



UNIVERSITAS
GADJAH MADA

Pola Absorbansi Eritrosit dalam Darah-EDTA Pada Penderita Leukemia Limfoblastik Akut (LLA)

Melalui

Kajian Spektroskopi UV-VIS

DENI ARYATI, 1. Dr. Iman Santoso, M.Sc., 2. Dr. Ngadikun, M.Biomed

Universitas Gadjah Mada, 2019 | Diunduh dari <http://etd.repository.ugm.ac.id/>

DAFTAR PUSTAKA

- Abidin, Z., 2017, Peran Jalur Phosphatydyl-Inositol-3 – Kinase (PI3K) dalam Resistensi Kemoterapi pada Kanker, *Qanun Medika*, 2,1.
- Advani, A.S., dan Lazarus, H.M., 2011, *Adult Acute Lymphocytic Leukemia*, Humana Press, New York.
- Albert, B., Johnson, A., Lewis, J., 2002, *Molecular Biology of The Cell*, Taylor and Francis Group, New York.
- Alkire dan Collingwood, 1990, Physiology Of Blood And Bone Marrow, *Seminars in Oncology Nursing*, 6, 99-108.
- Amarenco,P., Seux, L.M.L., Cohen, A., Levy, C., Touboul, P.J., dan Bousser, M.G., 1994, Carotid Artery Dissection With Renal Infarcts, *Strokes*, 25, 2488 - 2491.
- American society of clinical oncology (ASCO), 2017, <http://cancer.net> Editorial Board, diakses 08 Januari 2018.
- Amsden, J.P., 1999, *Physical Chemistry for Premedical Students (second edition)*, NewMcGraw-Hill Book Company, New York.
- Anonim, 2007, *UV VIS Spectrophotometer 1800*,<https://www.ssi.shimadzu.com/sites/ssi.shimadzu.com/files/Products/literature/Spectroscopy/c101e109H.pdf>, diakses 30 Agustus 2018.
- Arakawa, Kobayashi-yurugi, T., Alquel, Y., Inawari, H., Hatae, H., Iwata, M., Abe, Y., Hino, T., Ikeda-suno, C., kuma, H., Kang, D., Murata, T., Hamakudo, T., Cameron, A.D., Kobayashi, T., Hamasaki, N. Dan Iwata, S., 2015, Crystal Structure of Anion Exchanger of Human Erythrocyte Band 3, *Science*, 350, 680-684.
- Arico, M., Valsecchi, M.G., dan Camitta, B., 2000, Outcome of Treatment In Childrenw ith Philadelphia Chromosome Positive Acute Lymphoblastic Leukemia, *New England Journal of Medicine*, 342, 998-1006.
- Arthurs, G.J., dan Sudhakar, M., 2005, Cabondioxide Transport, *Continuing Education in Anaesthesia Critical Care & Pain*, 5, 207-210.
- Bain, B.J., 2004, *A Beginner's Guide to Blood Cells*, Third edition, Backwell publishing, London.
- Bakta, I.M., 2006, *Hematologi Klinik Ringkas*, EGC, Jakarta.



Ballas, S.K. dan Krasnow, S.T., 1980, Structure of Erythrocyte Membrane and Its Transport Function, *Annals of Clinical and Laboratory Science*, 10, 209-219.

Barshtein, G., Wajnblum, D., Yedgar, S., 2000, Kinetics of Linier Rouleaux Formation Studied by Visual Monitoring of Red Cell Dynamics Organization, *Biophys Journal*, 78, 2470-2474.

Baskurt, O.K dan Maiselman, H.J., 2009, Red Blood Cell “ Aggregability”, *Clinical Hemorheology and Microcirculation*, 43, 353-354.

Basu, S., Foufoula Gergio, E., 2002, Detection of Nonlinearity and Chaoticity In Time Series Using The Transportation Distance Function, *Physics Letters*, 301, 413 - 423.

Bedeaux, D., Kjelstrup, S. dan Öttinger, H.C., 2014. Nonlinear Couple Equation For Electrochemical Cells as Developed by The General Equation for Nonequilibrium Reversible-Irreversible Coupling, *The Journal of chemicalPhysics*, 141, 1241022.

Behrens, S.H., Cristl, D.I., Emmerzael, R., Schurtenberger, dan Borkovec, M., 2000, Charging And Aggregation Properties Of Carboxyl Latex Particles : Experiments Versus DLVO Theory, *Langmuir*, 16, 2566-2575.

Bersuker, I. B., 2010, *Electronic Structure And Properties Of Transition MetalCompound*, edisi 2, A John Wiley and Sons, Inc., Canada.

Besa, E. C., Catalano, P. M., Kant, J. A., and Jefferies, L. C, 1992, *Hematology*, PA : Harwal Publishing Company, Malvern.

Beutler, E., Lichtman, A.M., Coller, S.B, Kipps J.T. dan Seligsohn, U., 2001, *Hematology Sixth ed*, Mc Graw-Hill, Inc, New York.

Bintang, M., 2010, *Biokimia Teknik Penelitian*, Erlangga, Jakarta.

Bohren,C.F dan Huffman, D.R, 1983, *Absorption and Scattering of Light by Small Particle*, John and Son, Inc., New York.

Bonar, P.T., dan Casey, J.R., 2008, Plasma Membran Cl⁻/HCO3⁻ Exchanger : Structure, Mechanism And Physiology, *Channels (Austin)*, 2, 337-345.

Boschen, K., Krasowska, A., Milaniuk, S., Kulczynska, M., Prystupa, A. Dan Dzida, G., 2011, Erythrocyte Sedimentation Rate and Old Marker with New Applications, *Journal of Pre-Clinical and Clinical Research*, 5, 50-55.

Bozzone, D. M., 2009, *Leukemia (Biology of Cancer)*, Chelsea House, New York.

Braoudaki, M., Lambrou, GI., Vougas, K., Karamolegou, K., Tsangaris, GT., Stathopoulou, FT, 2013, Protein Biomarkers Distinguish Between High-and



UNIVERSITAS
GADJAH MADA

Pola Absorbansi Eritrosit dalam Darah-EDTA Pada Penderita Leukemia Limfoblastik Akut (LLA)

Melalui

Kajian Spektroskopi UV-VIS

DENI ARYATI, 1. Dr. Iman Santoso, M.Sc., 2. Dr. Ngadikun, M.Biomed

Universitas Gadjah Mada, 2019 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Low-Risk Pediatric Acute Lymphoblastic Leukemia In A Tissue Specific Manner, *Hematology & Oncology*, 6, 52.

Brewer, G.J, 1974, General Red Cell Metabolism, *Seminar Hematology*, 30, 85-118.

Brown, J.M., 1998, *Molecular Spectroscopy*, Oxford University Press Inc, New York.

Campbell, N.A., Reece, J.B. dan Michell, L.G., 2000, *Biologi*, diterjemahkan oleh Rahayu R., Ellyzar, I.M.A., Nova, A., Andri, Wishnu, E.W. dan Wasmen, M., edisi 5 jilid 1, Penerbit Erlangga, Jakarta.

Celi, L., Presta, M., Ajmore-Marsan, F dan Barberis,E. ,2001, Effect of PH And Electrolyte on Inositol Hexaphosphate Interaction With Goethite, *Soil Science Soc.*, 65, 753-760.

Chiaretti, S., Zini, G., Bassan, R, 2014, Diagnosis and Subclassification of Acute Lymphoblastic Leukemia, *Mediterranean Journal of Hematology and Infectious Diseases*, 1, 6, doi: 10.4084/MJHID.2014.073.

Christian, G.D., 2004, *Analytical chemistry*, edisi 6, John Wiley and Son, Inc, NJ. Conover, W.J., 1999, *Practical Non Parametric Statistics, 3rd edition*, Wiley, New York.

Crandall, E.D., Obaid, A.L dan Foster, R.E., 1977, Bicarbonate-Chloride Exchange in Erythrocyte Suspensions Stopped-Flow Ph electrode Measurement, *Biophys.J.*, 8, 35-42.

D'Hiru, 2015, *Live Blood Analysis*, Gramedia, Jakarta.

Dailey, J.F., 1991, *Dailey's Note on Blood*, MA Medical Consulting Group, Somerville.

Daleke, D.L., 2003, Regulation of Transbilayer Plasma Membrane Phospholipid Asymmetry, *Journal of Lipid Research*, 44.

Daniel, W.W., 1991, *Biostatistics : A Foundation For Analysis In The Health Science Ed. 5*, John Wiley and Sons, Inc, Canada.

Davey, P. , 2005, *Medicine At A Glance*, Alih Bahasa: Rahmalia, Erlangga, Jakarta.

Day, M.C.J.R. dan Selbin, J., 1987, *Kimia Organik Teori*, diterjemahkan oleh Susetyo, W., Gadjah Mada University Press, Yogyakarta.

De Kerchove, A.J. dan Elimelech, M., 2005, Relevance of electrokinetics theory for “soft” particles to bacterial cells : implications for bacterial adhesion, *Lungmuir*, 21, 6462-6472.



Demirel, Y. dan Sandler, S.I., 2002, Thermodynamics and Bioenergetics, *Bioenergetics Chemistry*, 97, 87-111.

Demons, DS., 2002, *An Introduction to Stochastic Process in Physics*, The Johns Hopkins University Press, Maryland, United States of America.

Departemen Kesehatan RI (Depkes), 2001, *Progam Penanggulangan Anemia Gzipada Wanita Usia Subur (WUS): Safe Mother Project*, Direktorat JendralBina Kesehatan Masyarakat Depkes, Jakarta.

Devine, S. M., dan Larson, R. A, 1994, Acute Leukemia In Adults: Recent Developments In Diagnosis And Treatment, *CA Cancer J Clin*, 44, 326–52.

Dillon, Richard., Mwirigi, A., Raj, Kavita., 2017, Acute Leukaemia, *Medicine*, 45, 280-286.

Duprat, C dan Stone, H.A, 2015, *Fluid-Structure Interaction in Low-Reynolds-Number Flow*, <http://pubs.rsc.org/en/content/ebook/978-1-84973-813-2>, diakses 31 Maret 2018.

Elicabe, Guillermo, E. dan Garcia-Rubio, L. H., 1988, The Selection Of The Regularization Parameter In Inverse Problems: Estimation Of Particle Size Distribution From Turbidimetry, *Polymeric Materials Science andEngineering*, 59 , 165-168.

Faber, D.J., Mik, E.G., Aalders, M.C., dan Van Leeuwen, T.G., 2003, Light Absorption Of (Oxy-) Hemoglobin Assessed By Spectroscopic Optical Coherence Tomography, *Optics Letters*, 28, 1436-1438.

Fabry, T.L., 1987, Mechanism of Erythrocyte Aggregation and Sedimentation, *Blood*, 70, 1572-1576.

Faderl, S., Ihntarjian, H.M., Talpaz, M., dan Estrov, Z., 1998, Clinical Significance of Cytogenetic Abnormalities in Adult Acute Lymphoblastic Leukemia, *Blood*, 91,399-4019

Faller, A. dan Schuenke, M., 2004, *The Human Body an Introduction to Structureand Function*, Georg Thieme Verlag, Stuttgart.

Faria, S.S., Morris , C.F., Silva A.R., dan Fonseca, M.P., 2017, A Timely Shift from Shotgun to Targeted Proteomics and How it can be Groundbreaking for Cancer Research, *Frontier in Oncology*, 7, 1-28.

Farrokhyar, F., Reddy, D., Poolman, R.W., Bhandari, M., 2012, Why Perform A Priori Sample Size Calcultion?, *Can J Surg*, 56, 207-213.

Felder, M., Kapur, A., Gonzalez-Bosquet, J., Horibata, J., Albrecht, R., Fass, L., Kaur, J., Hu, K., Shojaei, H., Whelan, R.J. dan Patankar, M.S., 2014, MUC



16 (CA125) : Tumor Biomarker to Cancer Therapy, A Work In Progress,
Molecular Cancer, 13, 129, doi : 10.1186/1476-4598-13-129.

Fernandes, H.P., Cesar. C.L., Castro, M.L.B., 2012, Electrical Properties Of The Red Blood Cell Membrane And Immunohematological Investigation.*Revista Brasileira de Hematologia e Hemoterapia*, 33, 297-301, doi:10.5581/1516-8484.20110080.

Ferrando, A. A., Neuberg, D. S., Staunton, J., 2002, Gene Expression Signatures Define Novel Oncogenic Pathways In T Cell Acute Lymphoblastic Leukemia, *Cancer Cell*, 1, 75–87.

Fijneman, R.J., de Wit, M., Pourghiasian, M., Piersma, S.R., Pham, T.V., Warmoes, M.O., Lavaei, M., Piso, C., Smit, F., Diemen-van, D.P.M., van Turenhout, S.T., Terharr, S.D.J.S., Mulder, C.J.J., Blankestein, M.A., Robanus-Mandaag, E.C., Smits, R., Fodde, R., van Hinsbergh, V.W., Meijer, G.A dan Jimenez, C.R., 2012, Proximal Fluid Proteome Profiling of Mouse Colon Tumors Reveals Biomarkers for Early Diagnosis of Human Colorectal Cancer, *American Association for Cancer Research*, 2613-2624.

Fischbach, F.T., dan Dunning, M.B., 2015, *A manual of laboratory and diagnostic tests, Ninth edition*.ed, Wolter Kluwer Health, Philadelphia.

Flormann, D. A. D., 2017, Physical Characterization of Red Blood Cell Aggregation, *Tesis*, Program Pascasarjana Fisika Biologi, Universitas Grenoble Alpes, Prancis, <https://tel.archives ouvertes.fr/tel01577838/document>, diakses 28 Maret 2018.

Frankfurt, O., Peterson, L., Tallman, M.S, 2011, Acute Lymphocytic Leukemia Clinical Features and Making the Diagnosis, *Contemporary Hematology*, <https://link.springer.com/book/10.1007/978-1-60761-707-5>,diakses 20 Agustus 2018.

Fung, Y.C., 1997, *Biomechanics: Circulation*, edisi 2, Springer, New York.

Galneder, R., Kahl, V., Arbuzova, A., Rebecchi, M., Radler, J.O. dan McLaughlin, S., 2001, Microelectrophoresis Of A Bilayer – Coated Silica Bead In A Optical Trap : Application To Enzymology, *Biophysics Journal*, 80 : 2298-22309.

Garcia-Rubio, L. H., 1992, Refractive Index Effects on The Absorption Spectra of Macromolecules, *Macromolecules*, 25, 2608-13.

Gaspar, D. ,2015, Apoptotic Human Neutrophil Peptide-1 Anti-Tumor Activity Revealed By Cellular Biomechanics: *Biochimica Et Biophysica Acta*, Elsevier, 308–316.



UNIVERSITAS
GADJAH MADA

Pola Absorbansi Eritrosit dalam Darah-EDTA Pada Penderita Leukemia Limfoblastik Akut (LLA)

Melalui

Kajian Spektroskopi UV-VIS

DENI ARYATI, 1. Dr. Iman Santoso, M.Sc., 2. Dr. Ngadikun, M.Biomed

Universitas Gadjah Mada, 2019 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Gautam, P., Suniti, S., Prachi, Amrita, K., Madathil, D., dan Nair, B., 2012, A Review in Recent Advances in Biosensors for Detection of Water Contamination, *International Journal of Science*, 2, 1565-1574.

Glaser, Ronald, 2000, *Biophysics*, Fifth Edition, Springer-Verlag, Berlin.

Goldoni, A., 2002, Porphyrin : Fascinating Molecules with Biological Significance, *ELETTRA Highlights*, 64-65.

Gonzalez-Gaitan, M. dan Roux, A., 2015, When Cell Biology Meets Theory, *Journal Cell Biology*, 201, 1041-1045.

Goodwin, J., 2009, *Colloids and Interfaces with Surfactants and Polymer*, SecondEdition, John Wiley and Sons, Ltd, West Sussex.

Gore, M.G., 2000, *Spectrophotometry and Spectrofluorimetry a Practical Approach*, Oxford University Press Inc., New York.

Griffiths, D.J., 1999, *Introduction to Electrodynamics*, Third Edition, Prentice-Hall, New Jersey.

Grzybowski, A., dan Sak, J.J., 2011, Who Discovered the Erythrocyte Sedimentation Rate?, *Rheumatology*, 38, 1521-1522, doi: 10.3899/jrheum.101213 PMID : 21724729.

Guyton, A.C. dan Hall, J.E., 1997, *Buku Ajar Fisiologi Kedokteran*, Editor Bahasa Indonesia : Irawati Setiawan, Edisi.9, EGC, Jakarta.

Harper, H.A., Rodwell, V.W. dan Mayes, P.A., 1977, *Review of Physiological Chemistry*, Sixteen Edition, Lange Medical Publications, California.

Hauptman, N., dan Glavac, D., 2017, Colorectal Cancer Blood Based Biomarkers, *Gastroenterology Research and Practice*, doi: 10.1155/2017/2195361.

Hayakawa, E.H., Kobayashi, S., Matsuoka,H., 2015, Physicochemical Aspect of the Plasmodium Chabaudi-Infected Erythrocyte, *Biomed Research International*.

Heinrich, V., Ritchie, K., Mohandas, N., dan Evans, E., 2001, Elastic Thickness Compressibility of The Red Blood Cell Membrane, *Biophysics*, 81, 1452-1463.

Herawati, F., Andrajati, R., dan Umar, F., 2011, *Pedoman Interpretasi Data Klinik*, Kementrian Kesehatan Republik Indonesia, Jakarta, https://www.researchgate.net/profile/Fauna_Herawati/publication/303523819_Pedoman_Interpretasi_Data_Klinik/links/5746c1db08ae298602fa0bb4/Pedoman_Interpretasi-Data-Klinik.pdf, diakses 23 Maret 2018.

Hillman dan Finch, 1996, *Red Cell Manual*, 7th Ed, A Davis Co, Philadelphia.



Hollas, J. M., 2004, *Modern Spectroscopy Fourth Edition*, John Wiley & sons Ltd., Wes Sussex.

Holme, D.J dan Peck, H., 1993, *Analytical Biochemistry*, Longman Scientific and Technical, New York.

Housman, G., Byler, S., Heerboth, S., Lapinska, K., Longacre, M., Snyder, N., Sarkar, S., 2014, Drug Resistance in Cancer : an Overview, *Cancer*, 6, 1769-1792.

Howlader, N., Noone, A.M., Krapcho, M., 2013, *SEER Cancer Statistics Review 1975-2010*, National Cancer Institute, Bethesda, Md.

Ibrahim, N., Suci Aprianti, M. Arif, Hardjoeno, 2006, Hasil Tes Laju Endap Darah Cara Manual dan Automatik (The Manual And Automatic Tests Results Of Erythrocyte Sedimentation Rate), *Indonesian Journal of Clinical Pathology and Medical Laboratory*, 12, 45-48.

Jackson, J.H., 1993, Potential Molecular Mechanisms of Oxidant-induced Carcinogenesis, *The Oxygen Radicals and Lung Injury Conference Held*, 30 August-2 September 1993, 155-108.

Jou, J.M., Lewis S.M., Briggs, C, Lee, S.H., De la Salle, B., McFadden, S., dkk., 2011, International Council Standardization in Haematology (ICSH) Review of The Measurement of the Erythrocyte Sedimentation Rate. *International Journal Hematology*, 33, 125-132, doi :10.1111/j/1751-553X.2011.01302.x PMID : 21352508.

Kaushansky, K., Lichtenman, M.A., Prchal, J.T., Levi, M.M., Press, O.W., Burns, L.J. dan Caligiuri, M.A., 2016, *Williams Hematology Ninth Edition*, McGraw-Hill Education, New York.

Korol AM, Foresto P, Darrigo M, Rosso OA., 2008, Diabetic Erythrocytes Test By Correlation Coefficient, *Open Med Inform J*, 2, 105–115.

Korol, A.M., Arrigo, M.D., Foresto, P., Perez, S., Martin, M.T., Rosso, O.A., 2010, Preliminary Characterization of Erythrocytes Deformability on Entropy Complexity Plane, *Open Med Inform J*, 4, 164–170, doi: 10.2174/1874431101004010164.

Kristianingrum, S., 2015, Handout Spektroskopi Ultraviolet dan Sinar Tampak (Spektroskopi UV VIS), terdapat pada <http://staff.uny.ac.id/sites/default/>, diakses 3 April 2018.

Kulshreshtha, A.K, Singh, O.N, Wall G.M., 2010, *Pharmaceutical Suspensions from Formulation Development to Manufacturing*, Springer Science+Business Media, New York.



Landgraf, L., Christner, C., Storck W., 2015, A Plasma Protein Corona Enhances The Biocompatibility Of Au, Fe₃O₄ Janus Particles, *Biomaterials*, 68, 77-88.

Launder, T.M., 2002, *Introduction to Leukemia and The Acute Leukemias*, in Harmening,eds., FA. Davis Company, Philadelphia.

Li, A., Zhang, T., Zheng, M., Liu, Y., dan Chen, Z, 2017, Exosomal proteins as a potential markers of tumor diagnosis, *Hematology and Oncology*, 10 (175), 1-9. Lichtman, M., Beutler, E., Thomas, J.K., 2010, *Williams Hematology*, McGraw-Hill Medical, New York.

Liu, P., Zhu, Z., Zeng, C., dan Nie, G., 2012, Specific Absorption Spectra Of Hemoglobin At Different PO₂ Levels: Potential Noninvasive Method To Detect PO₂ In Tissues, *Biomedical Optic*, 17, 125002, doi: 10.1117/1.JBO.17.12.125002.

Lockwood, W, 2015, Leukemia: AML, CML, ALL and CLL, Terdapat pada www.rn.org. Reviewed, diakses pada 12 Maret 2018.

Lodish, H., Arnold B., Lawrence, Z., Paul, M., David B., dan James, D., 2003, *Molecular Cell Biology*(4th edition), W. H. Freeman, New York.

Losev, E.S., 1992, A Physical Model of Gravitational Erythrocyte Sedimentation, *Biophysics*, 37, 1057-1062.

Loudon, G.M., 2002, Organic Chemistry Fourth Edition, Oxford University Press, Inc., New York.

Lucatorto, T., Zwinkels, J.C., Tsai, B.K., 2014, *Spectrophotometry: Accurate Measurement of Optical Properties of Materials*, Academic Press, Amsterdam, Netherland.

Lucia, U., Grazzini, G., Montruccchio, B., Grisolia, G., Borchellini, Gervino, G, Castagnoli, C., Ponzetto, A., Silvagno, F., 2015, *Constructal Thermodynamics Combined with Infrared Experiment to Evaluated Temperature Differences in Cells*, Terdapat pada <http://www.nature.com/articles/srep11587>, diakses 20 Januari 2018.

Lucia, U., Ponzetto, A., dan Deisboek, T.S, 2014, *A Thermo-physical Analysis ofthe Proton Pump Vacuolar-ATPase : The Constructal Approach*, <http://www.nature.com/articles/srep06763>, diakses 21 januari 2018.

Mäbert, K., Cojoc, M., Peitzsch, C., Kurth, I., Souchelytskyi, S., dan Dubrovska, A, 2014, Cancer biomarker discovery: current status and future perspectives, *International Journal of Radiology Biology*, 90, 659-677.

Mager, M.D., LaPointe, V., Stevens, M.M., 2011, Exploring and Eploiting chemistry at the surface, *Nature Chemistry*, 3, 582-589.



Maiselman, H.J., Neu, B., Rampling, M.W. dan Baskurt, O.K., 2007, RBC Aggregation : Laboratory Data and Model, *Indian Journal of Experimental Biologi*, 45, 9-17.

Makarska, M., dan Radzki, S., 2002, Water-Soluble Porphyrins and Their Metal Complexes, *Chemistry Information*, 35, 24, Doi 10.1002/chin.200424269.

Malvern Instrument, 2012, *Zeta Potential an Introduction in 30 Minutes*, Enigma Business Park, Worcestershire, UK.

Marczenko, Z. dan Balcerzak, M, 2000, *Separation, Preconcentration, and Spectrophotometry in Inorganic Analysis*, Elsevier Science B.V., Amsterdam.

Mark, D.B, Mark, A.D dan Smith, C.M., 2000, Biokimia *Kedokteran Dasar Sebuah Pendekatan Klinis*, Diterjemahkan oleh Pedit, B.U., EGC, Jakarta

Marquette, C. dan Nabell, L., 2012, Chemotherapy-Resistant Metastatic Breast Cancer, *Current Treatment Options in Oncology*, 12, 263-275.

Martini, F.H., Nath, J.L., Bartholomew, E.F., 2013, *Fundamentals of Anatomy and Physiology*, Edisi 10, Pearson, New York.

McDonald, G. T., 2008, Inhibition Phosphatidyl-Inositol-3-Kinase (PI3K) Signalling Leads to Resistance to Chemotherapeutic Agents in Human Cancer Cells, *Tesis*, Departement of Anatomy and Cell Biology, Queen's University.

MCKenzie, S.B., 1996, *Textbook of Hematology*, William dan Wilkins, Baltimore, MD.

Means, Jr., dan Glader, B., 2009, *Anemia : General Consideration in Green Peditor*, Lippincott Williams and Wilkins, Philadelphia.

Mohandas, N. dan Gallagher, P.G., 2008, Red Cell Membrane : Past, Present, and Future, *Blood*, 112, 3939-3948.

Muller, L.K, Simon, J., Schottler, S., 2016, Pre-coating with protein fractions inhibits nano- carrier aggregation in human blood plasma, *RSC Adv.*, 6, 96495 – 96509.

Munson, B.R., Young, D.F. dan Okiishi, T.H., 2004, *Mekanika Fluida*, Erlangga, Jakarta.

Murray, D., Arbuzova, A., Hangyas-Mihalyne, G., Gambhir, A., Ben-Tal, N., Honig, B., 1999, Electrostatic properties of membranes containing acidic lipids and absorbed basic peptides : theory and experiment, *Biophysics Journal*, 77, 3176 - 3178.



Murray, R.K., Granner, D.K., Mayes, P.A. dan Rodwell, V.W., 2003, *Harper's Illustrated Biochemistry, Twenty-Sixth Edition*, McGraw-Hill Companies, Inc, New York.

Mwirigi, A., Dillon, Richard., Raj, Kavita., 2017, Acute Leukaemia, *Medicine*, 45, 280 - 286.

Nakouzi, A., Valadon, P., Nosanchuk, J., Green, N., Casadevall, A., 2001, Molecular Basis For Immunoglobulin Specificity To Epitopes In Cryptococcus Neformans Polysaccharide That Elicit Protective And Nonprotective Antibodies, *Infect Immun*, 69, 3398 - 3409.

Nathan, D.G., dan Orkin, S.H., 1998, *Hematology of Infancy and Childhood*, W.B. Saunders Company, United State of America.

Nelson, D.L. dan Cox, M., 2008, *Principle of Biochemistry, Fifth Edition*, W.H Freeman and Company, New York.

Ngadikun, 2006, Gambaran Pola Potensial Zeta Sel Darah dengan Metode Spektrofotometri pada Pasien Karsinoma Hepatoseluler dan Tikus (*Rattus norvegicus*), *Disertasi*, Fakultas Kedokteran, Universitas Padjajaran.

Nidzworski, D., Pranszke, P., Grudniewska, M., dan Krol, E., 2014, Universal Biosensor for Detection of Influenza Virus, *Biosensor and Bioelectronics*, 59, 239-242.

Nielsen, S.S., 2017, *Food Analysis Fifth Edition*, Springer, USA.

Nocera, D.G., 2011, *Lecture Inorganic Chemistry*, http://web.mit.edu/5.03/www/notes/dgn_oxygen.pdf, diakses 20 September 2018.

Nonoyama, A., 2004, Using Multiwavelengt UV-Vis Spectroscopy for the Characterizatiom of Red Blood Cell: An Investigation of Hypochromish. *Disertasi*, Departemen Kimia, University of South Florida, <http://scholarcommons.usf.edu/cgi/viewcontent.cgi?article=2178&context=etd>, diakses 28 Maret 2018.

Normatov, T.D. dan Khusanov, I.N., 2001, Determination of Constraint Coeffisiens of Particle, *Nauka*, 5, 35-38.

Nowell, P.C, 2007, Discovery of the Philadelphia Chromosome : A Personal Perspective, *Clinical Investigation*, 117, 2033-2035.

Nugroho, K. A., Abraha, K., Ngadikun, 2017, The Mechanism Of Erytrocyte Aggregation In EDTA-Blood Of Ovarian Cancer Patients Viewed By Coulomb Law, *Advanced Science Engineering Information Technology*, 7, 6.



Nutan, M.T.H. dan Reddy, I.K., 2010, *Pharmaceutical Suspensions from Formulation Development to Manufacturing*, Springer Science + Bussiness Media, New York.

Oehadian, A., 2012, Pendekatan Klinis dan Diagnosis Anemia, *Continuing Medical Education*, 39, 6.

Oldshaker, J.S. dan Jerrard, D.A., 1997, The Erythrocyte Sedimentation Rate, *The Journal of Emergency Medicine*, 15, 869-874.

Owen, T., 2000, *Fundamentals of Modern UV-Visible Spectroscopy*, Germany, Agilent Technologies

Oxtoby, D.W., Gillis, H.P., Campion, A., Helal, H.H., Gaither, K.P., 2012, *Principles of Modern Chemistry, Seventh Edition*, Brooks/Cole Cengage Learning, United States of America.

Pack, P.E., 2010, *Cliffs Quick Review Anatomy and Physiology*, Hungry Minds, New York.

Peng, L., Nice, E.C., Cantor, D., Huang, C., Wang, K., dan Baker, M.S., 2018. Tissue and Plasma Proteomic for early stage cancer detection, *Mol. Omics*, DOI: 10.1039/C8MO00126J.

Pennel, R.B, 1974, *The Red Blood Cell*, Second Edition, Academic Press, New York.

Peters, T. dan Gros, G., 1998, *Transport of Bicarbonate, Other Ions and Substrates Across The Red Blood Cell Membrane of Hagfishes*, Chapman and Hall, London.

Pocock, G. dan Ricards, C.D, 2006, *Human Physiology: The Basis of Medicine Third Edition*, Oxford University Press, London.

Pollack, W. dan Reckel, R.F., 1977, A reappraisal of the forces involved in hemagglutination, *int arch Alleegy Appl Immunol*, 54, 29-42.

Popovic, M., 2014, Entropy Exchange of Open Thermodynamics System in Self-Organising Procces, *Thermal Science*, 18, 1425-1432.

Previte, J.J., 1983, *Human Physiology*, McGraw-Hill, Inc., New York.

Prince , J.L. daan Dickinson, R.B., 2003, *Kinetics And Forces Of Adhesion ForPair Of Capsular/ Uncapsulated Staphylococcus Mutant Strains*, langmuir,19, 154-159.

Prokai, L., Nguyen,V., Jasti, B.R., Ghosh,T.K., 2005, *Principle and Applications of Surface Phenomena*, CRC Press, Baca Raton.



Rathore,S dan Ali, B., 2014, Effect The Laser Radiation on Electrical Conductivity of Human, *Internasional Journal of Science, Environment and Technology*, 3, 286-290.

Reinhart, W. H., Singh, A., Straub, P.W., 1989, Red Blood Cell Aggregation and Sedimentation : The Roll of The Cell Shape, *British Journal of Haematology*, 73, 551-556.

Richardson, J.F. dan Zaki, W.N., 1954, Sedimentation and Fludization, Part 1, *Trans Ins Chem Engs*, 32, 32-35.

Riemann, D., Kehlen, A., & Langner, J. , 1999, CD13-Not Just A Marker In Leukemia Typing, *Immunology Today*, 20, 83–88.

Rierger, P.H., 1994, *Electrochemistry second edition*, Chapman&Hall, Inc., New York.

Riset Kesehatan Dasar (Risikesdas), 2013, *Badan penelitian dan pengembangan kesehatan kementerian RI tahun 2014*, Terdapat pada <http://www.depkes.go.id/resources/download/general/Hasil%20Risikesdas%202013.pdf>, Diakses 8 Februari 2018.

Robles, F.E., 2010, Chowdhury,S., dan Wax, A., 2010, Assessing Hemoglobin Concentration Using Spectroscopic Optical Coherence Tomography for Feasibility of Tissue Diagnostics,*Biomedical Optics Express*, 1, 301-317.

Roboz, J., dan Roboz, G.J, 2015, Mass Spectrometry In Leukemia Research And Treatment, *Expert Rev Hematology*, 8, 1-11.

Rogers, K., 2011, *The Human Body Blood Physiology and Circulation*, Britannica Educational Publishing, New York.

Rouzine, M., Rodrigo, A., dan Coffin, M., 2001, Transition Between Stochastic Evolution and Deterministik Evolution In Presence Of Selection : General Theory and Application to Virology, *Microbiology Molecular*, 65, 151-185.

Sabbah, M., Esposito, M., Pierro, P.D, Giosafatto, C.V.L., Marinello,L., Porta, R., 2016, Insight Into Zeta Potential Measurement In Biopolymer Film Preparation, *Biotechnology Biomaterial*, 6, 2.

Sader, B.H, Sorensen, C.D., 2003, Deterministic and Stochastic Dynamic Modelling of Continuous Manufacturing Using Analogies To Electrical System, *Proceedings of The 2003 Winter Simulation Conference*, 1-9.

Saks, V., Monge, C., Anmann, T., Dzeja, P., 2007, *Molecular System Bioenergetics Energy for Life*, edited by V.Saks, Weinheim, Wiley-VCH Verlag GmbH &Co.KgaA, Germany.



Salgin, S., 2012, Zeta potential and isoelectrics points of biomolecules : The effects of ions types and ions strengths, *International Journal Electrochemistry*, 7, 12404-12414.

Salgin, S., Salgin,U., Soyer,N., 2013, Streaming Potential Measurements Of Polyethersulfone Ultrafiltration Membran To Determine Salt Effect On Memban Zeta Potential, *Electrochemical Science*, 8, 4073-4084.

Saputra, A.S., dan Sanjaya, I.G.M., 2014, Kajian Teoritis Untuk Menentukan Cela Energi Kompleks 8-Hidroksiquinolin Terkonjugasi Logam Besi Dengan Menggunakan Teori Kerapatan Fungsional (DFT), *Journal of Chemistry*, 3, 2.

Sastromihardjojo, 2001, *Spectroscopy UV-Vis*, UGM Press, Yogyakarta.

Schenkman, K.A, Marble, D.R., Bruns, D.H., dan Feigl, E. O., 1997, Myoglobin Oxygen Dissociation By Multiwavelength Spectroscopy, *Applied Physiology*, 82, 86-92.

Schonlau, M., 2002, The Clustergram : A Graph for Visualizing Hierarchical and Non Hierarchical Cluster Analysis, *The Stata*, 3, 316-327.

Singer, S.J., dan Nicolson, G.L., 1972, Fluid Mosaic Model Of Structure Of Cell Membranes, *Science*, 4023, 720-731.

Sippel, K.H. dan Quiocho, F.A, 2015, Ion-Dipole Interaction And Their Functions In Protein, *Protein science*, 24, 1040-1046.

Sitaesmi, M.N., Mostert, S., Gundy, C.M., Sutaryo, Veeman, A.J.P., 2008, Health-related quality of life assessment in Indonesia Childhood Acute Lymphoblastic Leukemia, *Health and Quality of Life Outcome*, 6,96.

Smith, J.E., 1987, Erythrocyte Membrane : Structure, Function and Pathophysiology, *Vet. Pathol*, 24, 471-476.

Soni, G., dan Yadav, K.S., 2014, Application of Nanoparticle In Treatment and Diagnosis of Leukemia, *Material Science and Engineering*, 47, 156-164.

Start oncology in Europe, Terdpat pada *Adult acute lymphoblastic leukaemia, Pathology and Biology*, 2004, <http://www.startoncology.net>, Diakses 20 Maret 2018.

Strahler, JR., Kuick, R., Eckerskom, C., Lottspeich, F., Richardson, BC., Fox, DA., 1990, Identification Of Two Related Markers For Common Acute Lymphoblastic Leukemia as Heat Shock Proteins, *Clinical Investigation*, 85, 200-207.



Strayer, L., 1995, *Biokimia*, diterjemahkan oleh Sadikin, M., penerbit: EGC, Jakarta.

Sudiana, I.K., 2011, *Patobiologi Molekuler Kanker*, Salemba Empat, Jakarta

Sugiyono, 2007, *Metode Penelitian Pendekatan Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R & D*, Alfabeta, Bandung.

Sukrat, B., dan Sirichotiyakul, 2006, The Prevalence and Causes of Anemia during Pregnancy in Maharaj Nakorn Chiang Mai Hospital, *Medical Association of Thailand*, 89 ,142-146.

Supriyadi, E., Widjajanto, P.H., Purwanto,I., 2011, Incidence of Childhood Leukemia ini Yogyakarta, Indonesia 1998-2009, *Pediatric and Cancer*, 57, 588-593.

Temenoff, J.S. dan Mikos, A.G., 2008, *Biomaterial the Intersection of Biology and Material Science*, Pearson Education, Inc., New Jersey.

The McGill Physiology Virtual Lab, 2012, *Erythrocyte Sedimentation Rate (ESR)*. Terdapat pada <http://www.medmedicine.Mcgill.ca./physio/vlab/bloodlab/ESR.htm>. Diakses 20 Juli 2018.

Tinoco, I.J., Sauer, K. Dan Wang, J.C., 1995, *Physical Chemistry : Principles and Applications in Biological Science*, Englewood Cliffs, New Jersey.

Tripette, J., Denault, A.Y., Allard, L., Chayer, B., Perrault, L.P., Cloutier, G, 2013, Ultrasound Monitoring of RBC Aggregation as a Real-Time Marker of The Inflammatory Responses in a Cardiopulmonary Bypass Swine Model, *Critical Care Med*, 41, 171178, Doi :10.1097/CCM.0b013e31828a2354.

Tuchin, V.V., 2015, Tissue optics and Photonics : Light-Tissue Interaction, *Biomedical Photonic and Engineering*, 1, 2.

Uskokovic,V., Odsinada, R., Djorddjovic,S., Habelits,S., 2011, Dynamic Light Scattering and Zeta Potential of Colloidal Mixture of Amelogenin and Hydroxyapatite in Calcium and Phosphate Rich Ionic Milieus, *Arch Oral Biology*, 56, 6.

Velasco, J., Bengoechea, J.A.,Brandenburg, K., Lindner, B., Seydel, U., Gonzales, D., 2000, Brucela Abortus And Its Closest Phylogenetic Relative, *Ochrobractrum Spp.* Differ In Outer Membrane Permeability And Cationic Peptide Resistance, *Infect Immum*, 68, 3208-3210.

Venkatachalam, R.V., Venkatesan, R., Tryggvason, G. Dan Fogler, H.S., 2000, Low Reynold Number Interactions Between Colloidal Particles Near The Entrance To A Cylindrical Porce, *J.Colloid Interface Science*, 229, 311-322.



Vo-Dinh dan Cullum, 2000, Biosensor And Biochips ; Advances In Biological And Medical Diagnostics, *Frenesius Journal Analytical Chemistry*, 366, 6-7

Wainwright M, 2009, *Photosensitizers in Biomedicines*, John Willey & Sons Ltd, Liverpool, UK.

Walker, J.S., 2010, *Physics Fourth Edition*, Person Addison-Wesley, San Francisco.

Walter, J., 2010, *Acute Lymphoblastic Leukemia*, Leukemia and Lymphoma Society, USA.

Webster, J.G., 2004, *Bioinstrumentation*, John Wiley & Sons, Inc., New York.

Wei, W. S., 2006, *Time Series Analysis, Univariate and Multivariate Method*, edisi 2, Pearson Education, New York.

Weinstein,R.S, 1974, *The morphology of adult red cells*, Editor *The Red Blood Cell* 2, Edisi 2, Academic Press, Amerika.

Weiss, G., dan Goodnough, T., 2005, Anemia of Chronic Disease, *Medicine*, 10, 1011-1023.

Wingerd, B., 2014, *The Human Body: Concepts of Anatomy and Physiology*, Lippincott Williams and Wilkins, Philadelphia .

Wong, J., Arbuzova, A., Hangyas-Mihalyne, G. Dan McLaughlin, S., 2001, The Effector Domain Of Myristoylated Alanine-Rich C Kinase Substrate Binds Strongly To Phosphatidylinositol 4,5-Biphosphate, *J Biol Chem*, 276, 5009-5012.

World Health Organization, 2016, *International Childhood Cancer Day: Much Remains to be Done to Fight Chilhood Cancer*. Terdapat pada https://www.iarc.fr/en/media-centre/pr/2016/pdfs/pr241_E.pdf, Diakses 6 Februari 2018.

Yamaguchi, T., Ikeda, Y., Abe, Y., Kuma, H., Kang, D., dan Hamasaki, N., 2010, Structure of Membrane Domain of Human Erythrocyte Anion Exchanger 1 Revealed by Electron Crystallography, *Journal of Molecular Biology*, 397, 179-189.

Yang, C-F., Liu, J., Wasser, S., Shen, M-H, Tan, CE-L dan Ong, CN., 2000, Inhibition of Abselen on Aflatoxin B₁-induced Hepatocarcinogenesis in Fischer 344 Rats, *Carcinogenesis*, 21, 2237-2243.

Yawata, Y., 2003, *Cell Membrane: The Red Blood Cell as a model*, Wiley-VCH Verlag GmbH & Co.KgaA, Weinheim.



UNIVERSITAS
GADJAH MADA

Pola Absorbansi Eritrosit dalam Darah-EDTA Pada Penderita Leukemia Limfoblastik Akut (LLA)

Melalui

Kajian Spektroskopi UV-VIS

DENI ARYATI, 1. Dr. Iman Santoso, M.Sc., 2. Dr. Ngadikun, M.Biomed

Universitas Gadjah Mada, 2019 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Young, H. D., dan Freedman, R.A., 2002, *Fisika Universitas Jilid I*, Erlangga, Jakarta.

Zang, J., Johnson, P.C. dan Popel, A.S., 2007, Red Blood Cell Aggregation and Dissociation in Share Flows Simulated by Lattice Boltzmann Method, *Journal of Biomechanics*, 1,1-9.

Zhang, B., Barekat, Z., Kohler, C., Radpour, R., Asadollahi, R., Holzgreve, W., dan Zhong, X.Y., 2010, Proteomics and Biomarkers for Ovarian Cancer Diagnosis, *Annals of Clinical and Laboratory Science*, 40, 218-225.

Zhbanov, A., dan Yang, S., 2015, Effect of aggregation on blood sedimentation and conductivity, *Plos One*, 10, DOI : 10.1371/journal.pone.0129337.

Zijistra, W.G., Buursma, A., dan Meeuwesen-van der Roest, W.P., 1991, Absorption Spectra of Human Fetal and Adult Oxyhemoglobin, Deoxyhemoglobin, Carboxyhemoglobin, and Methemoglobin, *Clinical chemistry*, 37, 1633-1636.

Zwaveling, A., Zonneveld, R.J.V., dan Schaberg, A., 1985, *Onkologi (Terjemahan)*, Edisi ke-2, Balai Pustaka, Jakarta.

Zwierzina, H., 2008, Biomarkers in drug development, *Annals of Oncology*, 19, 3.