

## DAFTAR PUSTAKA

1. Sylvia Y, Muliawan, Bakteri Intraselular Obligat, Jakarta. Erlangga 2009, h :34-8
2. Karsinah, Lucky HM, Suharto, Mardiasuti, Batang Gram Negatif. Jakarata.Binarupa Aksara,1994, h:168-73
3. Arjatmo Tjokronegoro, Ilmu Penyakit Dalam,jilid 1 edisi 3, Jakarta, FKUI 1996,h:435-42
4. Pantas FM. Pengaruh Pemberian Seduhan Teh Hitam (*Camellia sinensis*) Dosis Bertingkat terhadap Aktivitas Fagositosis Makrofag Mencit Balb/C yang Diinokulasi *Salmonella typhimurium*. Tesis Magister Ilmu Biomedik Universitas Diponegoro, Semarang 2009.
5. Suharni. Pengaruh Jus Lidah Buaya (*Aloe vera*) terhadap Kemampuan Fagositosis Makrofag dan Produksi *Nitrit Oxide* pada Mencit BALB/c yang Diinfeksi *Salmonella typhimurrium*. Tesis Magister Ilmu Biomedik Universita Diponegoro, Semarang 2003.
6. Badan Pengawas Obat dan Makanan, Ekstrak Tumbuhan Obat Indonesia,volume 1,2004 h :80-3
7. Nia Kurniawati, Sehat dan cantik alami berkat khasiat bumbu dapur,Bandung,Qanita, Cet.1,2010 h:89-92
8. Harmita, maksum Radji, Analisis hayati, edisi 3, Jakarta,EGC,2008,h:63-7
9. Rita Noveriza dan Miftakhurohmah,” Efektivitas Ekstrak Metanol Daun Salam dan Daun Jeruk Purut sebagai antijamur pada pertumbuhan Fusarium Oxysporum,” J. Littri 2010,16(1):6 – 11
10. Wiryawan, Luvianti, Hermana, Suharti ,” Peningkatan Performa ayam broiler dengan suplementasi daun salam sebagai antibakteri escherichia coli,” media peternakan 2007 ; 30(1):55 - 62
11. Abbas AK, Lichtman AH, Pober JS, Cellular dan Moleculer Immunology 3<sup>rd</sup> ed Philadelphia,Wb Sauders Co,1997,p : 326-81
12. Baratawidjaya KG, Rengganis I, Imunologi Dasar, edisi 8, Fakultas Kedokteran Universitas Indonesia,2009 h:57-93
13. Parslow TG. The Immune Respon in Medical Immunology. 9<sup>th</sup>ed. New Jerse : Prentice Hall,1997 p:63-72
14. Pudjonarko D, Pengaruh Pemberian Diet Minyak Ikan dan Upaya Penggunaan BCG terhadap Aktivitas Makrofag Mencit Tua Balb/C, Tesis Magister Ilmu Biomedik Universitas Diponegoro,Semarang,2001

15. Susilowati H dkk. Produksi NO dan aktivitas fagositosis makrofag mencit setelah stimulasi dengan lipopolisakarida, *Majalah Kedokteran Universitas Gadjah Mada*, 2009(2) h:92-8
16. Murwani H, Pengaruh pemberian teh rosela terhadap fungsi makrofag mencit Balb/C, Tesis Magister Ilmu Biomedik Universitas Diponegoro, Semarang, 2010
17. Sukmaningtyas H, Pengaruh pemberian L- arginin terhadap respon imunitas seluler mencit Balb/C yang diinokulasi *Salmonella Typhimurium*, Tesis Magister Ilmu Biomedik, Universitas Diponegoro, Semarang, 2003.
18. Pramono D, Pengaruh Pemberian Fraksi Polar Rimpang Temu Putih terhadap Respon Imun Seluler pada mencit Balb/c yang diinfeksi *Salmonella typhimurium* Tesis Magister Ilmu Biomedik Universitas Diponegoro, Semarang, 2007
19. Wardani H.E, Pengaruh pemberian diet dengan berbagai kandungan seng terhadap Respon Imun Seluler pada mencit balb/c yang diinfeksi *Salmonella typhimurium*, Tesis Magister Ilmu Biomedik Universitas Diponegoro, Semarang, 2005
20. Wei-fenglo, Helena ong, Eleanor S.Metcalf and Mark J.Soloski, T cell responses to gram – intracellular bacterial pathogens : A role for CD 8 T cells in immunity to S. *Infection and the involvement of MHC class 1b molecules* 1,2. *J. Immunol* 2010;162: 5398-406
21. Rajesh Ravindran, Joseph Foley, Thomas Stoklasek, Laurie H. Glimcher, and Stephen J. McSorley<sup>2</sup>, Expression of T-bet by CD4 T Cells Is Essential for Resistance to *Salmonella* Infection. *J.Immunol* 2009;174:4603–10
22. Martahadinan, Efek pemberian vitamin c intravena terhadap kadar nitric oxid pada mencit balb/c yang terpapar LPS intraperitoneal, Tesis Magister Ilmu Biomedik Universitas Diponegoro, Semarang, 2010
23. Prasetyo,” Pengaruh Ketamin Intravena terhadap kadar Nitric Oxide Makrofag Mencit Balb/c yang diberi Lipopolisakarida,” Tesis Magister Ilmu Biomedik, Universitas Diponegoro, Semarang, 2009
24. Torres AV, Carson JJ, Mastroeni P, Ischiropoulos H, Fang FC. Antimicrobial Action of the NADPH Phagocyte Oxidase and Inducible Nitric Oxide Synthase in Experimental Salmonellosis Effect on Microbial Killing by Activated Peritoneal Macrophages in vitro. *J.Exp Med* 2000;192(2):227-36
25. Jin-Sang Kil, Young Son, Hee Jong Jeong, Ji-Wong Kwon, Tae-Ohkwan, HunTaeng Chung, Oleanin achalcone found in the genus *bidens* and 3-penten-2-one inhibit inducible nitric oxide synthase expression via heme oxygenase-1 induction in RAW 264 macrophages activated with LPS, 2012.5(1) p:53-8
26. Yannick Labreuche, Jeanne Moal, Jean-François Samain, In vitro modulation of reactive oxygen and nitrogen intermediate (ROI/RNI) production in *Crassostrea gigas* hemocytes, *J. Biol.Sci.*2011;7(9):1401-11

27. Haanwinckel, Maria Cristina Santos, Oliveira, Silvio Luis de1, Production of reactive oxygen (H<sub>2</sub>O<sub>2</sub>) and nitrogen (NO) Intermediates and TNF- $\alpha$  in mice genetically selected for high and low antibody response and experimentally infected with leptospira serovar pomona, *J. Micro* 2011;42:729 – 39
28. Alderton WK, Nitric Oxide synthase : structure, function and inhibition, England. 2001, p : 593-615
29. Garrel C, Fontecave M. Nitric Oxide : Chemistry and Biology. Switzerland : Birkhauser Verlag Basel 1995:22-8
30. Dash P. Nitric Oxide. Basic Medical Sciences, St. George`s, University of London [http : // www.sgul.ac.uk/dept/immunology/](http://www.sgul.ac.uk/dept/immunology/) dash di unduh 25 januari 2011
31. Seung-Joo Lee, Hope O`Donnell and Stephen J.Mcsorley, Programmed cell death legan 1 is required for the development of multifunctional th1 cell and immunity to primary but not secondary Salmonella infection, *J.Immunol*,2010 (185) p:2442-9
32. Erikson S, Bjorkman J, Petterson S, anderson DI, Rhen M, Salmonella typhimurium mutants that downregulate phagocyte NO production. *Cell microbial* 2000;2(3):139-50
33. Krause KH. Profesional Phagocytes : Predator and Prey of Microorganisme. *Scweiz Med Wochenschr* 2000;130:93-100
34. Reis DS, Souza MA, Mineo JR, EspindolaFS. Myosin and iNOS expression in enhanced in murine macrophages treated with IFN- $\gamma$ , *J. Research* 2001 ; 34(2) : 221-6
35. Kauter M, Eksperimen studies on pathogenesis of salmonella infection. Thesis. Katholike University Nijmegen,1998
36. Demuth DR and Lamort Richard. Bacterial cell to cell communication in virulence and pathogenesis, America : cambridge Universitas Press,2006
37. MacFarlane AS, Schwacha MG, Eisenstein TK. In vivo blokage of nitric oxide with aminoquanidine inhibits immunosuppression induced by an attenuated strain Salmonella typhimurium, potentiates Salmonella infection, and inhibits macrophage and polymorphonuclear leukocyte influx into the spleen. *Infect Immun* 1999;67:891-8
38. Mastroeni P, Clare S, khan S, Harrison JA, et al. Interleukin – 18 contributes to host resistance and gamma interferon production in mice infected with virulent Salmonella typhimurium. *Infect Immun* 1999:478-83
39. Schwacha MG, Meissler JJ Jr, Eisentein TK. Salmonella typhimurium infection in mice induces nitric oxide-mediated immunosuppression through a natural killer cell- dependent pathway. *Infect Immun* 1998;66(12):5862-6

40. Oca MM, Torres SH, Sanctic D, Mata A, Hernandez N, Talamo C. Skeletal Muscle inflammation and nitric oxide in patients with COPD. *J.Eur Respir* 2005;26:390-7
41. John E. Coligan, Ada M. Kruisbeek, David H. Margulies, Ethan M. Shevach, Warren Stober. *Current Protocols in Immunology* vol 2, editor Richard Coico, City University of New York Medical School 2001;14
42. Erikson S, Bjorkman J, Borg S, Syk A, Petterson S, Anderson DI, Rhen M. *Salmonella typhimurium mutants that downregulate phagocyte NO production*. *Cell Microbiol* 2000;2(3):139-50
43. Bobby J, Beth AC, McCormick, Bosley J. *Salmonella enterica* serovar typhimurium-dependent regulation of inducible NO synthase expression in macrophages by invasion SipB, SipC, SipD and effector SopE2. *Infection and Immunity* 2000;68:55567-74
44. Dherer D, Kok M, Obregon C, et.al. *Salmonella* virulence factor SipB induces activation and release of IL-18 in human dendritic cells. *J.Leukocyte Bio* 2002;72:743-51
45. Marcus SL, Knodler LA, Finlay BB. *Salmonella enterica* serovar typhimurium effector SipD/ SopB in membrane-associated and ubiquitinated inside host cells. *Cell Mikrobiol* 2002;4(7):436-46
46. Schwacha MG, Meissler JJ Jr, Eissentein TK. *Salmonella typhimurium* infection in mice induces nitric oxide-mediated immunosuppression through a natural killer cell-dependent pathway. *Infect Immun* 1998;66(12):5862 – 6
47. Liq, Cherayil BJ, Role of toll – like receptor 4 in macrophage activation and tolerance during *Salmonella enterica* serovar typhimurium infection, *Infect Immun* 2003;31(9): 4873-82
48. Monack DM, Bouley DM, Fallow, S. Typhimurium persist within macrophage in the mesenteric lymph nodes of chronically infected *Nramp 1<sup>+/+</sup>* mice and can be reactivated by IFN- $\gamma$  neutralization. *J exp. Med* 2004;199(2):231–41
49. Kehres DG, Jankiraman A, Slauch JM, Maquire ME. Regulation of *Salmonella enterica* serovar typhimurium *mnt H* transcription by H<sub>2</sub>O<sub>2</sub>, Fe<sup>2+</sup> and Mn<sup>2+</sup>. *Bacterial* 2002 ;182(12):3151-8
50. Nimim Putri. Z, Pengaruh pemberian teh hijau dan daun salam terhadap produksi nitric oxide makrofag pada mencit balb/c yang diinfeksi salmonella typhimurium. Skripsi, Universitas Diponegoro, 2006
51. Santoso S. SPSS versi 10 Mengolah data statistik secara profesional. Cetakan ke 3 Jakarta. PT. Elex Media Komputindo 2002 h :118-32
52. Agus Irianto, Konsep dasar dan aplikasinya, Jakarta. Prenada media 2005 h:217-47

53. Ajizah, Sensitivitas *Salmonella typhimurium* terhadap ekstrak daun jambu dan daun salam, *Bioscientiae* 2004;1(1):31-8
54. Laili Candrawati, Uji aktifitas antibakteri ekstrak etanol daun salam terhadap pertumbuhan *Salmonella typhi* secara *in vitro*, Tesis Universitas Indonesia 2002
55. Susan.M. Noor, Masrian poeloengan dan titin yulianti. Analisis senyawa kimia sekunder dan uji antibakteri ekstrak daun salam terhadap *Salmonella typhi*, Seminar Nasional Teknologi Peternakan, Balai penelitian Veterier Fakultas farmasi,ISTN, Jakarta,2006
56. Yuliyanto, Perbandingan kepekaan bakteri *Salmonella typhi* terhadap minyak atsiri cengkeh dan daun salam secar *in vitro*, Tesis Universitas Indonesia,2008

57. Edward CK, Ghiasuddin SM, Yunger LM, Lorence RM, Dantzer R, Kelley KW. In vivo administration of recombinant growth hormone or gamma interferon activates macrophages : Enhanced resistance to experimental Salmonella Typhimurium infection is correlated with generation of reactive oxygen intermediate. *Infect Immunol.* 1992 ;60(6):2514 -21
58. Gao XM, Tite JP, Lipscombe M Jones SR, Ferguson DJP, McMichael AJ. Recombinant Salmonella typhimurium strain that invade non phagocytic cells are resistant to recognition by antigen specific cytotoxic T lymphocytes. *Infect Immun*, 1992;60(9):3780-9
59. Ramamoorthy L, Kemp MC, Tizard IR.  $\alpha$ -mannan,  $\alpha$ -beta-(1,4)-acetylated mannan, induces nitric oxide production in macrophage cell in line RAW 264-7. *Mol Pharmacol* 1999;50:878-84
60. Huang J, Degraives FJ, Lenz SD, Gao D, Feng P, Li D, Schlappe T, Kaltenboeck B. The quantity of nitric oxide released by macrophage regulates chlamydia – induced disease. *Proc.Natl.Acad Sci* 2002;99(6):3914-9
61. Szabo C, Thiemermann C, Wu CC, Peretti M, Vane RJ. Attenuation of the induction of nitric oxide synthase by endogenous glucocorticoid accounts for endotoxin tolerance in vivo. *National Academy of science* 1994;91:271–5.
- 62.
63. Tim Ilmu Penyakit Dalam, Buku Ajar Ilmu Penyakit Dalam. 3 th ed. Jakarta : Balai Penerbit FKUI ; 1996, h : 435-41
64. Le TP, Hoffman SL. Typhoid fever, *Tropical infectious disease : Principles, Pathogens & practice.* New York, Churchill, 1999 ; 277-83
65. Supargiyono, Mononuclear Phagocyte System (MPS). Makalah pada : Kuliah defisiensi biologi molekuler dan imunologi. Yogyakarta : Tim Pengelola Program Doktor FK UGM, 29 Januari – 18 Maret 2000 : 1-9
66. Keuter M. Experimental studies on pathogenesis of Salmonella infection. Thesis, Katholike Universiteit Nijmegen, 1998

**67. Nitric Oxide is Involved in the Upregulation of IFN- $\gamma$  and IL-10 mRNA Expression by CD8<sup>+</sup> T Cells During the Blood Stages of *P. chabaudi* AS Infection in CBA/Ca Mice**

68. **M Legorreta-Herrera** <sup>1</sup>✉, **S Rivas-Contreras**<sup>1</sup>, **JL Ventura-Gallegos**<sup>2</sup> and **A Zentella-Dehesa**<sup>2,3</sup>  
69. *Int. J. Biol. Sci.* 2011, 7
- 70.
71. Purwoko Y, Pengaruh pemberian ekstrak bawang putih terhadap respon Imun Seluler pada mencit Balb/C yang diinfeksi *Salmonella typhimurium*, Tesis Magister Ilmu Biomedik Universitas Diponegoro, Semarang, 2003
72. MacFarlane AS, Schwacha MG, Eisenstein TK. In vivo blockage of nitric oxide with aminoquanidine inhibits immunosuppression induced by an attenuated strain *Salmonella typhimurium*, potentiates salmonella infection, and inhibits makrofag and polymorphonuclear leukocyte influx into the spleen. *Infect Immun*, 1999 ; 67(2) : 891-8
73. Krause KH, *Profesional Phagocytes : Predators and Prey of Microorganism*, *Scweiz Med Wochenschr*, 2000 ; 130 :97-100.
74. Erikson S, Bjorkman J, Petterson S, anderson DI, Rhen M. *Salmonella typhimurium* mutants that downregulate phagocyte NO production. *Cell Microbiol*, 2000 ;2(3):139-50
75. **Badan Pengawas Obat dan Makanan, Parameter Standar Umum Ekstrak Tumbuhan Obat, Departemen Kesehatan RI, 2000**
76. Daniel Mangoting, dkk, *Tanaman Lalap Berkhasiat obat*, Penerbit Penebar Swadaya, Jakarta, 2005
77. Dietert RR, Hotchkiss JH, Austic RE, sung Y. Production of Reactive Nitrogen Intermediates by Macrofages, In : *Methodes in Immunotoxicology*. Editor : Burleson GR, Dean JH, Munson AE. New York. A John Wilye Liss & sons Inc Publ. 1995;2:99-117
78. Dietert RR, Hotchkiss JH, Austic RE, Sung Y. Production of Reactive Nitrogens Intermediates by Macrophages in : *Methods in immunotoxicology vol 2*, editor. Burleson GR, Dean JH, Munson AE New York : A John Wilye Liss & Sons inc Publ, 1995 ; 99-117
79. Dieterd RR, Hotchkiss JH, Austic RE, Yen-jen Sung. Production of reactive nitrogen intermediates by macrophages, in : Burleson GR, dean JH, Munson AE. *Methodsnin immunotoxicology, vol 2*. New York-Singapore : Ajohn Willey and Sons S. Inc, 1995 ; 99-17
80. Laurence DR, Bacharach AL, *Petunjuk praktikum toksikologi*. Dalam : Donatus IA, Suhardjono D, Nurlaela, Sugiyanto, Hakim L, Wahyono D, Mulyono. Jogjakarta : Fakultas Farmasi UGM, 1992
81. Mastroeni P, Clare S, Khan S, Harrison JA, et al. Interleukin-18 contributes to host resistance and gamma interferon production in mice infected with virelent *Salmonella typhimurium*. *Infect Immun*, 1999 : 478-83
82. **Efendi Z. Daya Fagositosis Makrofag pada Jaringan Longgar Tubuh2003.**

83. Rengganis KGBdI. *Imunologi Dasar*. 8 ed. Jakarta: Balai Penerbit Fakultas Kedokteran Indonesia; 2009.
84. Herra Studiawan dan M.Hadisantosa, 2005,” Uji Aktivitas Penurunan Kadar Glukosa Darah Ekstrak Daun Salam pada mencit yang diinduksi Aloksan,” *Media Kedokteran Hewan*.21 : 2 ; 62-5
85. Kasno, Bambang. I, Indranila, Budi. R, Ratna DP, Tri.I.W. *Demam Tifoid, Belajar Bertolak dari Masalah*, Editor : Widiastuti.S, Semarang : Badan Penerbit Universitas Diponegoro, 2000
86. Jawetz E, Melnick JL, Adelberg EA, Brocks GF, Butel JS, Ornston LN, *Mikrobiologi Kedokteran*, 20<sup>th</sup> ed. Jakarta : EGC, 1996 : 234-43.
87. Kee.T, MC.Kee JR, *Biochemistry*, USA : Wim.C. Brown Publisher 1996
88. Parslow TG *Imune Respons In* : 9<sup>th</sup> ed Prentice Hall, Medical Immunology New Jersey 1997 p : 63-72
89. Baratawidjaja KG. *Imunologi Dasar*. 6 ed. Jakarta: Balai Penerbit Fakultas Kedokteran Indonesia; 2004.

90.

91.

Efek farmakologis dan hasil pemakaian

1. Kromatografi gas menunjukkan minyak asiri dan salam mengandung 28 gas komponen, salah satunya eugenol. Dengan kromatografi lapis tipis disimpulkan bahwa minyak asiri daun salam terdiri dari seskuiterpen lakton yang mengandung fenol. Konsentrasi terkecil minyak asiri yang mampu menghambat pertumbuhan E.Coli adalah 40%, sedangkan terhadap S.aureus sekitar 5% (Retno Sadewi,FF UGM, 1992)

2. Uji mikrobiologi dengan menggunakan metode cakram menunjukkan bahwa ekstrak etanol daun salam dapat, menghambat pertumbuhan bakteri E.coli, Vibrio cholera, Salmonella sp. tetapi Enterobacter sp. bersifat resisten. (Beni Wraman, JF FMIPA UNAND)

3. Ekstrak air daun salam memiliki efek hipoglikemik (menurunkan kadar gula darah). Pada tikus penderita diabetes mellitus yang tidak tergantung pada insulin (DMTTI), sedangkan pada tikus penderita diabetes mellitus yang tergantung pada insulin tidak nampak efek hipoglikemik.



92. Yuliyanto membuktikan bahwa minyak atsiri cengkeh mempunyai aktifitas antibakteri terhadap *Salmonella typhi* lebih tinggi dibandingkan dengan minyak atsiri yang terdapat dalam daun salam 75

Penelitian yang dilakukan oleh Ajizah membuktikan pertumbuhan *Salmonella typhimurium* secara *in vitro* dapat dihambat dengan ekstrak daun salam dan ekstrak daun jambu sampai pada konsentrasi 200 mg/ml. 72

Masrian poeloengan membuktikan bahwa zat kimia ( minyak atsiri, alkaloid, tanin, saponin ) yang terdapat dalam daun salam mempunyai daya antibakteri terhadap bakteri *Salmonella typhimurium*, kenaikan produksi nitric oxide dan indeks fagositosis makrofag pada kelompok perlakuan menunjukkan bahwa aktifitas pembunuhan terhadap bakteri juga meningkat.74