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INFORMATION FOR CONTRIBUTORS

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- [1] Kananthai A., *J. Comp. Appl. Math.*, 1997; **84**: 101-106. DOI 10.1007/s11274-013-1451-9.
- [2] Rangseekaew P. and Pathom-aree W., *Front. Microbiol.*, 2019; **10**: 387. DOI 10.3389/fmicb.2019.00387.
- [3] Penkhruw W., Kanpiengjai A., Khanongnuch C., Masaki K., Pathom-aree W., Punyodom W., et al., *Prep. Biochem. Biotechnol.*, 2017; **47(7)**: 730-738. DOI 10.1080/10826068.2017.1315597.

Texts :

- [4] Clark M.S. and Wall W.J., *Chromosomes: The Complex Code*, 1st Edn., Chapman and Hall, London, 1996.

Chapter in an Edited Text :

- [5] Pender M.P., Apoptosis in the Target Organ of an Autoimmune Disease; in Levin M. and Watters D., eds., *Programmed Cell Death*, Gordon and Breach, Philadelphia, 1993: 235-240.

Thesis / Dissertation :

- [6] Srichuanhuenskul W., *Modern Chromatography of Metal Chelates*, PhD Thesis, Chiang Mai University, Thailand, 1994.
- [7] Insuk C., *Actinobacteria from Bryophytes and Their Ability to Produce Plant-Growth Promoters*, MSc Thesis, Chiang Mai University, Thailand, 2020.

Patents :

- [8] Haga T., *Japan Pat. No.* 50-54628 (1976).

Proceedings :

- [9] Chaiwong S. and Plikomol A., *Proceedings of the 1st International Conference for a Sustainable Greater Mekong Sub-Region (GMSTEC 2010)*, Bangkok, Thailand, 26-27 August 2010; 596-601.

DOI Reference :

- [10] Mingma R., Thamchaipenet A. and Duangmal K., *World J. Microbiol. Biotechnol.*, 2013; DOI 10.1007/s11274-013-1451-9.

Online document :

- [11] Cartwright J., Big stars have weather too; Available at:
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