

DAFTAR PUSTAKA

- Acha, P. N. and S. Boris. 2003. Zoonoses and Communicable Disease Common to Man and Animals Volume 1: Bacterioses and Mycoses. 3rd ed. Washington. Pan America.
- Acharya, K. P., K. Kaphle, K. Shrestha, B. G. Bastuji and H. L. Smitsf. 2016. Review of Brucellosis in Nepal. *Int J Vet Sci Med.* 4:54-62.
- Adone, R., M. Muscillo, G. L. Rosa, M. Francia and M. Tarantino. 2011. Antigenic, Immunologic and Genetic Characterization of Rough Strains *B.abortus* RB51, *B.melitensis* B115 and *B.melitensis* B18. 6(10): 1-8.
- Al Dahouk, S., R. M. Hagen, K. Nöckler, H. Tomaso, M. Wittig, H. C. Scholz, G. Vergnaud and H. Neubauer. 2005. Failure of a Short-Term Antibiotic Therapy for Human Brucellosis Using Ciprofloxacin: A study on in Vitro Susceptibility of Brucella Strains. *Chemotherapy.* 511:352-356.
- Ali, B. A., T. H. Huang, H. H. Salem and Q. D. Xie. 2006. Influence of Thermal Cycler Day to Day Reproducibility of Random Amplified Polymorphic DNA Fingerprint. *Biotechnology (5):*324-329.
- Alocita Mandiri, PT. 2016. Laporan Jasa Konsultasi Penelitian Pekerjaan Surveilans Penyakit Hewan (Evaluasi Program Surveilans Penyakit Brucellosis pada Sapi di Provinsi Jawa Barat).
- Alton, G. G., L. M. Jones, R. D. Angus and J. M. Verger. 1988. Techniques for the Brucellosis Laboratory. Paris : Institut National de la Recherche Agronomique.
- Alvarez-Martinez, C. E. and P. J. Christie. 2009. Biological Diversity of Prokaryotic Type IV Secretion Systems, *Microbiol. Mol. Biol. Rev.* 73:775–808.
- Ardhiani, F. 2012. Karakterisasi Molekuler Gen Penyandi OMP 2a *Brucella abortus* Isolat Lokal. Thesis. Fakultas Kedokteran Hewan, Unair:Surabaya.
- Arenas-Gamboa, A. M., A. C. Rice-Ficht, Y. Fan, M. M. Kahl-McDonagh and T. A. Ficht. 2012. Extended Safety and Efficacy Studies of the Attenuated *Brucella* Vaccine Candidates 16 M(Delta)vjbR and S19(Delta)vjbR in the immunocompromised IRF-1^{-/-} mouse model. *Clin Vaccine Immunol,* 19:249-260.
- Arocena, G. M., R. Sieira, D. J. Comerci and R. A. Ugalde. 2010. Identification of the Quorum-Sensing Target DNA Sequence and N-Acylhomoserine

- Lactone Responsiveness of the *Brucella abortus* VirB promoter. *J.Bacteriol.* 192: 3434–3440.
- Atluri, V. L., M. N. Xavier, M. F. deJong, A. B. Hartigh and R. M. Tsohis. 2011. Interactions of the Human Pathogenic *Brucella* Species with Their Hosts. *Annu.Rev.Microbiol.* 65:523–541.
- Applied biosystems. 2010. Manual Procedure. <http://www.appliedbiosystems.com/14> April 2019.
- Backert, S. and M. Clyne. 2011. Pathogenesis of *Helicobacter pylori* infection, *Helicobacter* 16 (Suppl. 1):19–25.
- Balai Besar Veteriner [BBVet] Maros. 2010. Laporan Tahunan 2010. Maros: BBVet Maros.
- Balai Besar Veteriner [BBVet] Maros. 2012. Laporan Kegiatan Program Surveillans Brucellosis Di Wilayah Kerja Balai Besar Veteriner Maros.
- Balai Besar Veteriner [BBVet] Wates. 2010. Laporan Tahunan 2010. Yogyakarta: BBVet Wates.
- Balai Penyidikan dan Pengujian Veteriner [BPPV] Regional I. 2010. Laporan Tahunan 2010. Medan: BPPV Regional I.
- Balai Penyidikan dan Pengujian Veteriner [BPPV] Regional III. 2010. Laporan Tahunan 2010. Bandar Lampung: BPPV Regional III.
- Bargen, K., J. P. Gorvel and S. P. Salcedo. 2012. Internal Affairs: Investigating the *Brucella* Intracellular Life Style. *FEMS Microbiol. Rev.* 36:533–562.
- Baron, C. 2005. From Bioremediation to Biowarfare: on the Impact and Mechanism of Type IV Secretion Systems, *FEMS Microbiol. Lett.* 253:163–170.
- Barquero-Calvo, E., E. Chaves-Olarte, D. S. Weiss, C. Guzmán-Verri, C. Chacón- Diaz and A. Rucavado. 2007. *Brucella abortus* Uses a Stealthy Strategy to Avoid Activation of the Innate Immune System during the Onset of Infection. *PLoS ONE.* 2:e631.
- Boschiroli, M. L., S. Ouahrani-Bettache, V. Foulongne, S. Michaux-Charachon, G., Bourg and A. Allardet-Servent. 2002. The *Brucella suis* VirB Operon is Induced Intracellularly in Macrophages. *Proc.Natl.Acad.Sci.U.S.A.* 99: 1544–1549.
- Bounaadja, L., D. Albert, B. Chénais, S. Hénault, M. S. Zygmunt, S. Poliak and B. Garin-Bastuji. 2009. Real-Time PCR for Identification of *Brucella spp.*: a

- Comparative Study of IS711, bcp31 and per Target Genes. *Vet Microbiol.* 137:156-164.
- Brasil. 2006. Manual Técnico do Programa Nacional de Controle e Erradicação da Brucelose e Tuberculose—PNCEBT. Brasília: Ministerio da Agricultura Pecuária e Abastecimento.
- Bricker, B. J. 2002. PCR as a Diagnostic Tool for Brucellosis. *Vet Microbiol.* 90:435-446.
- Bricker, B. J., D. R. Ewalt, S. C. Olsen and A. E. Jensen. 2003. Evaluation of the *Brucella abortus* Species-Specific Polymerase Chain Reaction Assay, an Improved Version of the Brucella AMOS Polymerase Chain Reaction Assay for Cattle. *J Vet Diagnostic Investig.* 15:374- 378.
- Brucellosis Fact Sheet. 2003 . Brucellosis . Centre for Food Security and Public Health . pp . I - 7.
- Cascales, E. and P. J. Christie. 2003. the Versatile Bacterial Type IV Secretion Systems, *Nat. Rev. Microbiol.* 1:137–150.
- Caswell, C. C., J. M. Gaines and R. M. II. Roop. 2012. the RNA Chaperone Hfq Independently Coordinates Expression of the VirB TypeIV Secretion System and the LuxR-type Regulator BabRin *Brucella abortus* 2308. *J.Bacteriol.* 194: 3–14.
- Celli, J., C. de Chastellier, D. M. Franchini, J. Pizarro-Cerda, E. Moreno, and J. P. Gorvel. 2003. Brucella Evades Macrophage Killing via VirB - Dependent Sustained Interactions with the Endoplasmic Reticulum. *J.Exp.Med.* 198: 545–556.
- Celli, J., S.P. Salcedo and J.P. Gorvel. 2005. from the Cover: Brucella Coopts the Small GTPase Sar 1 for Intracellular Replication. *Proc National Acad Science.* 120:1673-1678.
- Celli, J. 2015. the Changing Nature of the Brucella Containing Vacuole. *Cell Microbiol* 17:951–958.
- Chandran Darbari, V. and G. Waksman. 2015. Structural Biology of Bacterial Type IV Secretion Systems. *Annu Rev Biochem* 84:603– 629.
- Christie, P. J., K. Atmakuri, V. Krishnamoorthy, S. Jakubowski and E. Cascales. 2005. Biogenesis, Architecture and Function of Bacterial Type IV Secretion Systems. *Annu Rev Microbiol.* 59: 451-485.
- Copin, R., M. A. Vitry, D. Hanot Mambres, A. Machelart, C. De Trez, J. M. Vanderwinden, S. Magez, S. Akira, B. Ryffel, Y. Carlier, J. J. Letesson and E. Muraille. 2012. In Situ Microscopy Analysis Reveals Local Innate

- Immune Response Developed Around *Brucella* Infected Cells in Resistant and Susceptible Mice. *PLoS Pathog* 8:e1002575.
- de Figueiredo, P., T. A. Ficht, A. R. Ficht, C. A. Rossetti and L. G. Adams. 2015. Pathogenesis and Immunobiology of Brucellosis Review of *Brucellae* Host Interactions. *The American Journal of Pathology*. 185(6):1505-1517.
- Deguo, K., M. Toubiana, S. Hartati, A. Kusumawati, J. Dubremetz and J. Widada. 2008. Development of Loop-Mediated Isothermal Amplification (LAMP) as a Diagnostic Tool of Toxoplasmosis. *Vet Parasitol*. 162:327-331.
- de Jong, M. F., Y. H. Sun, A. B. den Hartigh, J. M. van Dijl and R. M. Tsois. 2008. Identification of *VceA* and *VceC*, Two Members of the *VjbR* Regulon that are Translocated into Macrophages by the *Brucella* Type IV Secretion System. *Mol. Microbiol*. 70: 1378–1396.
- de Jong, M. F. 2012. Identification and Characterization of *Brucella* Effector Proteins. Groningen: s.n. 16-17.
- de Jong, M. F., T. Starr, M. G. Winter, A. B. den Hartigh, R. Child, L. A. Knodler, J. M. van Dijl, J. Celli and R. M. Tsois. 2013. Sensing of Bacterial Type IV Secretion via the Unfolded Protein Response. *MBio*, 4.e00418e12.
- Delrue, R. M., M. Martinez-Lorenzo, P. Lestrade, I. Danese and V. Bielarz. 2001. Identification of *Brucella spp.* Genes Involved in Intracellular Trafficking. *Cell Microbiol*. 3(7): 487-497.
- den Hartigh, A. B., H. G. Rolán, M. F. De Jong and R. M. Tsois. 2008. *VirB3* to *VirB6* and *VirB8* to *VirB11*, but not *VirB7*, are Essential for Mediating Persistence of *Brucella* in the Reticuloendothelial System. *J Bacteriol* 190:4427–4436.
- de Santis, R., A. Ciammaruconi, A. Pomponi, S. Fillo and F. Lista. 2011. *Brucella*: Molecular Diagnostic Techniques in Response to Bioterrorism Threat. *J Bioterr Biodef*. 2011:1-8.
- Dhama, K., S. Karthik, S. Chakraborty, R. Tiwari, Kapoor, A. Kumar and P. Thomas. 2014. Loop-mediated Isothermal Amplification of DNA (LAMP): A New Diagnostic Tool Lights the World of Diagnosis of Animals and Human Pathogens: A review. *Pak J Biol Sci*. 17:151-166.
- Direktorat Kesehatan Hewan [Ditkeswan]. 2015. Road Map Pengendalian dan Penanggulangan Brucellosis. Direktorat Kesehatan Hewan, Direktorat Jenderal Peternakan dan Kesehatan Hewan, Kementerian Pertanian RI.

- Direktorat Jendral Peternakan [Ditjennak]. 2000. Program dan Pedoman Teknis Pemberantasan Brucellosis pada Sapi Perah di Pulau Jawa. Direktorat Bina Kesehatan Hewan. Departemen Pertanian. Halaman: 64-67.
- Direktorat Jendral Peternakan [Ditjennak]. 2006. Program dan Pedoman Teknis Pemberantasan Brucellosis pada Sapi Perah di Pulau Jawa. Direktorat Bina Kesehatan Hewan. Departemen Pertanian.
- Direktorat Jendral Peternakan [Ditjennak]. 2012. Kebijakan Kesehatan Hewan dalam Pengendalian PHM dan Zoonosis Situasi Penyakit Hewan Menular Tahun 2010-2011. Rapat Koordinasi Kesehatan Hewan dan Kesehatan Masyarakat Veteriner se-wilayah kerja BPPV Subang, 7 Nopember 2012.
- Dorneles, E. M. S., N. Sriranganathan and A. P. Lage. 2015. Recent Advances in *Brucella abortus* Vaccines Veterinary Research In Press.
- Dozot, M., R. A. Boigegrain, R. M. Delrue, R. Hallez, S. Ouahrani-Bettache and I. Danese. 2006. the Stringent Response Mediator Rsh is Required for *Brucella melitensis* and *Brucella suis* virulence, and for Expression of the Type Iv Secretion System virB. Cell. Microbiol. 8:1791–1802.
- Eker, A., I. Uzunca, O. Tansel and M. Birtane. 2011. a Patient with Brucellar Cervical Spondylodiscitis Complicated by Epidural Abscess. J Clin Neurosci. 18(3):428–430.
- El Idrissi, A.H., A. Benkirane, M. el Maadoudi, M. Bouslikhane, J. Berrada and A. Zerouali. 2001. Comparison of the Efficacy of *Brucella abortus* Strain RB51 and *Brucella melitensis* Rev. 1 Live Vaccines Against Experimental Infection with *Brucella melitensis* in Pregnant Ewes. Rev Sci Tech. 20:741-7.
- Erlich, H. A. 1991. Basic Methodologi : in PCR Technology Principles and Application for DNA Amplification. Stockton Press 1-5.
- Fischer, W. 2011. Assembly and Molecular mode of Action of the *Helicobacter pylori* Cag Type IV Secretion Apparatus, FEBS J. 278:1203–1212.
- Forestier, C., F. Deleuil, N. Lapaque, E. Moreno and J. P. Gorvel. 2000. *Brucella abortus* Lipopolysaccharide in Murine Peritoneal Macrophages Acts as a Down-Regulator of T Cell Activation. J. Immunol. 165: 5202–5210.
- Franco, M. P., M. Mulder and H. L. Smits. 2007. Persistence and Relapse in Brucellosis and Need for Improved Treatment. Trans.R.Soc.Trop.Med.Hyg. 101: 854–855.
- García-Yoldi, D., C. M. Marín, M. J. de Miguel, P. M. Muñoz, J. L. Vizmanos and I. López-Goñi. 2006. Multiplex PCR Assay for the Identification and Differentiation of All *Brucella* Species and the Vaccine Strains *Brucella*

- abortus* S19 and RB51 and *Brucella melitensis* Rev1. Clin Chem. 52:779-781.
- Godfroid, J., A. Cloeckaert, J. P. Liautard, S. Kohler, D. Fretin and K. Walravens. 2005. From the Discovery of the Malta fever's Agent to the Discovery of a Marine Mammal Reservoir, Brucellosis has Continuously been a Re-Emerging Zoonosis. Vet Res. 36: 313–326.
- Godfroid, J., K. Nielsen and C. Saegerman. 2010. Diagnosis of Brucellosis in Livestock and Wildlife. Croat Med J. 51:296-305.
- Gorvel, J. P. 2008. Brucella: a Mr 'Hide' converted into Dr Jekyll. Microbes Infect. 10: 1010–1013.
- Gupta, V. K., S. Nayakwadi, A. Kumar, Gururaj and R. S. Pawaiya. 2014. Markers for the Molecular Diagnosis of Brucellosis in Animals. Adv Anim Vet Sci. 2:31-39.
- Habtam, T. T., R. Rathore, K. Dhama and K. Karthik. 2013. Isolation and Molecular Detection of *Brucella melitensis* from Disease Outbreak in Sheep and *Brucella abortus* from Cattle Farm by 711 and omp2a Gene Based PCR. J Curr Res. 5:1920-1925.
- Handijatno, D., H. E. Narumi, S. Chusniati, S. Saruji dan W. Tyasningsih. 2016. Diagnosis secara Mikrobiologis Konvensional. Departemen Mikrobiologi. Fakultas Kedokteran Hewan. Universitas Airlangga.
- Hapfelmeier, S., N. Domke, P. C. Zambryski and C. Baron. 2000. VirB6 is Required for Stabilization of VirB5 and VirB3 and Formation of VirB7 Homodimers in *Agrobacterium tumefaciens*. J Bacteriol. 182: 4505-4511.
- Harini, S. S., M. Leelombika, M. N. Shiva and N. Satyanarayana. 2008. Optimization of DNA Isolation and PCR-RAPD Methods for Molecular Analysis of *Urginea Indica* Kunth. International Journal Integrative Biology (2):138-144.
- Hiremath, G. S., D. J. Sullivan, A. K. Tripathi, R. E. Black and S. Sazawal. 2006. Multiplex PCR Assay for the Identification and Differentiation of all *Brucella* Species and the Vaccine Strains *Brucella abortus* S19 and RB51 and *Brucella melitensis* Rev1. Clinical Chemistry 52(4): 779-781.
- Hong, P.C., R. M. Tsohis and T. A. Ficht. 2000. – Identification of Genes Required for Chronic Persistence of *Brucella abortus* in Mice. Infect. Immun. 68:4102–4107.
- Huber, B., H. C. Scholz, N. Lucero and H. J. Busse. 2009. Development of a PCR Assay for Typing and Subtyping of *Brucella* sp. Int J Med Microbiol. 299:563-573.

- Iman, E. R. S., R. Ratnasari, E. N. Hatsuji, Suryanie, S. Chusniati dan W. Tyasningsih. 2008. Penuntun Praktikum Mikrobiologi Vet I Program S-1. Depdikbud Universitas Airlangga. FKH. Surabaya.
- Iman, E. R. S., R. Ratnasari, H. E. Narumi, S. Saruji, W. Tyasningsih dan S. Chusniati. 2011. Mikrobiologi Veteriner I. AUP Unair. Surabaya.
- Juhas, M., J. R. van der Meer, M. Gaillard, R. M. Harding, D.W. Hood and D.W. Crook. 2009. Genomic Islands: Tools of Bacterial Horizontal Gene Transfer and Evolution, FEMS Microbiol. Rev. 33:376–393.
- Kaltungo, B. Y., S. N. A. Saidu, A. K. B. Sackey and H. M. Kazeem. 2014. A Review on Diagnostic Techniques for Brucellosis. African J Biotech. 13:1-10.
- Kang, S. I., M. Her, J. W. Kim, J. Y. Kim, K. Y. Ko, Y. M. Ha and S. C. Jung . 2011. Advanced Multiplex PCR Assay for Differentiation of *Brucella* Species. Appl Environ Microbiol. 77:6726-6728.
- Karthik, K., R. Rathore, P. Thomas, A. Elamurugan, T. R. Arun and K. Dhama. 2014. Serological and Molecular Detection of *Brucella abortus* from Cattle by RBPT, STAT and PCR and Sample Suitability of Whole Blood for PCR. Asian J Anim Vet Adv. 9:262-269.
- Ke, Y., Y. Wang, W. Li and Z. Chen. 2015. Type IV Secretion System of *Brucella spp.* and its Effectors. Front. Cell. Infect. Microbiol. 5:72.
- Khamesipour, F., A. Doosti and H. Taheri. 2013. Molecular Detection of *Brucella spp* in the Semen, Testis and Blood Samples of Cattle and Sheep. J Pure Appl Microbiol. 7:495-500.
- Kumar, S., U. Tuteja, K. Sarika, D. K. Singh, A. Kumar and O. Kumar. 2011. Rapid Multiplex PCR Assay for the Simultaneous Detection of the *Brucella* Genus, *Brucella abortus*, *Brucella melitensis*, and *Brucella suis*. J Microbiol Biotechnol. 21:89-92.
- Lai, E. M., O. Chesnokova, L. M. Banta and C. I. Kado. 2000. Genetic and Environmental Factors Affecting T-pilin Export and T-pilus Biogenesis in Relation to Flagellation of *Agrobacterium tumefaciens*. J Bacteriol. 182(13): 3705-3716.
- Lake, P. R. M. T. 2010. Kajian Lintas Seksional Prevalensi Brucellosis pada Sapi di Kabupaten Kupang [Thesis]. Fakultas Kedokteran Hewan. Universitas Gadjah Mada. Yogyakarta.
- Lawley, T. D., W. A. Klimke, M. J. Gubbins and L. S. Frost. 2003. F Factor Conjugation is a True Type IV Secretion System. FEMS Microbiol. Lett. 224:1–15.

- Lee, J. J., D. G. Kim, D. H. Kim, H. L. Simborio, W. Min and H. J. Lee. 2013. Inter Play between Clathrin and Rab5 Controls the Early Phagocytic Trafficking and Intracellular Survival of *Brucella abortus* within HeLa cells. *J. Biol. Chem.* 288,28049–28057.
- Llosa, M., C. Roy and C. Dehio. 2009. Bacterial Type IV Secretion Systems in Human Disease, *Mol. Microbiol.* 73:141–151.
- Loewe, L. 2008. Genetic mutation. *Nat. Edu.* 1(1):113.
- Lo'pez-Goni, I., I. Moriyono, M. J. Grillo, D. Monreal, D. Gonza'lez, M. Mainar, E. Moreno and J. M. Blasco. 2000. Rough Vaccines in Animals Brucellosis : Structural and Genetic Basis and Present Status. *Veterinary Res.* 35:1-38.
- López-Goñi, I., C. Guzmán-Verri., L. Manterola, A. Sola Landa, I. Moriyón and E. Moreno. 2002. – Regulation of *Brucella* virulence by the two-component system BvrR/BvrS. *Vet. Microbiol.* 90: 329–339.
- Lo'pez-Goni, I., D. García-Yoldi and J. M. Marinar. 2008. Restriction Site Polymorphisms in the Genes Encoding New Member Group 3 Outer Membran Protein Family of *Brucella sp.* *FEMS Microbiology Letters.* 245: 79 – 84.
- López-Goñi , I., D. García-Yoldi , C. M. Marín, M. J. De Miguel, P. M. Muñoz, J. M. Blasco, I. Jacques, M. Grayon, A. Cloeckaert and A. C. Ferreira. 2008. Evaluation of a Multiplex PCR Assay (Bruce-ladder) for Molecular Typing of all *Brucella* Species, Including the Vaccine Strains. *J Clin Microbiol.* 46:3484-3487.
- López-Goñi, I., D. García-Yoldi, C. M. Marín, M. J. de Miguel, E. Barquero-Calvo, C. Guzmán-Verri, D. Albert and B. GarinBastuji. 2011. New Bruce-Ladder Multiplex PCR Assay for the Biovar Typing of *Brucella suis* and the Discrimination of *Brucella suis* and *Brucella canis*. *Vet Microbiol.* 154:152-155.
- Manterola, L., T. Garces, A. Ficapal, G. Shopayeva, J. M. Blasco, C. M. Marin and I. Lopez-Goni. 2003. Evaluation of a PCR Test for the Diagnosis of *Brucella ovis* Infection in Semen Samples from Rams. *Veterinary Microbiology.* 92: 65-72.
- Martirosyan, A., C. Pérez-Gutierrez, R. Banchereau, H. Dutartre, P. Lecine and M. Dullaers. 2012. *Brucella* b 1,2 Cyclic Glucan is an Activator of Human and Mouse Dendritic Cells. *PLoS Pathog.* 8:e1002983.doi: 10.1371/journal.ppat.1002983.

- Mayer-Scholl, A., A. Draeger, C. Göllner, H. C. Scholz and K. Nöckler. 2010. Advancement of a Multiplex PCR for the Differentiation of all Currently Described *Brucella* species. *J Microbiol Methods*. 80:112-114.
- Miranda, K. L. 2009. Evaluation of Brucellosis Vaccine in Brazil. [Disertasi]. Brazil: UFMG – Escola de Veterinaria.
- Moreno, E. and I. Moriyon. 2006. the Genus *Brucella*. *Prokaryotes* 5: 315–456.
- Mori, Y., K. Nagamine, N. Tomita and T. Notomi. 2001. Detection of Loop-Mediated Isothermal Amplification Reaction by Turbidity Derived from Magnesium Pyrophosphate formation. *Biochem Biophys Res Commun*. 289:150- 154.
- Moriyon, I., M. J. Grill 'o and D. Monreall. 2004. Rough Vaccines ' in Animal Brucellosis: Structural and Genetic Basis and Present Status. *Veterinary Research*. 35 (1):1–38.
- Moslemi, E. 2009. Loop Mediated Isothermal Amplification (LAMP) for Rapid Detection of HBV in Iran. *African J*. 3(8): 439–45.
- Myeni, S., R. Child, T. W. Ng, J. J. Kupko, T. D. Wehrly, S. F. Porcella, L. A. Knodler and J. Celli. 2013. *Brucella* Modulates Secretory Trafficking via Multiple type IV Secretion Effector Proteins. *PLoS Pathog*, 9:e1003556.
- Nagai, H. and T. Kubori. 2011. Type IV Secretion Systems of *Legionella* and other Gram-Negative Bacteria, *Front. Microbiol*. 2:136.
- Naipospos, T. P., M. D. W. Widiastuti, Mardiatmi, Y. Yupiana, P. P. Suseno, Ernawati, J. Hapold, J. Weaver, J. Allen, Valeska and J. Daryono. 2014. Roadmap Pemberantasan Brucellosis Nasional di Indonesia. Jakarta. Direktorat Jenderal Peternakan dan Kesehatan Hewan Kementerian Pertanian Republik Indonesia.
- Neta, A.V.C., J.P.S. Mol, M.N. Xavier, T.A. Paixao, A.P. Lage and R.L. Santos. 2010. Pathogenesis of Bovine brucellosis. *J Vet*. 184: 146-155.
- Nidom, C. A. dan G. C. de Vries. 2007. Isolasi DNA Prokariotik untuk Amplifikasi Genom dengan *Polymerase Chain Reaction*. Workshop Aplikasi PCR di Bidang Kesehatan dan Kedokteran. FKH Unair. Surabaya.
- Noor, S.M. 2006. Brucellosis: Penyakit Zoonosis yang Belum Banyak Dikenal di Indonesia. *Wartazoa*. 16 (1) : 31 – 39.
- Noor, S. M. 2006. Epidemiologi dan Pengendalian Brucellosis pada Sapi Perah di Pulau Jawa. Bogor. Balai Besar Penelitian Veteriner Bogor.

- Noor, S. M., P. P. Sudarmono, A. Kusumawati dan A. Karuniawati. 2014. Identifikasi *Brucella abortus* Isolat Lokal dengan *Brucella abortus* Strain Specific-Polymerase Chain Reaction. *Jurnal Veteriner*. 15(3):306-311.
- Noor, S. M., P. P. Sudarmono, A. Kusumawati dan A. Karuniawati. 2015. Deteksi Brucellosis pada Susu Sapi dengan Uji Polymerase Chain Reaction (PCR). *J Kedokteran Hewan*. 9:64-66.
- Noor, S. M. 2018. Teknik Molekuler Amplifikasi DNA untuk Deteksi Brucellosis pada Sapi. *Wartazoa*. 28 (2): 81-88.
- Notomi, T., H. Okayama, H. Masubuchi, T. Yonekawa, K. Watanabe, N. Amino and T. Hase. 2000. Loop-Mediated Isothermal Amplification of DNA. *Nucleic Acids Res*. 28:E63.
- O'Callaghan, D., C. Cazeville, A. Allardet-Servent, M. L. Boschioli, G. Bourg and V. Foulongne. 1999. a Homologue of the *Agrobacterium tumefaciens* VirB and *Bordetella pertussis* Ptl TypeIV Secretion Systems is Essential for Intracellular Survival of *Brucella suis*. *Mol.Microbiol*. 33:1210–1220.
- Office International des Épizooties [OIE]. 2004. Manual Standards for Diagnostic Test and Vaccine for Terrestrial Animal. Reference Laboratories for Bovine Brucellosis. www.unau.es./microbial/Brucellosis/2003/proceeding.pdf.
- Office International des Épizooties [OIE]. 2009. Manual of diagnostic tests and vaccines for terrestrial animals. 5th ed. Paris (France): Office International des Épizooties.
- Office International des Épizooties [OIE]. 2011. Office International des Épizooties. 6th ed. Paris (France): Office International des Épizooties.
- Office International des Épizooties [OIE].2016. Brucellosis (*Brucella abortus*, *Brucella melitensis* and *Brucella suis*) (Infection with *Brucella abortus*, *Brucella melitensis* and *Brucella suis*), Viewed 14 Maret 2019, from http://www.oie.int/fileadmin/Home/eng/Health_standards/tahm/2.01.04_BRUCELLOSIS.pdf
- Olsen, S. C. 2000. Immune Responses and Efficacy after Administration of a Commercial *Brucella abortus* Strain RB51 Vaccine to Cattle. *Vet Theriogenol*. 1: 183–191.
- Olsen, S. C. and W. S. Stoffregen. 2005. Essential Role of Vaccines in Brucellosis Control and Eradication Programs for Livestock. 4(6): 915–928.
- Olsen, S. and F. Tatum. 2010. Bovine Brucellosis, the Veterinary Clinics of North America. *Food Animal Practice*. 26(1): 15–27.

- Olsen, S.C. and M. V. Palmer. 2014. Advancement of Knowledge of Brucella Over the Past 50 Years, *Veterinary Pathology*. 51(6):1076–1089.
- Pacheco, W. A., M. E. Genovez, C. R. Pozzi, L. M. P. Silva, S. S. Azevedo, C. C. Did, R. M. Piatti, E. S. Pinheiro, V. Castro, S. Miyashiro and M. L. Gambarini. 2012. Excretion of *Brucella abortus* Vaccine B19 Strain during a Reproductive Cycle in Dairy Cows. *Brazilian Journal of Microbiology*. 594-601.
- Pappas, G., P. Papadimitriou, N. Aktridis, L. Christou, and E. V. Tsianos. 2006. The new Global Map of Human Brucellosis. *Lancet Infect Dis*. 6 : 91–99.
- Pasquevich, A., C. G. Samartino, L. M. Coria, S. M. Estein and A. Zwerdling. 2010. Self-Adjuvanting Vaccine against Systemic and Immune Response, and Is a Promising Activates Dendritic Cells In Vivo, Induces a Th1 Pathogen-Associated Molecular Pattern That Membrane Protein 16 is a New Bacterial and Oral Acquired Brucellosis. *Journal Immunology*. 184: 5200-5212.
- Perwitasari, R. 2010. Prevalensi dan Faktor Penyebab Brucellosis pada Sapi Potong di Kabupaten Kupang. [Thesis]. Fakultas Kedokteran Hewan. Universitas Gadjah Mada. Yogyakarta.
- Poester, F. P., K. Nielsen, L. E. Samartino and W. L. Yu. 2010. Diagnosis of Brucellosis. *Open Vet Sci J*. 4:46.
- Putra, A. A. G. 2013. Situasi Penyakit Hewan Menular Strategis pada Ruminansia Besar: Surveilans dan Monitoring. Lokakarya Nasional Ketersediaan IPTEK dalam Pengendalian Penyakit Strategis pada Ternak Ruminansia Besar. [http:// peternakan.litbang.pertanian.go.id/f](http://peternakan.litbang.pertanian.go.id/f).
- Qiagen. 2011. Procedur of Purification. Manual Book of Qiagen. USA.
- Queipo-Ortuño, M. I., J. D. Colmenero, J. M. Reguera, M. A. GarcíaOrdoñez, M. E. Pachón, M. Gonzalez and P. Morata. 2008. Rapid Diagnosis of Human Brucellosis by SYBR Green I-Based Real-Time PCR Assay and Melting Curve Analysis in Serum Samples. *Clin Microbiol Infect*. 11:713-718.
- Quinn, P. J., B. K. Markey, M. E. Carter, W. J. Donnelly and F. C. Leonar. 2002. *Veterinary Microbiology and Microbial Disease*. Backwell Publishing. Great Britain.
- Rambow-Larsen, A. A., G. Rajashekara, E. Petersen and G. Splitter. 2008. Putative Quorum-Sensing Regulator BlxR of *Brucella melitensis* Regulates Virulence Factors Including the Type IV Secretion System and Flagella. *J.Bacteriol*. 190:3274–3282.

- Rantam, F. A. 2007. Dasar-Dasar *Polymerase Chain Reaction*. Workshop Aplikasi PCR di Bidang Kesehatan dan Kedokteran. FKH Unair. Surabaya.
- Rappuoli, R. 2000. Reverse Vaccinology. *Current Opinion in Microbiology*, 3:445- 450.
- Rashkova, S., X. R. Zhou, J. Chen and P. J. Christie. 2000. Self-Assembly of the *Agrobacterium tumefaciens* VirB11 Traffic ATPase. *J Bacteriol.* 182(15): 4137-4145.
- Ratnasari, R., D. Handijatno, Suwarno dan F. A. Rantam. 2014. Determinan Antigen Gen *omp2a Brucella abortus* Isolat Lokal. *Acta Veterinaria Indonesiana.* 2(1):17-25.
- Rego, A. T., V. Chandran and G. Waksman. 2010. Two-Step and One-Step SecretioMechanisms in Gram-negative Bacteria: Contrasting the Type IV Secretion System and the Chaperone-Usher Pathway of Pilus biogenesis. *Biochem J.* 425: 475–488.
- Rolán, H. G., M. N. Xavier, R. L. Santos and R. M. Tsois. 2009. Natural Antibody Contributes to Host Defense against an Attenuated *Brucella abortus* virB Mutant. *Infect.Immun.* 77:3004–3013.
- Rossetti, C. A., K. L. Drake, P. Siddavatam, S. D. Lawhon, J. E. Nunes and T. Gull. 2013. Systems Biology Analysis of *Brucella* infected Peyer's patch Reveals Rapid Invasion with Modest Transient Perturbations of the Host Transcriptome. *PLoS ONE* 8:e81719.
- Sá, J. C., T. M. Silva, E. A. Costa, A. P. Silva, R. M. Tsois and T. A. Paixão. 2012. the virB-encoded TypeIV Secretion System is Critical Forest Ablishment of Infection and Persistence of *Brucella ovis* Infection in Mice. *Vet.Microbiol.* 159:130–140.
- Sagulenko, V., E. Sagulenko, S. Jakubowski, E. Spudich and P. J. Christie. 2001. VirB7 lipoprotein is exocellular and associates with the *Agrobacterium tumefaciens* T pilus. *J Bacteriol.* 183: 3642-3651.
- Sambrook and D.W. Russel. 2001. *Molecular Cloning: a Laboratory Manual* (3rd ed.). Cold Spring Harbor Laboratory Press. ISBN 0-87969-576-5. Chapter 8: in Vitro Amplification of DNA by the Polymerase Chain Reaction.
- Samkhan, P. D., D. H. Purnomo, R. Susanta, S. Ikaratri, Niati dan T. Parmini. 2011. Hasil Survey Seroepidemiologi Brucellosis pada Sapi Potong di Madura Tahap I – tahun 2011. Laporan Penelitian. Balai Bear veteriner, Wates, Yogyakarta.
- Samkhan, D. H. Susanta, R. Ikaratri, S. Niati, T. Parmini dan M. F. Isnaini. 2012. Survei Seroepidemiologi Brucellosis pada Sapi Perah di Wilayah Layanan

- Balai Besar Vetreiner Wates Tahun 2012. Buletin Laboratorium Veteriner Balai Besar Veteriner Wates Yogyakarta Vol. 12(4):19-22.
- Samkhan. 2014. Analisis Ekonomi Brucellosis dalam Menyongsong Penanggulangan, Pemberantasan, dan Pembebasan Brucellosis di Indonesia Tahun 2025. Buletin Laboratorium Veteriner. 14(1): 1-5.
- Sanchez-Trincado, J. L., M. G. Perosanz and P. A. Reche. 2017. Fundamentals and Methods for T- and B- Cell Epitope Prediction. Journal of Immunology Research. <https://doi.org/10.1155/2017/2680160>.
- Sangari, F. J., J. Agüero and J. M. Garcia-Lobo. 2000. the Genes for Erythritol Catabolism are Organized as an Inducible Operon in *Brucella abortus*. Microbiol. 146: 487-495.
- Saruji, S., S. Chusniati, H. E. Narumi dan E. R. S. Iman. 2014. Petunjuk Praktikum Mikrobiologi Veteriner Program S-1 Kedokteran Hewan. Universitas Airlangga. FKH. Surabaya.
- Schurig, G. G., N. Sriranganathan, and M. J. Corbel. 2002. Brucellosis Vaccines: Past, Present and Future. Veterinary Microbiology. 90 (1–4): 479–496.
- Sexton, J. A., J. S. Pinkner, R. Roth, J. E. Heuser, S. J. Hultgren and J. P. Vogel. 2004. the *Legionella pneumophila* PilT Homologue DotB exhibits ATPase Activity that is Critical for Intracellular Growth. J Bacteriol. 186: 1658-1666.
- Sieira, R., D. J. Comerci, D. O. Sánchez and R. A. Ugalde. 2000. a Homologue of an Operon Required for DNA Transferin Agrobacterium is Required in *Brucella abortus* for Virulence and Intracellular Multiplication. J.Bacteriol. 182, 4849–4855.doi:10.1128/JB.182.17.4849-4855.
- Sieira, R., D. J. Comerci, L. I. Pietrasanta and R. A. Ugalde. 2004. Integration Host Factor is Involved in Transcriptional Regulation of the *Brucella abortus* VirB operon. Mol.Microbiol. 54:808–822.
- Sieira, R., G. M. Arocena, L. Bukata, D. J. Comerci and R. A. Ugalde. 2010. Metabolic Control of Virulence Genes in *Brucella abortus*: HutC Coordinates VirB Expression and the Histidine Utilization Pathway by Direct Binding to Both Promoters. J.Bacteriol. 192:217–224.
- Sieira, R., G. M. Arocena, A. Zorreguieta, D. J. Comerci and R. A. Ugalde. 2012. a MarR-Type Regulator Directly Activates Transcription from the *Brucella abortus* VirB Promoter by Sharing a Redundant Role with HutC. J.Bacteriol. 194: 6431–6440.
- Smirnova, A. E., A. V. Varsin, T. N. Sandybaev, A. S. Klotchenko, A. M. Plotnikova, V. O. Chervyakova, R. A. Ransyrbay and I. O. Kiselev. 2013.

- Current Methods of Human and Animal Brucellosis Diagnostics. *Adv Infect Dis.* 3:177-184.
- Smith, E. P., C. N. Miller, R. Child, J. A. Cundiff and J. Celli. 2016. Postreplication Roles of the *Brucella* VirB Type IV Secretion System Uncovered via Conditional Expression of the VirB11 ATPase. *American Society for Microbiology.* 7(6) e01730-16.
- Song, T., C. Toma, N. Nakasone and M. Iwanaga. 2005. Sensitive and rapid detection of *Shigella* and enteroinvasive *Escherichia coli* by a loop-mediated isothermal amplification method. *FEMS Microbiol Lett.* 243:259-263.
- Splitter, G. A. 2003. Molecular Host-Pathogen Interaction in Brucellosis: Current Understanding and Future Approaches to Vaccine Development for Mice and Humans. *Clin Microbiol Rev.* 16: 65-78.
- Sriranganathan, N., M. N. Seleem, S. C. Olsen, L. E. Samartino, A. M. Whatmore, B. Bricker, D. O'Callaghan, S. M. Halling, O. R. Crasta, A. R. Wattam, A. Purkayastha, B. W. Sobral, E. E. Snyder, K. P. Williams, G. Xi Yu, T. A. Ficht, R. M. Roop II, P. deFigueiredo, S. M. Boyle, Y. He and R. M. Tsolis. 2009. *Brucella*. In *Genome Mapping and Genomics in Animal – Associated Microbes*. V. Nene and C. Kole Editions. Springer – Verlag 9 Berlin Heidelberg. Hal : 1 – 64.
- Starr, T., T. W. Ng, T. D. Wehrly, L. A. Knodler and J. Celli. 2008. *Brucella* Intracellular Replication Requires Trafficking through the Late Endosomal / Lysosomal Compartment. *Traffic.* 9: 678–694.
- Starr, T., R. Child, T. D. Wehrly, B. Hansen, S. Hwang and C. López-Otin. 2012. Selective Subversion of Autophagy Complexes Facilitates Completion of the *Brucella* Intracellular Cycle. *Cell Host Microbe.* 11:33–45.
- Sulaiman, I. dan B. Poermadjaya. 2004. Paper: Uji Lapang Keamanan Vaksin *Brucella abortus* Strain RB51 pada Sapi Perah di Kecamatan Cisarua, Bogor. Pertemuan Evaluasi Pemberantasan Brucellosis dan Pengawasan Lalulintas Ternak dan Daging Propinsi DKI Jakarta di Cianjur.
- Sulaiman, I. 2006. Bovine Brucellosis (Bakteriologi - Isolasi dan Identifikasi). Dalam *Pedoman Diagnosa Laboratorium Brucellosis Sapi – BBVet Wates*. Hal : 1 – 11.
- Sun, Y. H., H. G. Rolán, A. B. denHartigh, D. Sondervan and R. M. Tsolis. 2005. *Brucella abortus* VirB12 is Expressed during Infection but is not an Essential Component of the Type IV Secretion System. *Infect.Immun.* 73: 6048–6054.

- Surucuoglu, S., S. El, S. Ural, H. Gazi, S. Kurutepe, P. Taskiran and S. G. Yurtsever. 2009. Evaluation of Real-Time PCR Method for Rapid Diagnosis of Brucellosis with Different Clinical Manifestations. *Polish J Microbiol.* 58:15-18.
- Suwarno. 2007. Isolasi RNA/DNA untuk Tujuan Identifikasi Program/Full Genom Organisme dengan PCR. Workshop Aplikasi PCR di Bidang Kesehatan dan Kedokteran. FKH Unair. Surabaya.
- Syah, S. P., E. Saswiyanti dan I. S. Nurhayati. 2011. Brucellosis di Indonesia. Pascasarjana Kesehatan Masyarakat Veteriner. Institut Pertanian Bogor.
- Trangoni, M. D., A. K. Gioffre, M. E. Ceron Cucchi, K. C. Caimi, P. Ruybal, M. J. Zumarraga and S. L. Cravero. 2015. LAMP Technology: Rapid Identification of *Brucella* and *Mycobacterium avium* Subsp Paratuberculosis. *Braz J Microbiol.* 46:619-626.
- Trocter, M., C. Felisberto-Rodrigues, P. J. Christie and G. Waksman. 2014. Recent Advances in the Structural and Molecular Biology of Type IV Secretion systems. *Curr.Opin.Struct.Biol.* 27C:16–23.
- Todar, K. 2008. Textbook of Bacteriology. <http://www.textbookofbacteriology.net> [19 Maret 2019].
- Toth, I., P. Simerska and Y. Fujita. 2008. Recent Advances in Design and Synthesis of Self-Adjuvanting Lipopeptide Vaccines. *Int. J. Pept. Res. Ther.* 14:333–340.
- Van Regenmortel, M. H. 2009. “What is a B-Cell Epitope?,” *Methods in Molecular Biology.* 524: 3–20.
- Van Schaik, E. J., C. Chen, K. Mertens, M. M. Weber and J. E. Samuel. 2013. Molecular Pathogenesis of the Obligate Intracellular Bacterium *Coxiella burnetii*. *Nat.Rev.Microbiol.* 11:561–573.
- Vemulapalli, R., Y. He, L. S. Buccolo, S. M. Boyle, N. Sriranganathan and G. G. Schurig. 2000. Complementation of *Brucella abortus* RB51 with a Functional *wboA* Gene Results in O-Antigen Synthesis and Enhanced Vaccine Efficacy but No Change in Rough Phenotype and Attenuation. *Infection and Immunity.* 68(7): 3927-3932.
- Vita, R., J. A. Overton, J. A. Greenbaum, J. Ponomarenko, J. D. Clark and J. R. Cantrell. 2014. The Immune Epitope Database (IEDB) 3.0. *Nucleic Acids Res.* 43:D405-D412.
- Ward, D. V., O. Draper, J. R. Zupan and P. C. Zambryski. 2002. Peptide linkage mapping of the *Agrobacterium tumefaciens* vir-encoded type IV secretion

- system reveals protein subassemblies. *Proc Natl Acad Sci USA*. 99(17): 11493-11500.
- Wareth, G., F. Melzer, M. C. Elschner, H. Neubauer and U. Roesler. 2014. Detection of *Brucella melitensis* in Bovine Milk and Milk Products from Apparently Healthy Animals in Egypt by Real-Time PCR. *J Infect Dev Ctries*. 8:1339- 1343.
- Watarai, M., H. L. Andrews and R. R. Isberg. 2001. Formation of a fibrous structure on the surface of *Legionella pneumophila* associated with exposure of DotH and DotO proteins after intracellular growth. *Mol Microbiol* 39: 313-329.
- Witaningrum AM. 2013. Analisis Filogenetik Gen Penyandi Katabolisme Erythritol *Brucella abortus* Isolat Lokal. Tesis S2. Program Studi Ilmu Penyakit dan Kesehatan Masyarakat Veteriner, Fakultas Kedokteran Hewan, Universitas Airlangga. Surabaya. p51
- Xavier, M. N., M. G. Winter, A. M. Spees, K. Nguyen, V. L. Atluri, T. M. Silva, A. J. Baumler, W. Muller, R. L. Santos and R. M. Tsolis. 2013. CD⁴⁺ T Cell-Derived IL-10 Promotes *Brucella abortus* Persistence via Modulation of Macrophage Function. *PLoS Pathog*, 9:e1003454.
- Xiang, Z. and Y. He. 2009. Vaxign: a web-based Vaccine Target Design Program for Reverse Vaccinology. Elsevier. 1: 23-29.
- Yuan, Q., A. Carle, C. Gao, D. Sivanesan, K. Aly, C. Höppner, L. Krall, N. Domke and C. Baron. 2005. Identification of the VirB4-VirB8-VirB5-VirB2 pilus assembly sequence of type IV secretion systems. *J Biol Chem*. 280(28): 26349-26359.
- Zygmunt, M. S., S. D. Hagijs, J. V. Walker and P. H. Elzer. 2006. Identification of *Brucella melitensis* 16M genes required for bacterial survival in the caprine host. *Microbes Infect*. 8: 849–2854.