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- Alberts, B., Johnson, A., Lewis, J., Morgan, D., Raff, M., Roberts, K., & Walter, P., 2014, *Molecular Biology of The Cell*, 6th Ed., 134-144, Garland Science, New York.
- Aldeghi, M., Malhotra, S., Selwood, D.L., & Chan, A.W., 2014, Two- and three-dimensional rings in drugs, *Chem. Biol. Drug Des.*, **83**, 450 – 461.
- Anastas, P.T., & Warner, J.C., 1998, *Green Chemistry: theory and practice*, Oxford University Press, New York.
- Anderson, E.M., Larsson, K.M., & Kirk, O., 1998, One Biocatalyst–Many Applications: The Use of *Candida Antarctica* B-Lipase in Organic Synthesis, *Biocatalysis and Biotransformation*, **16**(3), 181–204.
- Atkins, P., & Jones, L., 2007, *Chemical Principles: The Quest for Insight*, W. H. Freeman, San Francisco.
- Bruice, P. Y., 2017, *Organic Chemistry*, 8th Ed., 927-929, Pearson, New Jersey.
- Christelle, B., De Oliveira, E.B., Chebil, L., Maia, E.R., Maigret, B., Ronat-Heidt, E., Ghoul, M., Engasser, J.M., & Elaine, Humeau, C., 2011, Combined docking and molecular dynamics simulations to enlighten the capacity of *Pseudomonas cepacia* and *Candida antarctica* lipases to catalyze quercetin acetylation, *Journal of Molecular Biotechnology*, **156**, 203–210.
- De Oliveira, E.B., Humeau, C., Chebil, L., Maia, E.R., Dehez, F., Maigret, B., Ghoul, M., & Engasser, J.M., 2009, A molecular modelling study to rationalize the regioselectivity in acylation of flavonoid glycosides catalyzed by *Candida antarctica* lipase B, *Journal of Molecular Catalysis B: Enzymatic*, **59**, 96–105.
- Debieux, J.L., & Bochet, C.G., 2010, Photoinduced Acyl Transfer, *Journal of Physical Organic Chemistry*, **23**(4), 272 – 282.
- Devlin, T.M., 1997, *Textbook of Biochemistry with Clinical Correlations*, 127-130, Wiley-Liss, New York.
- Fersht, A., 1985, *Enzyme Structure and Mechanism*, 3-9, W. H. Freeman, San Francisco.
- Furniss, B.S., Hannaford, A.J., Smith, P.W.G. & Tatchell, A.R., 1989, *Vogel's Textbook of Practical Organic Chemistry*, 5th Ed., 916-920, Longman Scientific & Technical, Harlow.
- Gotor-Fernandez, V., Bustos, E., & Gotor, V., 2006, *Candida antarctica Lipase B: An Ideal Biocatalyst for the Preparation of Nitrogenated Organic Compounds*, *Adv. Synth. Catal.*, **348**, 797–812.



- Hasan, F., Shah, A.A., & Hameed, A., 2006, Industrial applications of microbial lipases, *Enzyme and Microbial Technology*, **39**, 235-251.
- Illanes, A., 2008, *Enzyme Biocatalysis: Principles and Applications*, Springer Science.
- Jain, A.N., 2006, Scoring Functions for Protein-Ligand Docking, *Current Protein & Peptide Science*, **7**: 407-420.
- Kirk, O., & Christensen, M.W., 2002, Lipases from *Candida antarctica*: Unique Biocatalysts from a Unique Origin, *Org. Proc. Res. Dev.*, **6**, 446-451.
- Kumalo, H., Bhakat, S., & Soliman, M., 2015, Theory and Applications of Covalent Docking in Drug Discovery: Merits and Pitfalls, *Molecules*, **20**, 1984–2000.
- Kwon, C.H., Shin, D.Y., Lee, J.H., Kim, S.W., & Kang, J.W., 2007, Molecular Modeling and its Experimental Verification for the Catalytic Mechanism of *Candida antarctica* Lipase B, *J. Microbiol. Biotechnol.*, **17**(7), 1098-1105.
- Lengauer, T., & Rarey, M., 1996, Computational Methods for Biomolecular Docking, *Current Opinion in Structural Biology*, **6**: 402-406.
- Linthorst, J.A., 2010, An overview: Origins and development of green chemistry, *Foundations of Chemistry*, **12**, 55–68.
- Lowe, M.E., 1992, The catalytic site residues and interfacial binding of human pancreatic lipase, *The Journal of Biological Chemistry*, **267**, 17069-17073.
- McGaughey, G.B., Gagne, M., & Rappe, A.K., 198, π -Stacking Interactions: Alive and Well in Proteins, *The Journal of Biological Chemistry*, **273**, 15458–15463.
- McMurtry, J., 2012, *Organic Chemistry*, 8th Ed, 818 – 836, Brooks/Cole Cengage Learning, Belmont.
- Molecular Operating Environment (MOE), 2018.01; Chemical Computing Group Inc., 1010 Sherbooke St. West, Suite #910, Montreal, QC, Canada, H3A 2R7, **2018**.
- Palocci, C., Falconi, M., Alcaro, S., Tafi, A., Puglisi, R., Ortuso, F., Botta, M., Alberghina, L., Cernia, E., 2007, An approach to address *Candida rugosa* lipase regioselectivity in the acylation reactions of trytilated glucosides, *Journal of Biotechnology*, **128**, 908-918.
- Paravidino, M., & Hanefeld, U., 2011, Enzymatic acylation: assessing the greenness of different acyl donors, *Green Chem.*, **13**, 2651-2657.
- Pleiss, J., Fischer, M., & Schmid, R.D., 1998, Anatomy of lipase binding sites: the scissile fatty acid binding site, *Chemistry and Physics of Lipids*, **93**, 67–80.



- Rantwijk, F., Hacking, M.A.P.J., & Sheldon, R.A., 2000, Lipase-Catalyzed Synthesis of Carboxylic Amides: Nitrogen Nucleophiles as Acyl Acceptor, *Chemical Monthly*, **131**, 549–569.
- Rotticci, D., Hæffner, F., Orrenius, C., Norin, T., & Hult, K., 1998, Molecular recognition of sec-alcohol enantiomers by *Candida antarctica* lipase B, *Journal of Molecular Catalysis B: Enzymatic*, **5**(1-4), 267–272.
- Roughley, S.D., & Jordan, A.M., 2011, The medicinal chemist's toolbox: an analysis of reactions used in the pursuit of drug candidates, *J. Med. Chem.*, **54**, 3451 – 3479.
- Sheldon, R.A., & Woodley, J.M., 2018, Role of Biocatalysis in Sustainable Chemistry, *Chemical Reviews*, **118**, 801–838.
- Stauch, B., Fisher, S.J., Cianci, M., 2015, Open and closed states of *Candida antarctica* lipase B: protonation and the mechanism of interfacial activation, *Journal of Lipid Research*, **56**(12), 2348-2358.
- Stryer L., Berg, J.M., & Tymoczko, J.L., 2002, *Biochemistry* (5th ed.), 190-259, W.H. Freeman, San Francisco.
- Teodoro, M.L., Philips, G.N., & Kavraki, L.E., 1999, *Molecular Docking: A Problem with Thousands Degree of Freedom*, Portuguese Ministry of Science.
- Uppenberg , J., Hansen, M.T., Patkar, S., & Jones, A., 1994, The sequence, crystal structure determination and refinement of two crystal forms of lipase B from *Candida antartica*, *Science Direct*, **2**, 293-308.
- Uppenberg, J., Oehrner, N., Norin, M., Hult, K., Kleywelt, G. J., Patkar, S., & Jones, T.A., 1995, Crystallographic and molecular-modeling studies of lipase B from *Candida antarctica* reveal a stereospecificity pocket for secondary alcohols, *Biochemistry*, **34**(51), 16838–16851.
- Veld, M.A.J., & Palmans, A.R.A., 2010, Hydrolases Part I: Enzyme Mechanism, Selectivity and Control in the Synthesis of Well-Defined Polymers, *Enzymatic Polymerisation*, **237**, 55-78.
- Vert, M., Doi, Y., Hellwich, K.H., Hess, M., Hodge, P., Kubisa, P., Rinaudo, M., & Schué, F., 2012, Terminology for biorelated polymers and applications (IUPAC Recommendations 2012), *Pure and Applied Chemistry*, **84**, 377–410.
- Wibowo, F.S., 2018, Molecular Modelling Reaksi Asetilasi Para Aminofenol Terkatalisis Carica papaya Lipase: Homology Modelling, Covalent Docking, Molecular Dynamics dan Konfirmasi Eksperimental, *Tesis*, Fakultas Farmasi Universitas Gadjah Mada Yogyakarta.



Wu, Q., Soni, P., & Reetz, M. T. 2013, Laboratory Evolution of Enantiocomplementary *Candida antarctica* Lipase B Mutants with Broad Substrate Scope, *Journal of the American Chemical Society*, **135**(5), 1872–1881.

Wong, C.H. & Whitesides, G.M., 1994, *Enzymes in Synthetic Organic Chemistry*, Academic Press.

Yang, B., Zhang, Y., Zhang, S., & Izumi, T., 2005, Amidation of amines with esters catalyzed by *Candida antarctica* lipase (CAL), *Indian Journal of Chemistry*, **44**, 1312 – 1316.