REFERENCES

Áková, L. B. A. Č., Filová, E., Ek, F. R. Č., Ík, V. Š. Č., & Starý, V. (2004). Cell Adhesion on Artificial Materials for Tissue Engineering. *Physiol. Res.*, *53*(Suppl. 1), 35–45.

Ammerman, N. C., Beier-Sexton, M., & Azad, A. F. (2009). Growth and Maintenance of Vero Cell Lines. *Curr Protoc Microbiol*, (November), 1–10. https://doi.org/10.1002/9780471729259.mca04es11.Growth

Arifin, M. A., Mel, M., Samsudin, N., Zuhanis, Y., Hashim, H., & Salleh, M. (2016). Ultraviolet / ozone treated polystyrene microcarriers for animal cell culture. *Journal of Chemical Technology and Biotechnology*, *91*(10), 2607–2619. https://doi.org/10.1002/jctb.4855

Berry, J. M., Barnabe, N., Coombs, K. M., & Butler, M. (1999). Production of Reovirus Type-1 and Type-3 from Vero Cells Grown on Solid and Macroporous Microcarriers. *Biotechnology and Bioengineering*, *62*(1), 12–19. https://doi.org/10.1002/(SICI)1097-0290(19990105)62:1<12::AID-BIT2>3.0.CO;2-G

Bgdard, C., Tom, R., & Kamen, A. (1993). Growth , Nutrient Consumption , and End-Product Accumulation in Sf-9 and BTI-EAA Insect Cell Cultures : Insights into Growth Limitation and Metabolism. *Biotechnology*, *9*, 615–624.

Bleckwenn, N., Golding, H., Bentley, W., & Shiloach, J. (2005). Production of recombinant proteins by vaccinia virus in a microcarrier based mammalian cell perfusion bioreactor. *Biotechnol Bioeng*, *90*(6), 663–674. https://doi.org/10.1002/bit.20423

Borysenko, J. Z., & Woods, W. (1979). Density, Distribution and Motility of Surface Anions on a Normal/Transformed Cell Pair. *Experimental Cell Research*, *118*, 215–227.

Bottenstein, J. E., & Sato, G. H. (1979). Growth of a rat neuroblastoma cell line in serum-free supplemented medium. *Proc. Natl. Acad. Sci. USA*, *76*(1), 514–517.

Butler, M. (2004). *Animal Cell Culture and Technology*. London: BIOS Scientific Publishers.

Butler, M., Burgener, A., Patrick, M., Berry, M., Moffatt, D., Huzel, N., … Coombs, K. (2000). Application of a Serum-Free Medium for the Growth of Vero Cells and the Production of Reovirus. *Biotechnology Progress*, *16*(5), 854–858. https://doi.org/10.1021/bp000110+

Cann, A. J. (1999). *Virus Culture: A Practical Approach*. (B. D. Hames, Ed.). Oxford: Oxford University Press.

Castilho, L. R., Moraes, A. M., Augusto, E. F. P., & Butler, M. (2008). *Animal Cell Technology: From Biopharmaceuticals to Gene Theraphy*. (E. Owen, K. Lyons, & S. Hill,

Eds.). New York: Taylor & Francis Group.

Chen, D. R., Bei, J. Z., & Wang, S. G. (2000). Polycaprolactone microparticles and their biodegradation. *Polymer Degradation and Stability*, *67*(3), 455–459. https://doi.org/10.1016/S0141-3910(99)00145-7

Costa, A. R., Withers, J., Rodrigues, M. E., Mcloughlin, N., Henriques, M., Oliveira, R., … Azeredo, J. (2013). The impact of microcarrier culture optimization on the glycosylation profile of a monoclonal antibody. *SpringerPlus*, *2*(25), 1–10. https://doi.org/10.1186/2193-1801-2-25

DeliveReD, G. (2012). ATCC Animal Cell Culture Guide. *The Essentials of Life Science Research*, 1–39.

Drews, M., Paalme, T., & Vilu, R. (1995). The growth and nutrient utilization of the insect cell line Spodoptera frugiperda Sf9 in batch and continuous culture. *Journal of Biotechnology*, *40*(March), 187–198.

Eagle, H. (2016). Amino Acid Metabolism in Mammalian Cell Cultures Published by : American Association for the Advancement of Science Linked references are available on JSTOR for this article : Amino Acid Metabolism in Mammalian Cell Cultures, *130*(3373), 432–437.

Field, R. P. (2003). (12) United States Patent, *1*(May 1993), 5.

Freshney, R. I. (2005). *Culture of Animal Cells: A Manual of Basic Technique* (Fifth). John Wiley & Sons.

Froud, S. (1999). The development, benefits and disadvantages of serum-free media. *Dev Biol Stand*, *99*, 157–166.

Gelamo, E. L., Silva, C. H. T. P., Imasato, H., & Tabak, M. (2002). Interaction of bovine (BSA) and human (HSA) serum albumins with ionic surfactants: spectroscopy and modelling. *Biochimica et Biophysica Acta (BBA) - Protein Structure and Molecular Enzymology*, *1594*(1), 84–99. https://doi.org/https://doi.org/10.1016/S0167-4838(01)00287-4

Graff, S., & McCarty, K. S. (1957). Sustained cell culture. *Experimental Cell Research*, *13*(2), 348–357. https://doi.org/https://doi.org/10.1016/0014-4827(57)90014-9

Griffiths, J. B. (1972). The Effect Of Cell Population Density On Nutrient Uptake And Cell Metabolism: A Comparative Study Of Human Diploid And Heteroploid Cell Lines. *Journal of Cell Science*, *10*, 515–524.

Grinnell, F. (1978). Cellular Adhesiveness and Extracellular Substrata, *53*, 65–144.

Groot, V. D. V. (1995). Microcarrier technology , present status and perspective. *Cytotechnology*, *18*, 51–56.

Harrison, M. A., & Rae, I. F. (1997). *General Techniques of cell culture*. New York: Cambridge University Press.

Hayashi, I., & Sato, G. H. (1976). Replacement of serum by hormones permits growth of cells in a defined medium. *Nature*, *259*(5539), 132–134. https://doi.org/10.1038/259132a0

Herman, P., & Pauwels, K. (2014). *Biosafety Recommendations on the Handling of Animal Cell Cultures*. Springer, Cham. https://doi.org/https://doi.org/10.1007/978-3-319-10320-4_22

Himmelfarb, P., Thayer, P., & Martin, H. (1969). Spin Filter Culture : The Propagation of Mammalian Cells in Suspension. *Science*, *164*(3879), 555–557.

Holley, R. W., Armour, R., & Baldwin, J. H. (1978). Density-dependent regulation of growth of BSC-1 cells in cell culture : Growth inhibitors formed by the cells. *Proc. Natl. Acad. Sci. USA*, *75*(4), 1864–1866.

Imamura, T., Crespi, C. L., Thilly, W. G., & Brunengraber, H. (1982). Fructose as a Carbohydrate Source Yields Stable pH and Redox Parameters in Microcarrier Cell Culture. *Analytical Biochemistry*, *124*(2), 353–358. https://doi.org/https://doi.org/10.1016/0003-2697(82)90051-3

Journal, B., Maia, J. L., & Santana, M. H. A. (2004). THE EFFECT OF SOME PROCESSING CONDITIONS ON THE CHARACTERISTICS OF BIODEGRADABLE MICROSPHERES OBTAINED BY AN EMULSION SOLVENT EVAPORATION PROCESS. *Brazilian Journal of Chemical Engineering*, *21*(1), 1–12.

Kosa, T., Maruyama, T., & Otagiri, M. (1997). Species differences of serum albumins: I. Drug binding sites. *Pharm Res*, *14*(11), 1607–1612.

Lei, B., Shin, K., Noh, D., Jo, I., Koh, Y., Kim, H., & Eun, S. (2013). Sol – gel derived nanoscale bioactive glass (NBG) particles reinforced poly (ε -caprolactone) composites for bone tissue engineering. *Materials Science & Engineering C*, *33*(3), 1102–1108. https://doi.org/10.1016/j.msec.2012.11.039

Li, B., Wang, X., Wang, Y., Gou, W., Yuan, X., Peng, J., … Lu, S. (2015a). Past, present, and future of microcarrier based tissue engineering. *Journal of Orthopaedic Translation*, *3*(2), 51–57. https://doi.org/https://doi.org/10.1016/j.jot.2015.02.003

Li, B., Wang, X., Wang, Y., Gou, W., Yuan, X., Peng, J., … Lu, S. (2015b). Past , present , and future of microcarrier- based tissue engineering. *Journal of Orthopaedic Translation*, *3*(2), 51–57. https://doi.org/10.1016/j.jot.2015.02.003

Lock, L. T., & Tzanakakis, E. S. (2009). Expansion and Differentiation of Human Embryonic Stem Cells to Endoderm Progeny in a Microcarrier Stirred-Suspension Culture. *Tissue Engineering*, *15*(8), 2051–2063.

Mather, J. P., & Roberts, P. . (2002). *Introduction to Cell and Tissue Culture: Theory and Technique*. South San Francisco: Library of Congress Cataloging-in-Publication Data.

McGowan, J. A., Russell, W., & Bucher, N. (1984). Hepatocyte DNA replication: Effect of nutrients and intermediary metabolites. *Federation Proceedings*, *43*(1), 131–133.

Mehrara, E., Forssell-aronsson, E., & Bernhardt, P. (2007). Specific Growth Rate versus Doubling Time for Quantitative Characterization of Tumor Growth Rate. *Research Article*, *67*(8), 3970–3976. https://doi.org/10.1158/0008-5472.CAN-06-3822

Mendonc, R. Z., Palomares, L. A., & Ramı, O. T. (1999). An insight into insect cell metabolism through selective nutrient manipulation. *Journal of Biotechnology*, *72*(February), 61–75.

Merten, O. (2015). Advances in cell culture : anchorage dependence. *Philosophical Transactions B*, *370*(1661). https://doi.org/10.1098/rstb.2014.0040

Microcarrier Cell Culture. (2005). Sweden: GE Healthcare Bio-Sciences AB.

Microcarrier cell culture principles & methods. (1999). Sweden: Amersham Pharmacia Biotech AB.

Moreno, F., Cortijo, M., & Gonzalez-Jimenez, J. (1999). The fluorescent probe prodan characterizes the warfarin binding site on human serum albumin. *Photochem Photobiol*, *69*(1), 8–15.

Nahapetian, A. R. A. T., Thomasj, J. N., & Thillyj, W. G. (1986). Optimization Of Environment For High Density Vero Cell Culture: Effect Of Dissolved Oxygen And Nutrient Supply On Cell Growth And Changes In Metabolites. *Biotechnology*, *81*, 65–103.

Nilsson, K., Buzsaky, F., & Mosbach, K. (1986). Growth of Anchorage–Dependent Cells on Macroporous Microcarriers. *Nature Biotechnology*, *4*(11), 989–990. https://doi.org/10.1038/nbt1186-989

Ohman, L., & Ljunggren, J. (1995). Induction of a metabolic switch in insect cells by substrate-limited fed batch cultures. *Appl Microbiol Biotechnol*, *43*(January), 1006–1013.

Oyeleye, O. O., Ogundeji, S. T., Ola, S. I., & Omitogun, O. G. (2016). Basics of animal cell culture : Foundation for modern science. *Acedemic Journals*, *11*(May), 6–16. https://doi.org/10.5897/BMBR2016.0261

Ozturk, S. S., & Hu, W.-S. (2006). *CELL CULTURE TECHNOLOGY FOR PHARMACEUTICAL AND CELL-BASED THERAPIES*. New York: Taylor & Francis Group.

Sahastrabuddhe, A. P. (2016). COUNTING OF RBC AND WBC USING IMAGE PROCESSING : A. *International Journal of Research in Engineering and Technology*, *5*(5), 356–360.

Schiff, L. J. (2005). Review : Production , Characterization , And Testing Of Banked Mammalian Cell Substrates Used To Produce Biological Products. *In Vitro Cellular and Developmental Biology Animal*, *41*(3–4), 65–70.

Sinha, B. K., & Kumar, R. (2008). *Principles of Animal Cell Culture*. India: International Book Distributing Co.

Stacey, G., & Bar, P. (2001). Primary Cell Cultures and Immortal Cell Lines. *Encyclopedia of Life Sciences*, 5.

Sun, M., Jiang, Y., Li, W., Li, P., Li, G., Jiang, S., & Liao, G. (2004). A novel process for production of hepatitis A virus in Vero cells grown on microcarriers in bioreactor. *World J Gastroenterol*, *10*(17), 2571–2573. https://doi.org/10.3748/wjg.v10.i17.2571

Thilly, W. G., Barngrover, D., & Thomas, J. N. (1982). Microcarriers And The Problem Of High Density Cell Culture. *From Gene to Protein: Translation Into Biotechnology*, 75–103. https://doi.org/https://doi.org/10.1016/B978-0-12-045560-7.50010-X

Valk, J. Van Der, Brunner, D., Smet, K. De, Svenningsen, Å. F., Honegger, P., Knudsen, L. E., … Gstraunthaler, G. (2010). Optimization of chemically defined cell culture media – Replacing fetal bovine serum in mammalian in vitro methods. *Toxicology in Vitro*, *24*(4), 1053–1063. https://doi.org/10.1016/j.tiv.2010.03.016

Valk, J. Van Der, Mellor, D., Brands, R., Fischer, R., Gruber, F., & Gstraunthaler, G. (2004). The humane collection of fetal bovine serum and possibilities for serum-free cell and tissue culture. *Toxicology in Vitro*, *18*, 1–12. https://doi.org/10.1016/j.tiv.2003.08.009

Wasley, G. D., & May, J. W. (1971). *Animal Cell Culture Methods*. Oxford and Edinburgh: Lippincott Williams & Wilkins.

Westfall, B. B., Evans, V., Shannon, J. E., & Earle, W. R. (1953). The Glycogen Content of Cell Suspen- sions Prepared from Massive Tissue Culture : Cornpartson of Cells Derived from Mouse Connective Tissue and. *Journal of the National Cancer Institute*, *14*(3), 655–664.

Wezel, A. L. Van. (1967). Growth of cell-strains and primary cells on micro-carriers in homogeneous culture. *Nature*, *216*(5110), 64–65.

Wu, S., & Huang, G. Y. (2002). Stationary and Microcarrier Cell Culture Processes for Propagating Japanese Encephalitis Virus. *Biotechnology Progress*, *18*(1), 124–128. https://doi.org/10.1021/bp010120q

Xiu-wen, W., Ru-feng, W., Ming, Y., Wei, X., & Xiu-wei, Y. (2013). Dulbecco ' s modified eagle ' s medium and minimum essential medium – which one is more preferred for establishment of Caco-2 cell monolayer model used in evaluation of drug absorption ? *An International Journal of Pharmaceutical Sciences*, *68*(10), 805–810. https://doi.org/10.1691/ph.2013.2225

Yao, T., & Asayama, Y. (2017). Animal-cell culture media : History , characteristics , and current issues. *Reproductive Medicine and Biology*, *16*(January), 99–117. https://doi.org/10.1002/rmb2.12024

Zhang, X., Deng, Z., Wang, H., Yang, Z., Guo, W., Li, Y., … Jin, Y. (2009). Expansion and delivery of human fibroblasts on micronized acellular dermal matrix for skin regeneration. *Biomaterials*, *30*(14), 2666–2674. https://doi.org/10.1016/j.biomaterials.2009.01.018

Zielke, H. R., Zielke, C. L., & Ozand, P. T. (1984). Glutamine: A Major Energy Source For Cultured Mammalian Cells. *Federation Proceedings*, *43*(1), 121–125.