM 1985, Effects of Soil Insects on Populations and Germination of Fungal Propagules, Ecology and Management of Soilborne Plant Pathogens, American Physiological Society, St. Paul, Minn.
63. Da Silva, IR, Martins, MK , Carvalho, CM , de Azevedo, JL & de Lima Procópio, RE 2012, 'The Effect of Varying Culture Conditions on the Production of Antibiotics by *Streptomyces* spp., Isolated from the Amazonian Soil', Fermentation Technology, vol.1, no.3, pp.1-5.
64. Davidson, BS 1995, 'New dimensions in natural products research: cultured marine microorganisms', Current Opinion in Biotechnology, vol. 6, no.3, pp.284-291.



65. Davies, J & Davies, D 2010, 'Origins and evolution of antibiotic resistance', *Microbiology and molecular biology reviews*, vol.74, no.3, pp.417–433.
66. De Kruif, P 1926, *Microbe hunters*, Harcourt Brace Jovanovich, Publishers San Diego New York, London.
67. Deacon, JW 1997, *Modern mycology*, Blackwell Scientific publications, Oxford London.
68. Deepak, V, Kalishwaralal, K, Ramkumarpanian, S, Babu, SV, Senthilkumar, SR & Sangiliyandi, G 2008, 'Optimization of media composition for Nattokinase production by *Bacillus subtilis* using response surface methodology', *Bioresource Technolnology*, vol. 99, no.17, pp.8170–8174.
69. Dekkers, JC, van Doornen, LJ & Kemper, HC 1996, 'The role of antioxidant vitamins and enzymes in the prevention of exercise-induced muscle damage', *Sports Medicine*, vol.21, no.3, pp.213–238.
70. Demain, AL, Aharonowitz, Y & Martin, JF 1983, *Metabolite control of secondary biosynthetic pathways, Biochemistry and genetic regulation of commercially important antibiotics*, Addison-Wesley, London.
71. Demain, AL 1992, 'Microbial secondary metabolism: a new theoretical frontier for academia,a new opportunity for industry', Ciba Foundation symposium , John Wiley, New York.
72. Demain, AL & Fang, A 1995, 'Emerging concepts of secondary metabolism in actinomycetes', *Actinomycetologica*, vol. 9, no. 2, pp.98-117.
73. Demain, AL 1999, 'Pharmaceutically active secondary metabolites of microorganisms', *Applied Microbiology and Biotechnology*, vol.52, no.4, pp.455-463.
74. Demain, AL & Fang, A 2000, *The natural functions of secondary metabolites, Advances in Biochemical Engineering / Biotechnology*, Springer Berlin Heidelberg.
75. Dey, G, Mitra, A, Banerjee, R & Maiti, BR 2001, 'Enhanced production of amylase by optimization of nutritional constituents using response surface methodology', *Biochemical Engineering Journal*, vol.7, no.3, pp.227-223.



76. Dobell, C 1960, *Antony van Leeuwenhoek and his "Little Animals."* Dover Publications, New York.
77. Doull, JL & Vining, LC 1990, Physiology of antibiotic production in actinomycetes and some underlying control mechanisms, *Biotechnology Advances*, vol.8, no.1, pp.141-158.
78. El-Gendy, MM, Shaaban, M, El-Bondkly, AM & Shaaban, KA 2008a, 'Bioactive benzopyrone derivatives from new recombinant fusant of marine *Streptomyces*', *Applied biochemistry and biotechnology*, vol.150, no.1, pp.85-96.
79. El-Gendy, MM, Shaaban, M, Shaaban, KA, El-Bondkly, AM & Laatsch, H 2008b, 'Ess-ramycin: a first triazolopyrimidine antibiotic isolated from Nature', *The Journal of Antibiotics*, vol.61, no.3, pp.149–57.
80. Fannin, TE, Marcos, MD, Anderson, DA & Bergman, HL 1981, 'Use of fractional factorial design to evaluate interactions of environmental factors affecting biodegradation rates, *Applied Environmental Microbiology*', vol.42, no.6, pp.936-943.
81. Fauci, AS 2001, 'Infectious diseases: considerations for the 21st century', *Clinical infectious diseases*, vol.32, no.5, pp.675-685.
82. Faulkner, DJ, Harper, MK, Haygood, MG, Salomon, CE & Schmidt, EW 2000, *Symbiotic bacteria in sponges: sources of bioactive substances*, Drugs from the sea, Basel, Karger, Switzerland.
83. Feher, M & Schmidt, JM 2003, 'Property distributions: Differences between drugs, natural products, and molecules from combinatorial chemistry', *Journal of chemical information and computer sciences*, vol.43, no.1, pp.218– 227.
84. Felsenstein, J 1985, 'Confidence limits on phylogenies: an approach using the bootstrap', *Evolution*, vol.39, no.4, pp.783–791.
85. Fernebro, J 2011, 'Fighting bacterial infections-future treatment options. Drug resistance updates : reviews and commentaries in antimicrobial and anticancer chemotherapy', vol.14, no.2, pp.125–139.
86. Fiedler, H-P, Bruntner, C, Bull, AT, Ward, AC, Goodfellow, M, Potterat, O, Puder, C & Mihm, G 2005, 'Marine actinomycetes as a source of novel secondary metabolites' *Antonie Van Leeuwenhoek*, vol.87, no.1, pp.37-42.



87. Flowers, TH & Williams, ST 1978, 'The influence of pH on the growth rate and viability of neutrophilic and acidophilic Streptomycetes', *Microbios*, vol.18, no.73-74, pp.223-228.
88. Fourati-Ben Fguira, L, Fotso, S, Ben Ameur-Mehdi, R, Mellouli, L & Laatsch, H 2005, 'Purification and structure elucidation of antifungal and antibacterial activities of newly isolated *Streptomyces* sp. strain US80', *Research in Microbiology*, vol.156, no.3, pp. 341-347.
89. Funayama, S, Ishibashi, M, Anraku, Y, Miyauchi, M, Mori, H, Komiya, K & Omura, S 1989, 'Novel cytocidal antibiotics, glucopiericidinols A1 and A2. Taxonomy, fermentation, isolation, structure elucidation and biological characteristics', *The Journal of antibiotics*, vol.42, no.12, pp.1734–1740.
90. Gao, X, Lu, Y, Xing, Y, Ma, Y, Lu, J, Bao, W, Wang, Y & Xi, T 2012, 'A novel anticancer and antifungus phenazine derivative from a marine actinomycete BM-17', *Microbiological research*, vol.167, no.10, pp.616–622.
91. Gocheva, B & Ilieva, S 1983, 'First National Conference Production and application of the Microbiological preparations in the agriculture economy', 18-19 Nov.', Peshtera, Bulgaria.
92. Goodfellow, M & Williams, ST 1983, 'Ecology of Actinomycetes', *Annual Review of Microbiology*, vol.37, no.1, pp.189-216.
93. Gorajana, A, Kurada, BV, Peela, S, Jangam, P, Vinjamuri, S, Poluri, E & Zeeck, A 2005, '1-Hydroxy-1-norresistomycin, a new cytotoxic compound from a marine actinomycete, *Streptomyces chibaensis* AUBN1/7', *The Journal of Antibiotics*, vol.58, no.8, pp.526–529.
94. Gorajana, A, Venkatesan, M, Vinjamuri, S, Kurada, BV, Peela, S, Jangam, P, Poluri, E & Zeeck, 2007, 'A Resistoflavine, cytotoxic compound from a marine actinomycete, *Streptomyces chibaensis* AUBN1/7', *Microbiological Research*, vol.162, no.4, pp. 322-327.
95. Govindarajan, G, Satheeja Santhi, V & Jebakumar, SR 2014, 'Antimicrobial potential of phylogenetically unique actinomycete, *Streptomyces* sp. JRG-04 from marine origin', *Biologics*, vol.42, no.6, pp.305-311.



96. Gunasekaran, S & Poorniammal, R 2008, 'Optimization of fermentation conditions for red pigment production from *Penicillium* sp. Under submerged cultivation', *African Journal of Biotechnology*, vol.7, no.12, pp.1894-1898.
97. Guo, Z, Shen, L, Ji, Z & Wu, W 2012, 'Enhanced Production of a Novel Cyclic Hexapeptide Antibiotic (NW-G01) by *Streptomyces alboflavus* 313 Using Response Surface Methodology', *International Journal of Molecular Sciences*, vol.13, no.4, pp.5230-5241.
98. Hacène, H, Daoudi-Hamdad, F, Bhatnagar, T, Baratti, JC & Lefebvre, G 2000, 'H107, a new aminoglycoside anti *Pseudomonas* antibiotic produced by a new strain of *Spirillospora*', *Microbios*, vol.102, no.402, pp.69-77.
99. Haltrich, D, Laussamyer, B & Steiner, W 1994, 'Xylanase formation by *Sclerotium rolfsii*: effect of growth substrates and development of a culture medium using statistical design experiments', *Applied Microbiology and Biotechnology*, vol.42, no.4, pp.522-30.
100. Hamseveni, DR, Prapulla, SG & Divakar, S 2001, 'Response surface methodological approach for the synthesis of isobutyl isobutyrate', *Process Biochemistry*, vol.36, no.11, pp.1103–1109.
101. Han, Y, Li, ZY, Miao, XL & Zhang, FL 2008, 'Statistical optimization of medium components to improve the chitinase activity of *Streptomyces* sp. Da11 associated with the South China Sea sponge *Craniella australiensis*', *Process Biochemistry*, vol. 43, no.10, pp.1088–1093.
102. Harrigan, WF 1998, *Laboratory Methods in Food Microbiology*, Academic Press, San Diego.
103. Hawas, UW, Shaaban, M, Shaaban, KA, Speitling, M, Maier, A, Kelter, G, Fiebig, HH, Meiners, M, Helmke, E & Laatsch, H 2009, 'Man-souramycins A-D, cytotoxic isoquinolinequinones from a marine Streptomycete', *Journal of Natural Products*, vol.72, no.12, pp.2120–2124.
104. Hayakawa, Y, Shirasaki, S, Kawasaki, T, Matsuo, Y, Adachi, K & Shizuri, Y 2007, 'Structures of new cytotoxic antibiotics, piericidins C7 and C8', *The Journal of Antibiotics*, vol.60, no.3, pp.201–203.



105. He, GQ, Kong, Q & Ding, LX 2004, "Response surface methodology for optimizing the fermentation medium of *Clostridium butyricum*," Letters in applied microbiology, vol. 39, no.4, pp.363-368.
106. Helaly, SE, Pesic, A, Fiedler, HP & Süssmuth, RD 2011, 'Elaiomycins B and C: alkylhydrazide antibiotics from *Streptomyces* sp. BK 190', Organic letters, vol.13, no.5, pp.1052–1055.
107. Higashide, E 1984, The macrolides: Properties, biosynthesis and fermentation, Biotechnology of industrial antibiotics, Marcel Dekker , New-York.
108. Higginbotham, SJ & Murphy, CD 2010, 'Identification and characterisation of a *Streptomyces* sp. isolate exhibiting activity against methicillin-resistant *Staphylococcus aureus*', Microbiological Research, vol.165, no.1, pp.82–86.
109. Hohmann, C, Schneider, K, Bruntner, C, Brown, R, Jones, AL, Goodfellow, M, Krämer, M, Imhoff, JF, Nicholson, G, Fiedler, HP & Süssmuth, RD 2009a, 'Albidopyrone, a new alpha-pyrone-containing metabolite from marine-derived *Streptomyces* sp. NTK 227', Journal of Antibiotics, vol.62, no.2, pp.75–79.
110. Hohmann, C, Schneider, K, Bruntner, C, Irran, E, Nicholson, G, Bull, AT, Jones, AL, Brown, R, Stach, JE, Goodfellow, M, Beil,W, Krämer, M, Imhoff, JF, Süssmuth, RD & Fiedler, HP 2009b, 'Caboxamycin, a new antibiotic of the benzoxazole family produced by the deep-sea strain *Streptomyces* sp. NTK 937', The Journal of Antibiotics, vol.62, no.2, pp.99–104.
111. Holt, JG 1994, Bergey's Manual of Determinative Bacteriology, Lippincott Williams and Wilkins, Baltimore.
112. Hong, K, Gao, AH, Xie, QY, Gao, H, Zhuang, L, Lin, HP, Yu, HP, Li, J, Yao, XS, Goodfellow, M & Ruan, JS 2009, 'Actinomycetes for marine drug discovery isolated from mangrove soils and plants in China', Marine Drugs, vol.7, no.1, pp.24–44.
113. Hong, K, Gao, AH, Xie, QY, Gao, H, Zhuang, L, Lin, HP, Yu, HP, Li, J, Yao, XS, Goodfellow, M & Ruan, JS 2009, 'Actinomycetes for marine drug discovery isolated from mangrove soils and plants in China', Marine Drugs, vol.7, no.1, pp.24–44.



114. Houng, JY, Chen, KC & Hsu, WH 1989, 'Optimization of cultivation medium composition for isoamylase production', *Applied Microbiology and Biotechnology*, vol.31, no.1, pp.61 -64.
115. Hounsa, CG, Aubry, JM, Dubourguier, HC & Hornez, JP 1996, 'Application of factorial and Doehlert design for optimization of pectate lyase production by a recombinant *Escherichia coli*', *Applied Microbiology and Biotechnology*, vol.45, no.6, pp.764–770.
116. Huang, YF, Tian, L, Fu, HW, Hua, HM & Pei, YH 2006, 'One new anthraquinone from marine *Streptomyces* sp. FX-58', *Natural product research*, vol.20, no.13, pp.1207–1210.
117. Hughes, CC, Prieto-Davo, A, Jensen, PR & Fenical, W 2008, 'The marinopyrroles, antibiotics of an unprecedented structure class from a marine *Streptomyces* sp.', *Organic letters*, vol.10, no.4, pp.629–631.
118. Igarashi, M & Miyazawa, T 2001, 'The growth inhibiting effect of conjugated linoleic acid on a human hepatoma cell line HepG2, is induced by a change in fatty acid metabolism but not the facilitation of lipid peroxidation in cells', *Biochimica et biophysica acta*, vol.1530, no.2-3, pp.162-171.
119. Imada, C & Okami, Y 1995, 'Characteristics of marine actinomycete isolated from a deep-sea sediment and production of betaglucosidase inhibitor', *Journal of Marine Biotechnology*, vol.2, no.2, pp.109–113.
120. Jagannadha Rao, K, Kim, CH & Rhee, SK 2000, 'Statistical optimization of medium for the production of recombinant hirudin from *Saccharomyces cerevisiae* using response surface methodology', *Process Biochemistry*, vol.35, no.7, pp.639–647.
121. Jarvis, BB 1995, 'Secondary metabolites and their role in evolution', *Anais Da Academia Brasileira De Ciencias*, vol.67, no.3, pp.329-345.
122. Jensen, PR & Fenical, W 1994, 'Strategies for the discovery of secondary metabolites from marine bacteria:ecological perspectives', *Annual review of microbiology*, vol.48, no.1, pp.559-584.
123. Jensen, PR, Dwight, R & Fenical, W 1991, 'Distribution of actinomycetes in near-shore tropical marine sediments', *Applied and Environmental Microbiology*, vol.57, no.4, pp.1102-1108.



124. Jensen, PR & Fenical, W 1996, 'Marine bacterial diversity as a resource for novel microbial products', *Journal of Industrial Microbiology*, vol.17, no.5-6, pp.346-351.
125. Jensen, PR & Fenical, W 2000, *Marine microorganisms and drug discovery: Current status and future potential*, *Drugs from the Sea*, Basel, Karger, Switzerland.
126. Jensen, PR, Mincer, TJ, Williams, PG & Fenical, W 2005, 'Marine actinomycete diversity and natural product discovery', *Antonie Van Leeuwenhoek*, vol.87, no.1, pp.43-48.
127. Jeong, S, Shin, HJ, Kim, TS, Lee, HS, Park, SK & Kim, HM 2006, 'Streptokordin, a new cytotoxic compound of the methylpyridine class from a marine-derived *Streptomyces* sp. KORDI-3238', *The Journal of Antibiotics*, vol.59, no.4, pp.234-240.
128. Jeong, SY, Shin, HJ, Kim, TS, Lee, HS, Park, SK & Kim, HM 2006, 'Streptokordin, a new cytotoxic compound of the methylpyridine class from a marine-derived *Streptomyces* sp. KORDI-3238', *The Journal of antibiotics*, vol.59, no.4, pp.234–240.
129. Jiang, ZD, Jensen, PR & Fenical, W 1997, 'Actinoflavoside, a novel flavonoid-like glycoside produced by a marine bacterium of the genus *Streptomyces*' *Tetrahedron Letters*, vol.38, no.29, pp.5065-5068.
130. Kadiri, S, Yarla, NS, Vidavalur, S & Duddukuri, GR 2013, 'Isolation and Identification of Novel Aporphine Alkaloid SSV, A Novel Antitumor Antibiotic from Fermented Broth of Marine Associated *Streptomyces* sp. KS1908', *Journal of Marine Science: Research & Development*, vol. 3, no.4, pp.1-5.
131. Kämpfer, P 2006, "The Family Streptomycetaceae, Part I: Taxonomy". *The prokaryotes: a handbook on the biology of bacteria*, Springer, Berlin.
132. Kandula, SK & Terli, R 2013, 'Production, purification and characterization of an antimicrobial compound from marine *Streptomyces coeruleorubidus* BTSS-301', *Journal of Pharmacy Research*, vol.7, no.5, pp.397–403.
133. Karthik, L, Kumar, G & Bhaskara Rao, KV 2013, 'Antioxidant activity of newly discovered lineage of marine actinobacteria', *Asian Pacific Journal of Tropical Medicine*, vol.6, no. 4, pp. 325-332.



134. Kekuda TR Prasith, Shobha, KS & Onkarappa, R 2010, 'Studies on antioxidant and anthelmintic activity of two *Streptomyces* species isolated from Western Ghat soils of Agumbe, Karnataka', Journal of Pharmacy Research, vol.3, no.1, pp.26-29.
135. Khamna, S, Yokota, A, Peberdy, JF & Lumyong, S 2009, 'Antifungal activity of *Streptomyces* spp. isolated from rhizosphere of Thai medicinal plants', International Journal of Integrative Biology, vol.6, no.3, pp.143-147.
136. Khan, ST, Komaki, H, Motohashi, K, Kozone, I, Mukai, A, Takagi, M & Shin-ya, K 2011, 'Streptomyces associated with a marine sponge *Haliclona* sp.; biosynthetic genes for secondary metabolites and products', Environmental microbiology, vol.13, no.2, pp.391–403.
137. Khuri, AI & Cornell, JA 1987, Response Surfaces, Marcel Dekker, New York.
138. Kieser, T, Bibb, MJ, Buttner, MJ, Chater, KF & Hopwood, DA 2000, Practical *Streptomyces* genetics, John Innes Centre, Norwich, United Kingdom.
139. Kim, SB, Falconer, C, Williams, E & Goodfellow, M 1998, '*Streptomyces thermocarboxydovorans* sp. nov. and *Streptomyces thermocarboxydus* sp. nov., two moderately thermophilic carboxydrophic species from soil', International Journal of Systematic and Evolutionary microbiology, vol.48, no.1, pp.59– 68.
140. Kimura, M 1980, 'A simple method for estimating evolutionary rates of base substitutions through comparative studies of nucleotide sequences, Journal of molecular evolution', vol.16, no.2, pp.111-120.
141. Kobayashi, M, Aoki, S, Sakai, H, Kihara, N, Sasaki, T & Kitagawa, I 1993, 'Altohyrtins B and C and 5-desacetylaltohyrtin A, potent cytotoxic macrolide congeners of altohyrtin A, from the Okinawan marine sponge', Hyrtios altum. Chemical and pharmaceutical bulletin, vol.41, no.5, pp.989-991.
142. Kock, I, Maskey, RP, Biabani, MA, Helmke, E & Laatsch, H 2005, '1-Hydroxy-1-norresistomycin and resistoflavin methyl ether: new antibiotics from marine-derived streptomycetes', The Journal of Antibiotics, vol.58, no.8, pp.530–534.



143. Koehn, FE & Carter, GT 2005, 'The evolving role of natural products in drug discovery', *Nature reviews. Drug discovery*, vol.4, no.3, pp.206-220.
144. Kokare, CR, Mahadik, KR, Kadam, SS & Chopade, BA 2004, 'Isolation, characterization and antimicrobial activity of marine halophilic Actinopolyspora species AH1 from the west coast of India', *Current Science*, vol.86, no.4, pp.593-597.
145. Korn-Wendisch, F & Kutzner, HJ 1992, The family Streptomycetaceae. In: *The prokaryotes*, Springer-Verlag Incorporation, New York.
146. Krishnamoorthy, K, Harichandrakumar, KT, Krishna Kumari, A & Das, LK 2009, 'Burden of chikungunya in India: estimates of disability adjusted life years (DALY) lost in 2006 epidemic', *Journal of vector borne diseases*, vol.46, no.1, pp.26-35
147. Kumagai, K, Fukui, A, Tanaka, S, Ikemoto, M, Moriguchi, K & Nabeshima, S 1993, 'PC-766B, a new macrolide antibiotic produced by Nocardia brasiliensis. II. Isolation, physico-chemical properties and structure elucidation', *The Journal of Antibiotics*, vol.46, no.7, pp.1139-44.
148. Kuster, E 1968, Taxonomy of soil actinomycetes and related organisms. In: *Ecology of soil bacteria*, Liverpool University Press, Liverpool.
149. Lakshmipathy, DT & Krishnan, K 2009, 'Morphological, biochemical and biological studies of halotolerant *Streptomyces* sp. isolated from saltpan environment' *American Journal of Infectious Diseases*, vol.5, no.3, pp.207-213.
150. Lam, KS 2006, 'Discovery of novel metabolites from marine actinomycetes', *Current opinion in microbiology*, vol.9, no.3, pp.245-251.
151. Laxminarayan, R & Heymann, DL 2012, *Challenges of drug resistance in the developing world*. BMJ Publishing Group.
152. Lechevalier, H & Lechevalier, MP 1981, 'Introduction to the order Actinomycetales. In: *The Prokaryotes*. Germany: Springer-Verlag Berlin.



153. Lee, DR, Lee, SK, Choi, BK, Cheng, J, Lee, YS, Yang, SH & Suh, JW 2014, 'Antioxidant activity and free radical scavenging activities of *Streptomyces* sp. strain MJM 10778', *Asian Pacific Journal of Tropical Medicine*, vol.7, no.12, pp.962-967.
154. Lee, SL & Chen, WC 1997, Optimization of medium composition for the production of glucosyltransferase by *Aspergillus niger* with response surface methodology. *Enzyme and Microbial Technology*, vol.21, no.6, pp.436–440.
155. Li, F, Maskey, RP, Qin, S, Sattler, I, Fiebig, HH, Maier, A, Zeeck, A & Laatsch, H 2005, 'Chinikomycins A and B: isolation, structure elucidation, and biological activity of novel antibiotics from a marine *Streptomyces* sp. isolate M045', *Journal of natural products*, vol.68, no.3, pp.349–353.
156. Li, Y, Jiang, H, Xu, Y & Zhang, X 2008, 'Optimization of nutrient components for enhanced phenazine-1-carboxylic acid production by gacA-inactivated *Pseudomonas* sp. M18G using response surface method', *Applied Microbiology and Biotechnology*, vol.77, no.6, pp.1207–1217.
157. Liberra, K & Lindquist, U 1995, 'Marine fungi: a prolific source of biologically active natural products?', *Pharmazie*, vol.50, no.9, pp.583-588.
158. Lim, JS, Park, MC, Lee, JH, Park, SW & Kim, SW 2005, 'Optimization of culture medium and conditions for neo-fructo oligosaccharides production by *Penicillium citrinum*', *European Food Research and Technology*, vol. 221, no.5, pp.639–644.
159. Lindequist, U, Niedermeyer, THJ & Julich, WD 2005, 'The Pharmacological potential of mushrooms' *Evidence-Based Complementary and Alternative Medicine*, vol.2, no.3, pp.285-299.
160. Liu, CH, Hwang, CF & Liao, CC 1999, 'Medium optimization for glutathione production by *Saccharomyces cervisiae*', *Process Biochemistry*, vol.34, no.1, pp.17 -23.
161. Liu, GQ & Wang, XL 2007, 'Optimization of critical medium components using response surface methodology for biomass and extracellular polysaccharide production by *Agaricus blazei*', *Applied Microbiology and Biotechnology*, vol.74, no.1, pp.78–83.



162. Lu, J, Ma, Y, Liang, J, Xing, Y, Xi, T & Lu, Y 2012, 'Aureolic acids from a marine-derived *Streptomyces* sp. WBF16', Microbiological research, vol.167, no.10, pp.590-595.
163. Luckner, M, Nover, L & Bohm, H 1977, Secondary Metabolism and Cell Differentiation. Springer-Verlag Berlin, Heidelberg, New York.
164. Macherla, VR, Liu, J, Bellows, C, Teisan, S, Nicholson, B, Lam, KS & Potts, BC 2005, 'Glaciapyrroles A, B and C, pyrrolosesquiterpenes from a *Streptomyces* sp. isolated from an Alaskan marine sediment', Journal of natural products, vol.68, no.5, pp.780–783.
165. Magarvey, NA, Keller, JM, Bernan, V, Dworkin, M & Sherman, DH 2004, 'Isolation and characterization of novel marine-derived actinomycete taxa rich in bioactive metabolites', Applied and Environment Microbiology, vol.70, no.12, pp.7520-7529.
166. Magarvey, NA, Keller, JM, Bernan, V, Dworkin, M & Sherman, DH 2004, 'Isolation and characterization of novel marine-derived actinomycete taxa rich in bioactive metabolites', Applied and Environmental Microbiology, vol.70, no.7, pp.520-529.
167. Mak, KWY, Yap, MGS & Teo, WK 1995, 'Formulation and optimization of two culture media for the production of tumor necrosis factor- $\beta$  in *Escherichia coli*', Journal of Chemical Technology and Biotechnology, vol.62, no.3, pp.289-294.
168. Malik, VS 1980, 'Microbial secondary metabolism', Trends in biochemical sciences, vol.5, no.3, pp.68–72.
169. Manam, RR, Teisan, S, White, DJ, Nicholson, B, Grodberg, J, Neuteboom, ST, Lam, KS, Mosca, DA, Lloyd, GK & Potts, BC 2005, 'Lajollamycin, a nitro-tetraene spiro-beta-lactone-gamma-lactam antibiotic from the marine actinomycete *Streptomyces nodosus*', Journal of natural products, vol.68, no.2, pp.240–243.
170. Manivasagan, P, Venkatesan, J, Sivakumar, K & Kim, SK 2013, 'Marine actinobacterial metabolites: current status and future perspectives', Microbiological research, vol.168, no.6, pp.311–332.
171. Mann, J 2001, 'Natural products as immunosuppressive agents', Natural Product Reports, vol.18, no.4, pp.417-430.



172. Mann, LH, Behera, SK & Park, HS 2010, 'Optimization of operational parameters for ethanol production from Korean food waste leachete', International Journal of Environmental Science and Technology, vol.7, no.1, pp.157-164.
173. Mao, Y, Varoglu, M & Sherman, DH 1999, 'Molecular characterization and analysis of the biosynthetic gene cluster for the antitumor antibiotic mitomycin C from *Strep-tomyces lavendulae* NRRL 2564', Chemistry and biology ,vol.6, no.4, 251–263.
174. Maplestone, RA, Stone, MJ & Williams, DH 1992, 'The evolutionary role of secondary metabolites- a review', Gene, vol.115, no.1-2, pp.151-157.
175. Marinelli, F & Marcone, GL 2011, Microbial secondary metabolites. Comprehensive biotechnology, Academic Press, American Burlington.
176. Martín, JF & Demain, AL 1980, 'Control of antibiotic biosynthesis', Microbiological reviews, vol.44, no.2, pp.230-251.
177. Mary, AG, Lazarus, S & Vincent, SGP 1998, 'Marine organisms containing bio-active compounds-a check list', Proceedings of the First National Seminar on Trends in Marine Biotechnology, Manonma niam Sundaranar University, India.
178. Maskey, RP, Li, F, Qin, S, Fiebig, HH & Laatsch, H 2003, 'Chandrananimycins A approximately C:production of novel anticancer antibiotics from a marine Actinomadura sp. isolate M048 by variation of medium composition and growth conditions', The Journal of Antibiotics, vol.56, no.7, pp.622–634.
179. Maskey, RP, Sevvana, M, Usón, I, Helmke, E & Laatsch, H 2004, 'Gutingimycin: a highlycomplex metabolite from a marine Streptomycete', Angewandte Chemie, vol.43, no.10, pp.1281–1283.
180. McGuire, JM, Bunch, RL, Anderson, RC, Boaz, HE, Flynn, EH, Powell, HM & Smith, JW 1952, 'Ilotycin, a new antibiotic', Schweizerische medizinische Wochenschrift, vol.82, no.41, pp.1064-1065.
181. Metchnikoff, E 1908, Etudes sur la flore intestinale, Putréfaction intestinale, Annales de l'Institut Pasteur, vol.22, no.12, pp.929-955.



182. Metchnikoff, E 1910, Etudes sur la flore intestinale, Poisons intestinaux et scléroses, Annales de l'Institut Pasteur, vol.24, no.10, pp.755-770
183. Miller, ED, Kauffman, CA, Jensen, PR & Fenical, W 2007, 'Piperazimycins: cytotoxic hexadepsipeptides from a marine-derived bacterium of the genus *Streptomyces*', The Journal of organic chemistry, vol.72, no.2, pp.323–330.
184. Mitchell, SS, Nicholson, B, Teisan, S, Lam, KS & Potts, BC 2004, 'Aureoverticillactam, a novel 22-atom macrocyclic lactam from the marine actinomycete *Streptomyces aureoverticillatus*', Journal of Natural Products, vol.67, no.8, pp.1400–1402.
185. Montgomery, DC 2001, Design and Analysis of Experiments. John Wiley and Sons, New York.
186. Moore, BS, Trischman, JA, Seng, D, Kho, D, Jensen, PR & Fenical, W 1999, 'Salinamides, Antiinflammatory depsipeptides from a marine Streptomycete', The Journal of Organic Chemistry, vol.64, no.4, pp.1145–1150.
187. Morse, SS & Schluederberg, A 1990, 'From the National Institute of Allergy and Infectious Diseases, the Fogarty International Center of the National Institutes of Health, and the Rockefeller University. Emerging viruses: the evolution of viruses and viral diseases', The Journal of infectious diseases, vol.162, no.1, pp.1-7.
188. Morse, SS 1991, 'Emerging viruses: defining the rules for viral traffic', Perspectives in biology and medicine, vol.34, no.3, pp.387-409.
189. Morse, SS 1993, Examining the origins of emerging viruses, Emerging viruses, Oxford University Press, New York.
190. Murthy, MSRC, Swaminathan, T, Rakshit, SK & Kosugi, Y 2000, 'Statistical optimization of lipase catalyzed hydrolysis of methyl oleate by response surface methodology', Bioprocess Bioengineering, vol. 22, no.1, pp. 35–39.
191. Nakamura, H, Iitaka, Y, Kitahara, T, Okazaki, T & Okami, Y 1977, 'Structure of asplasmomycin', Journal of Antibiotics, vol.30, no.9, pp.714-719.



192. Nicieza, RG, Huergo, J, Connolly, BA & Sanchez, J 1999, 'Purification, characterization and role of nucleases and serine proteases in *Streptomyces* differentiation', *The Journal of Biological Chemistry*, vol.274, no.29, pp.20366–20375.
193. Nonomura, H 1974, 'Key for classification and identification of 458 species of the Streptomycetes included in ISP', *Journal of Fermentation Technology*, vol.52, no2., pp.78-92.
194. Ogunmwonyi, H, Mazomba, N, Mabinya, L, Ngwenya, E, Green, E, Akinpelu, DA, Ademola, O, Olaniran, Kim Bernard & AI Okoh 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*, vol.4, no.21, pp.2223-2230.
195. Ohnishi, Y, Ishikawa, J, Hara, H, Suzuki, H, Ikenoya, M, Ikeda H, Yamashita, A, Hattori, M & Horinouchi ,S 2005, Genome Sequence of the Streptomycin-Producing Microorganism *Streptomyces griseus* IFO 13350 *Journal of bacteriology*, vol.190, no.11, pp.4050-4060.
196. Ohnishi, Y, Yamazaki, H, Kato, JY, Tomono, A & Horinouchi, S 2005, 'AdpA, a central transcriptional regulator in the A factor regulatory cascade that leads to morphological development and secondary metabolism in *Streptomyces griseus*', *Bioscience, biotechnology and biochemistry*, vol.69, no.3, pp.431-439.
197. Okami, Y & Hotta, K 1988, *Search and discovery of new antibiotics, Actinomycetes in biotechnology*, Academic Press, New York, London.
198. Okamoto, R, Tsuchiya, M, Nomura, H, Iguchi, H, Kiyoshima, K, Hori, S, Inui, T, Sawa, T, Takeuchi, T & Umezawa, H 1980, 'Biological properties of new acyl derivatives of tylisin', *The Journal of Antibiotics*, vol.33, no.11, pp.1309-1315.
199. Oldfield, C, Wood, NT, Gilbert, SC, Murray, FD & Faure, FR 1998, 'Desulphurisation of benzothiophene and dibenzothiophene by actinomycete organisms belonging to the genus *Rhodococcus* and related taxa', *Antonie Van Leeuwenhoek*, vol.74, no.1-3, pp.119-132.
200. Oleskin, AV 1994, 'Social behaviour of microbial populations', *Journal of Basic Microbiology*, vol. 34, no.6, pp.425-439.
201. Omura, S, Ikeda, H & Kitao, C 1979, 'Isolation and properties of spiramycin I 3-hydroxyl acylase from *Streptomyces ambofaciens*', *Journal of biochemistry*, vol.86, no.6, pp.1753-1758.



202. Osterholm, MT 2001, 'How to vaccinate 30,000 people in three days: realities of outbreak management', *Pub Health Report*, vol.116, no. 2, pp.74–78.
203. Pathom-aree, W, Stach, JE, Ward, AC, Horikoshi, K, Bull, AT & Goodfellow, M 2006, 'Diversity of actinomycetes isolated from Challenger Deep sediment (10,898 m) from the Mariana Trench', *Extremophiles*, vol.10, no.3, pp181-189.
204. Patzer, SI & Braun, V 2010, 'Gene cluster involved in the biosynthesis of griseobactin, a catechol-peptide siderophore of *Streptomyces* sp. ATCC 700974', *Journal of bacteriology*, vol.192, no.2, pp.426–435.
205. Payne DJ, Gwynn, MN, Holmes, DJ & Pompliano, DL 2007, 'Drugs for bad bugs: confronting the challenges of antibacterial discovery', *Nature reviews. Drug discovery*, vol.6 no.1, pp.29-40.
206. Pecznska-Czoch, W & Mordarski, M 1988, Actinomycete enzymes. In *Actinomycetes in Biotechnology*, Academic Press, London.
207. Peláez, F 2006, 'The historical delivery of antibiotics from microbial natural products—can history repeat?' *Biochemistry and pharmacology* , vol.71, no.7, pp.981-990.
208. Peschke, U, Schmidt, H, Zhang, HZ & Piepersberg, W 2006, 'Molecular characterization of the lincomycin-production gene cluster of *Streptomyces lincolnensis*', *Molecular microbiology*, 78-11, vol.16, no.6, pp.1137–1156.
209. Pfefferle, C, Theobald, U, Gürtler, H & Fiedler, H 2000, 'Improved secondary metabolite production in the genus *Streptosporangium* by optimization of the fermentation conditions', *Journal of Biotechnology*, vol.80, no.2, pp.135-42.
210. Pietra, F 1997, 'Secondary metabolites from marine microorganisms: bacteria, protozoa, algae and fungi, Achievements and prospects', *Natural product reports*, vol.14, no.5, pp.453-464.
211. Pimentel-Elardo, SM, Kozytska, S, Bugni, TS, Ireland, CM, Moll, H & Hentschel, U 2010, 'Antiparasitic compounds from *Streptomyces* sp. strains isolated from Mediterranean sponges', *Marine Drugs*, vol.8, no.2, pp.373–380.



212. Popa, O, Narcisa, B, Vamanu, A & Namanu, E 2007, 'The utilization of the response surface methodology for the optimization of cultivation medium and growth parameters in the cultivation of the yeast strain *S. cerevisiae* 3.2 on ethanol', African Journal of Biotechnology, vol. 6, no.23, pp. 2700- 2707.
213. Prabavathy, VR, Mathivanan, N & Murugesan, K 2006, 'Control of blast and sheath blight diseases of rice using antifungal metabolites produced by *Streptomyces* sp. PM5.', Biological Control, vol.39, no.3, pp.313–319.
214. Prapagdee, B, Kuekulgong, C & Mongkolsuk, S 2008, 'Antifungal potential of extracellular metabolites produced by *Streptomyces hygroscopicus* against phytopathogenic fungi', International journal of biological sciences, vol.4, no.5, pp.330–337.
215. Prapulla, SG, Jacob, Z, Chand, N, Rajalakshmi, D & Karanth, NG 1992, 'Maximization of lipid production by *Rhodotorula gracilis* CFR- 1 using response surface methodology', Biotechnology and bioengineering, vol.40, no.8, pp.965-970.
216. Pridham, TG, Hesselton, CW & Benedict, RG 1958, 'A guide for the classification of streptomycetes according to selected groups; placement of strains in morphological sections', Applied Microbiology, vol.6, no.1, pp. 52-79.
217. Raghava Rao, KV & Raghava Rao, T 2013, 'Molecular characterization and its antioxidant activity of a newly isolated *Streptomyces coelicoflavus* BC 01 from mangrove soil', Journal of Young Pharmacists, vol.5, no.4, pp. 121-126.
218. Rahman, H, Austin, B, Mitchell, WJ, Morris, PC, Jamieson, DJ, Adams, DR, Spragg, AM & Schweizer, M 2010, 'Novel anti-infective compounds from marine bacteria', Marine Drugs, vol.8, no.3, pp.498–518.
219. Rajendhran, J & Gunasekaran, P 2008, 'Strategies for accessing soil metagenome for desired applications', Biotechnology Advances, vol. 26, no.6, pp.576– 590.
220. Ramanamurthy, MV, Mohan, EVS & Sadhukhan, AK 1999, 'Cyclosporin A production by *Tolypocladium inflatum* using solid state fermentation', Process Biochemistry, vol.34, no.3, pp.269-280.



221. Ramesh, S & Mathivanan, N 2009, 'Screening of marine actinomycetes isolated from the Bay of Bengal, India for antimicrobial activity and industrial enzymes', *World Journal of Microbiology and Biotechnology*, vol.25, no.12, pp.2103–2111.
222. Ramesh, S, Rajesh, M & Mathivanan, N 2009, 'Characterization of a thermostable alkaline protease produced by marine *Streptomyces fungicidicus* MML1614', *Bioprocess and Biosystems Engineering*, vol.32, no.6, pp.791–800.
223. Rashad, FM, Fathy, HM, El-Zayat, AS & Elghonaimy, AM 2015, 'Isolation and characterization of multifunctional *Streptomyces* species with antimicrobial, nematicidal and phytohormone activities from marine environments in Egypt', *Microbiological Research*, In Press.
224. Ravikumar, S, Ibaneson, SJ, Uthiraselvam, M, Priya, SR, Ramu, A & Banerjee, MB 2011, 'Diversity of endophytic actinomycetes from Karangkadu mangrove ecosystem and its antibacterial potential against bacterial pathogens', *Journal of Pharmacy Research*, vol.4, no.1, pp.294-29.
225. Ravikumar, S, Gnanadesigan, M, Saravanan, A, Monisha, N, Brindha, V & Muthumari, S 2012, 'Antagonistic properties of seagrass associated *Streptomyces* sp., RAUACT-1: a source for anthraquinone rich compound', *Asian Pacific Journal of Tropical Medicine*, vol.5, no.11, pp.887–890.
226. Raytapadar, S & Paul, AK 2001, 'Production of an antifungal antibiotic by *Streptomyces aburavirensis* IDA-28', *Microbiological Research*, vol.155, no.4, pp.315-323.
227. Renner, MK, Shen, YC, Cheng, XC, Jensen, PR, Frankmoelle, W, Kauffman, CA, Fenical, W, Lobkovsky, E & Clardy, J 1999, 'Cyclomarins A-C, New anti-inflammatory cyclic peptides produced by a marine bacterium (*Streptomyces* sp.)', *Journal of the American Chemical society*, vol.121, no.49, pp.11273–11276.
228. Ripa, FA, Nikkon, F, Zaman, S & Khondkar, P 2009, 'Optimal Conditions for Antimicrobial Metabolites Production from a New *Streptomyces* sp. RUPA-08PR Isolated from Bangladeshi Soil', *Mycobiology*, vol. 37 no.3, pp. 211-214.
229. Robert, T 1986, *The Genius of China: 3,000 Years of Science, Discovery, and Invention*. New York.



230. Sacramento, DR, Coelho, RRR, Wigg, MD, Linhares, LFTL, Santos, MGM, Semedo, LTAS & da Silva, AJR 2004, 'Antimicrobial and antiviral activities of an actinomycete (*Streptomyces* sp.) isolated from a Brazilian tropical forest soil', World Journal of Microbiology and Biotechnology, vol.20, no.3, pp.225–229.
231. Saitou, N & Nei, M 1987, 'The neighbor-joining method: a new method for reconstructing phylogenetic trees', Molecular Biology Evolution, vol.4, no.4, pp. 406-425.
232. Sanchez, S & Demain, AL 2002, 'Metabolic regulation of fermentation processes. Enzyme and Microbial Technology', vol.31, no.7, pp.895–906.
233. Sanchez, S & Olson, B 2005, 'The bright and promising future of microbial manufacturing', Current opinion in microbiology, vol.8, no.3, pp.229–233.
234. Sanghvi, GV, Ghevareya, D, Gosai, S, Langa, R, Dhaduk, N, Kunjadia, PD, Vaishnava, DJ & Dave, GS 2014, 'Isolation and partial purification of erythromycin from alkaliphilic *Streptomyces werraensis* isolated from Rajkot, India', Biotechnology Reports, vol.1–2, pp. 2–7.
235. Sathyaranayanan, J, Kunthala, J & Gurumurthy, K 2011, 'Optimization of MRS media components using response surface methodology for the riboflavin production by *Lactobacillus fermentum* isolated from yogurt sample', International Food Research Journal, vol. 18, no.1, pp.149-158.
236. Sato, S, Iwata, F, Yamada, S, Kawahara, H & Katayama, M 2011, 'Usabamycins A–C: new anthramycin-type analogues from a marine-derived actinomycete', Bioorganic & medicinal chemistry letters, vol.2, no.23, pp.7099–7101.
237. Saunders, RN, Metcalfe, MS & Nicholson, ML 2001, 'Rapamycin in transplantation: A review of the evidence', Kidney international, vol.59, no.1, pp.3-16.
238. Saurav, K & Kannabiran, K 2012, 'Cytotoxicity and antioxidant activity of 5-(2,4-dimethylbenzyl)pyrrolidin-2-one extracted from marine *Streptomyces* VITSVK5 spp.', Saudi Journal of Biological Sciences, vol.19, no.1, pp.81–86.



239. Sayyad, SA, Panda, BP, Javed, S & Ali, M 2007, 'Optimization of nutrient parameters for lovastatin production by *Monascus purpureus* MTCC 369 under submerged fermentation using response surface methodology', *Applied Microbiology and Biotechnology*, vol.73, no.5, pp.1054–1058.
240. Scholar, EM & Pratt, WB 2000, *The Antimicrobial Drugs*, Oxford University Press, Oxford, UK.
241. Schumacher, RW, Talmage, SC, Miller, SA, Sarris, KE, Davidson, BS & Goldberg, A 2003, 'Isolation and structure determination of an antimicrobial ester from a marine sediment-derived bacterium', *Journal of natural products*, vol.66, no.9, pp.1291–1293.
242. Sehgal, SN 2003, 'Sirolimus: its discovery, biological properties, and mechanism of action', *Transplantation proceedings*, vol.35, no.3, pp.7-14.
243. Shah, F 1998, 'Erythromycin. Pediatrics in review / American Academy of Pediatrics', vol.19, no.4, pp.140-141.
244. Sharon, SFB, Daniel, RR & Shenbagarathai, R 2014, 'Optimization of antibiotic production by marine actinomycetes *Streptomyces* sp. KOD10', *International Journal of Pharmacy and Pharmaceutical Sciences*, vol.6, no.2, pp.506-510.
245. Shimizu, M, Nakagaw, AY, Sato, Y, Furumai, T, Igarashi, Y, Onaka, H, Yoshida, R & Kunoh, H 2000, 'Studies on endophytic acinomycetes. I. *Streptomyces* sp. isolated from rododendron and its antifungal activity', *Journal of General Plant Pathology*, vol.66, no.4, pp.360-366.
246. Shin, HJ, Kim, TS, Lee, HS, Park, JY, Choi, IK & Kwon, HJ 2008, 'Streptopyrrolidine, anangiogenesis inhibitor from a marine-derived *Streptomyces* sp. KORDI-3973', *Phytochemistry*, vol.69, no.12, pp.2363–2366.
247. Shioya, S, Morikawa, M, Kajihara, Y & Shimizu, H 1999, 'Optimization of agitation and aeration conditions for maximum virginiamycin production', *Applied Microbiology and Biotechnology*, vol. 51, no.2, pp.164- 169.
248. Shipanova, I, Bartoshevich, Y, Sibeldina, L, Zaslavskaya, P & Michtchenko, A 1995, 'Relationship Between Intracellular pH and Antibiotic Biosynthesis in *Fusidium coccineum*', *Applied Microbiology and Biotechnology*, vol.43, no.3, 514-517.



249. Shirai, K, Guerrero, I, Huerta, S, Saucedo, G, Castillo, A, Obdulia Gonzalez, R & Hall, GM 2001, 'Effect of initial glucose concentration and inoculum level of lactic acid bacteria in shrimp waste ensilation', Enzyme and microbial technology, vol.28, no.4-5, pp.446-452.
250. Shirinling, EB & Gottlib, D 1966, 'Methods for characterization of *Streptomyces* species', International Journal of Systematic Bacteriology, vol.16, no.3, pp.313-340.
251. Shiyamala devi, S, Priya, P & Renganathan, S 2014, Pyrrolo [1,2-A]pyrazine-1,4-dione, hexahydro-3-(2-methylpropyl)- and phenol, 2, 4-bis (1,1-dimethyl ethyl) novel antibacterial metabolites from a marine *Kocuria* Sp. SRS88: Optimization and its application in medical cotton gauze cloth against bacterial wound pathogens, International Journal of Pharmaceutical Research and Development, vol.6, no.2, pp.044-055.
252. Silva, CJS & Roberto, IC 2001, Optimization of xylitol production by *Candida guilliermondii* FTI 20037 using response surface methodology. Process Biochemistry, vol.36, no.11, pp.1119–1124.
253. Sing, SP, Verma, UN, Kishor, M & Samdani, HK 1998, 'Effect of medium concentration on citric acid production by submerged fermentation', Orient Journal of Chemistry, vol.14, no.1, pp.133-135.
254. Singh, N & Rai, V 2012, 'Optimization of cultural parameters for antifungal and antibacterial metabolite from microbial isolate; *Streptomyces rimosus* MTCC 10792 from soil of chhattisgarh', International Journal of Pharmacy and Pharmaceutical Sciences, vol 4, no.4, pp.94-101.
255. Skovsgaard, T & Nissen, NI 1975, 'Adriamycin, an antitumour antibiotic: a review with special reference to daunomycin', Danish medical bulletin, vol.22, no.2, pp. 62-73.
256. Slininger, PJ & Shea-Wilbur, MA 1995, 'Liquid-culture pH, temperature, and carbon (not nitrogen) source regulate phenazine productivity of the take-all biocontrol Agent *Pseudomonas fluorescens* 2-79', Applied Microbiology and Biotechnology, vol.43, no.5, pp.794-800.
257. Socha, AM, LaPlante, KL & Rowley, DC 2006, 'New bisantraquinone antibiotics and semi-synthetic derivatives with potent activity against clinical *Staphylococcus aureus* and *Enterococcus faecium* isolates', Bioorganic and Medicinal Chemistry, vol.14, no.24, pp.8446–8454.



258. Solanki, R, Khanna, M & Lal, R 2008, 'Bioactive compounds from marine actinomycetes', Indian Journal of Microbiology, vol.48, no.4, pp.410-431.
259. Soria-Mercado, IE, Prieto-Davo, A, Jensen, PR & Fenical, W 2005, 'Antibiotic terpenoid chloro-dihydroquinones from a new marine actinomycete', Journal of Natural Products, vol.68, no.6, pp.904–910.
260. Sousa, CS, Soares, ACF & Garrido, MS 2008, 'Characterization of Streptomycetes with potential to promote plant growth and biocontrol', Scientia Agricola, vol.65, no.1, pp.50–55.
261. Souza, R & Souza, NDV 2000, 'Screening Esturine actinomycetes for antibiotic production', Asian journal of microbiology, biotechnology & environmental sciences, vol.2, no.3-4, pp.201-207.
262. Sowndhararajan, K & Kang, SC 2013, 'Evaluation of in vitro free radical scavenging potential of *Streptomyces* sp. AM-S1 culture filtrate', Saudi Journal of Biological Sciences, vol.20, no.3, 227–233.
263. Sprusansky, O, Stirrett, K, Skinner, D, Denoya, C & Westpheling, J 2005, 'The bkdR gene of *Streptomyces coelicolor* is required for morphogenesis and antibiotic production and encodes a transcriptional regulator of a branched-chain amino acid dehydrogenase complex', Journal of Bacteriology, vol.187, no.2, pp.664-671.
264. Stach, JEM, Maldonado, LA, Ward, AC, Goodfellow, M & Bull, AT 2003, 'New primers for the class Actinobacteria: application to marine and terrestrial environments', Environmental Microbiology, vol.5, no.10, pp.828-841.
265. Stafford, DE & Stephanopoulos, G 2001, 'Metabolic engineering as an integrating platform for strain development', Current Opinion in Microbiology, vol.4, no.3, pp.336-340.
266. Strohl, WR 2004, Antimicrobials. In: Microbial Diversity and Bioprospecting. ASM Press.
267. Suay, I, Arenal, F, Asensio, FJ, Basilio, A, Cabello, MA, Díez, MT, García, JB, del Val, AG, Gorrochategui, J, Hernández, P, Peláez, F & Vicente, MF 2000, 'Screening of basidiomycetes for antimicrobial activities', Antonie Van Leeuwenhoek, vol.78, no.2, pp.129-139.



268. Subathra Devi, C, Kumari, A, Jain, N, Naine, JS & Mohanasrinivasan, V 2013, 'Screening of actinomycetes isolated from soil samples for antibacterial and antioxidant activity', International Journal of Pharmacy and Pharmaceutical Sciences, vol.5, no.4, pp.483-489.
269. Sudha, S & Masilamani, SM 2012, 'Characterization of cytotoxic compound from marine sediment derived actinomycete *Streptomyces avidinii* strain SU4', Asian Pacific Journal of Tropical Biomedicine, vol.2, no.10, pp. 770-773.
270. Sujatha, P, Bapi Raju, KV & Ramana, T 2005, 'Studies on a new marine Streptomycete BT-408 producing polyketide antibiotic SBR-22 effective against methicillin resistant *Staphylococcus aureus*', Microbiological Research, vol.160, no.2, pp.119–126.
271. Sunaryanto, R 2012, 'Optimization of *Streptomyces* sp.A11 medium cultivation on Cyclo(Tyrosyl-Prolyl) production using the Response surface methodology' International Journal of Waste Resources, vol. 2, no.2, pp.1-5.
272. Takahashi, A, Ikeda, D, Nakamura, H, Naganawa, H, Kurasawa, S, Okami, Y, Takeuchi, T & Iitaka, Y 1989, 'Altemicidin, a new acaricidal and antitumor substance' Journal of Antibiotics, vol.42, no.11, pp.1562-1566.
273. Takahashi, Y & Omura, S 2003, 'Isolation of new actinomycete strains for the screening of new bioactive compounds', Journal of General and Applied Microbiology, vol.49, no.3, pp.141-154.
274. Takizawa, M, Colwell, RR & Hill, RT 1993, 'Isolation and diversity of actinomycetes in the chesapeake bay', Applied and Environmental Microbiology, vol.59, no.4, pp.997-1002.
275. Tamamura, T, Sawa, T, Isshiki, K, Masuda, T, Homma, Y, Inuma, H, Naganawa, H, Hamada, M, Takeuchi, T & Umezawa, H 1985, 'Isolation and characterization of terpentecin, a new antitumor antibiotic', The Journal of antibiotics, vol.38, no.12, pp.1664-1649.
276. Tamehiro, N, Hosaka, T, Xu, J, Hu, H, Otake, N & Ochi, K 2003, 'Innovative approach for improvement of an antibiotic – overproducing industrial strain of *Streptomyces albus*', Applied and environmental microbiology, vol.69, no.11, pp.6412–6417.



277. Tamura, K, Dudley, J, Nei, M & Kumar, S 2007, 'MEGA4: Molecular Evolutionary Genetics Analysis (MEGA) software version 4.0', *Molecular biology and evolution*, vol.24, no.8, pp. 1596-1599.
278. Tanaka, Y & Omura, S 1993, 'Agroactive compounds of microbial origin', *Annual review of microbiology*, vol.47, no.1, pp.57–87.
279. Teruel, MLA, Gontier, E, Bienaime, C, Saucedo, JEN & Barbotin, JN 1997, 'Response surface analysis of chlortetracycline and tetracycline production with K-carrageenan immobilized *Streptomyces aureofaciens*', *Enzyme and Microbial Technology*, vol.21, no.5, pp.314–320.
280. Thenmozhi, M, Sindhura, S & Kannabiran, K 2010, 'Characterization of Antioxidant activity of *Streptomyces* species VITTK3 isolated from Puducherry Coast, India', *Journal of Advanced Scientific Research*, vol.1, no.2, pp.46-52.
281. Thompson, JD, Gibson, TJ, Plewniak, F, Jeanmougin, F & Higgins, D G 1997, 'The CLUSTAL\_X windows interface: flexible strategies for multiple sequence alignment aided by quality analysis tools', *Nucleic Acids Research*, vol.25,no.24, pp.4876–4882
282. Thompson, JD, Higgins, DG & Gibson, TJ 1994, 'CLUSTAL W: improving the sensitivity of progressive multiple sequence alignment through sequence weighting, position-specific gap penalties and weight matrix choice', *Nucleic Acids Research*, vol. 22, no.22, pp.4673–4680.
283. Tiner, JH 1991, Louis Pasteur: Founder of Modern Medicine, Mott Media.
284. Torsvik, V & Øvreas, L 2002, 'Microbial diversity and function in soil: from genes to ecosystems', *Current Opinion in Microbiology*, vol.5, no.3, pp.240–245.
285. Trenser, HD & Danga, F 1958, 'Hydrogen sulfide production by *Streptomyces* as criterion for species differentiation', *Journal of Bacteriology*, vol.76, no.3, pp. 239 -244.
286. Uchechi, NK & Erinma, K 2007, 'Investigation of plasmid DNA and antibiotic resistance in somepathogenic organisms', *African Journal of Biotechnology*, vol. 6 no.7, pp. 877-880.



287. Uddin, M, Mahmud, N, Anwar, N & Manchur, MA 2013, 'Bioactive metabolite production by *Streptomyces albolongus* in favourable environment', Journal of Microbiology and Infectious Diseases, vol.3, no.2, pp.75-82.
288. Vastrand, BM & Neelagund, SE 2011, 'Optimization and Production of Neomycin from Different Agro Industrial Wastes in Solid State Fermentation', International Journal of Pharmaceutical Sciences and Drug Research, vol.3, no.2, pp.104-111.
289. Vézina, C, Kudelski, A & Sehgal, SN 1975, 'Rapamycin (AY-22,989), a new antifungal antibiotic. I. Taxonomy of the producing streptomycete and isolation of the active principle', The Journal of Antibiotics, vol.28, no.10, pp.721-726.
290. Vining, LC & Stuttard, C 1995, Chloramphenicol. Genetics and Biochemistry of Antibiotic Production, Newton, Butterworth Heinemann.
291. Vining, LC 1992, 'Secondary metabolism, inventive evolution and biochemical diversity -a review', Gene, vol.115, no.1-2, pp.135-140.
292. Von Nussbaum, F, Brands, M, Hinzen, B, Weigand, S & Häbich, D 2006, 'Antibacterial natural products in medicinal chemistry--exodus or revival?', Angewandte Chemie, vo.45, no.31, pp.5072-50129.
293. Waksman, SA & Henrici, AT 1943, 'The nomenclature and classification of the actinomycetes', Journal of Bacteriology, vol.46, no.4, pp.337-341.
294. Waksman, SA 1961, The Actinomycetes Classification, identification and description of genera and species, Williams and Wilkins, Baltimore.
295. Walker, JD & Colwell, RR 1975, Factors affecting enumeration and isolation of actinomycetes from Chesapeake Bay and South eastern Atlantic Ocean sediments, Marine Biology, vol.30, no.3, pp.193-201.
296. Wang, XJ, Gong, DL,Wang, JD, Zhang, J, Liu, CX & Xiang, WS 2011, 'A new quinoline derivative with cytotoxic activity from *Streptomyces* sp. neau50', Bioorganic and Medicinal Chemistry Letters, vol.21, no.8, pp.2313-2315.



297. Wang, YX & Lu, ZX 2004, 'Statistical optimization of media for extracellular polysaccharide by Pholiota squarrosa (Pers. ex Fr.) Quel. AS 5.245 under submerged cultivation', Biochemical Engineering Journal, vol.20, no.1, pp.39-47.
298. Ward, AC & Bora, N 2006, 'Diversity and biogeography of marine actinobacteria', Current opinion in microbiology, vol.9, no.3, pp.279-286 .
299. Wardani, IGAAK, Andayani, DGS, Sukandar, U, Sukandar, EY & Adnyana, IK 2013, 'Study on antimicrobial activity of Nocardia sp. strain TP1 isolated from Tangkuban Perahu soil, West Java, Indonesia', International Journal of Pharmacy and Pharmaceutical Sciences, vol. 5, no. 2, pp.713-716.
300. Watve, MG, Tickoo, R, Jog, MM & Bhole, BD 2001, 'How many antibiotics are produced by the genus *Streptomyces*?', Archives of microbiology, vol.176, no.5, pp.386–390
301. Weber, T, Welzel, K, Pelzer, S, Vente, A & Wohlleben, W 2003, Exploiting the genetic potential of polyketide producing *Streptomycetes*, Journal of biotechnology, vol.106, no.2-3, pp.221-232.
302. Williams, ST & Wellington, EMH 1982, Principles and problems of selective isolation of microbes, Academic Press, London.
303. Williams, DH, Stone, MJ, Hauck, PR & Rahman, SK 1989, Why are secondary metabolites (natural products) biosynthesized?, Journal of natural products, vol.52, no.6, pp.1189-1208.
304. Williams, ST & Cross, T 1971, Actinomycetes: Methods in Microbiology, Academic Press, New York, U.S.A.
305. Williams, ST, Goodfellow, M & Alderson, G 1989, Genus *Streptomyces*, Bergey's Manual of Systematic Bacteriology, Williams and Wilkins Company, Baltimore.
306. Williams, ST, Goodfellow, M, Alderson, G, Wellington, EM, Sneath, PH & Sackin, MJ 1983, 'Numerical classification of *Streptomyces* and related genera', Journal of General Microbiology, vol.129, no.6, pp.1743-1813.



307. Williams, T & Davies, FL 1967, 'Use of a scanning electron microscope for the examination of *actinomycetes*', Journal of General Microbiology, vol. 48, no.2, pp.171-177
308. Wu, SJ, Fotso, S, Li, F, Qin, S & Laatsch, H 2007, 'Amorphane sesquiterpenes from a marine *Streptomyces* sp.', Journal of Natural Products, vol.70, no.2, pp.304–306.
309. Wu, SJ, Fotso, S, Li, F, Qin, S, Kelter, G, Fiebig, HH & Laatsch, H 2006, 'N-carboxamido-staurosporine and selina-4(14),7(11)-diene-8,9-diol, new metabolites from a marine *Streptomyces* sp.', The Journal of Antibiotics, vol.59, no.6, pp.331–337.
310. Xin, C, Yin, L, Guocheng, D & Jian, C 2005, 'Application of response surface methodology in medium optimization for spore production of *Coniothyrium minitans* in solid state fermentation', World Journal of Microbiology and Biotechnology, vol. 21, no.4, pp.593–599.
311. Xu, Y, He, H, Schulz, S, Liu, X, Fusetani, N, Xiong, H, Xiao, X & Qian, PY 2010, 'Potent antifouling compounds produced by marine *Streptomyces*', Bioresource Technology, vol.101, no.4, pp.1331–1336.
312. Yarbrough, GG, Taylor, DP, Rowlands, RT, Crawford, MS & Lasure, LL 1993, 'Screening microbial metabolites for new drugs-theoretical and practical issues', The Journal of Antibiotics, vol.46, no.4, pp.535-544.
313. Yee, L & Blanch, HW 1993, 'Defined media optimization for the growth of recombinant *Escherichia coli* X90', Biotechnology and bioengineering, vol.41, no.2, pp.221-230.
314. Yokota, A 1997, Phylogenetic relationship of actinomycetes. Atlas of actinomycetes, Asakura Publishing Corporation limited, Japan.
315. Zähner, H & Maas, WK 1972, Biology of antibiotics, Springer-Verlag, United States, New York.
316. Zarandi, ME, Bonjar, GSH, Dehkaei, FP, Moosavi, SAA, Farokhi, PR & Aghighi, S 2009, 'Biological control of rice blast (*Magnaporthe oryzae*) by use of *Streptomyces sindeneusis* isolate 263 in greenhouse', American Journal of Applied Sciences, vol.6, no.1, pp.194–199.
317. Zarb, P & Goossens, H 2012, 'Human use of antimicrobial agents. Revue scientifique et technique', vol.31, no.1, pp.121–133.

