



#### REFERENCES

1. Brogden, K. A., and R. A. Packer, "Comparison of Pasteurella multocida Serotyping Systems," Am. J. Vet. Res., 40(9), 1332-1335, 1979.
2. กองผลิตชีวภัณฑ์ กรมปศุสัตว์ , "คำแนะนำการใช้วัคซีน, " บัณฑิตการพิมพ์, กรุงเทพมหานคร, 2527.
3. Unchitti, K., "Characterization of Pasteurella multocida Isolated from Human and Animal in Thailand", M.sc. thesis, Chulalongkorn University, 1989.
4. Bierer, B. W., and W. T. Derieux "Immunologic Response of Turkeys to an Avirulent Pasteurella multocida Vaccine in the Drinking Water," Poult. Sci., 51, 408-416, 1972.
5. Rice J. T., B. W. Bierer, and J. W. Dick, "Vaccination of Chickens through the Drinking Water with a Live Pasteurella multocida Vaccine," Poult. Sci., 58(1), 18-22, 1979.
6. Lamont, J. D., and R. Wichmann, "Observations on the Use of CU Strain Pasteurella multocida a Drinking Water Vaccine in California," in Proceedings, West Polt. Dis. Conf., 26, 17-20, 1977.
7. Schlink, G. T., and L. D. Olson, "Fowl Cholera Vaccination of Growing Turkeys with CU strain Via Route Other than Oral," Avian Dis., 31(1), 22-28, 1987.
8. Derieux, W. T., "Reaction of Bobwhites, Conturnix Quail, Guinea. Fowl, and Mallards to Avirulent and Pasteurella multocida," Avian Dis., 27(2), 539-541, 1983.
9. Walter Mannheim, "Family III Pasteurellaceae," Bergey's manual of Systemic Bacteriology (Krieg, N. R. ed.), Vol 1, pp. 550-557, William and Wilkin Co., Baltimore, 1st ed., 1984.

10. Namioka, S., "Biochemical Characteristic and Surotypes," Method in Microbiology (Bergan, T. and J. R. Norris, ed.), Vol 10, pp. 271-275, Academic Press Ltd., London, 1978.
11. Weaver, R. E., D. E. Hollis, and E. J. Bottone, "Gram Negative Fermentative Bacteria and Francisella tularensis," Manual of Clinical Microbiology (Lennette, E. H. ed.), pp. 309-329, American Society for Microbiology, Washington D. C., 4th ed., 1985.
12. Jawetz, E., Review of Medical Micobiology, pp. 251-254, Appleton & Lange, Norwalk, 7th ed., 1987.
13. Gutman, L. T., "Pasteurella, Actinobacillus, Streptobacillus, and Calymmatobacterium", Zinsser Microbiology (Joklik, W. K. et. al. ed), pp. 657-659, Appleton-Centuty-Crofts, Norwalk, 8th ed., 1984.
14. Elberg, S. S., and Cheng-Lee Ho, "Studies on Dissociation in Pasteurella multocida," J. Comp. Path. and Therp., 60, 41-50, 1950.
15. Carter, G. R., and C. H. Bigland, "Dissociation and Virulence in Strains of Pasteurella multocida Isolated from a Varity of Lesions," Can. J. Comp. Med. and Vet. Sci., 17, 473-479, 1953.
16. Carter, G. R., and P. Subronto, "Identification of Type D Strains of Pasteurella multocida with Acriflavine," Am. J. Vet. Res., 34, 293-294, 1973.
17. Rhoades, K. R., and R. B. Rimler, "Avain Pasteurellosis," Disease of Poultry (Hofstad, M. S. ed.), pp. 141-156, Iowa State University Press, Iowa, 8th ed., 1984.
18. Hofer, M., K. D. Flossmann, W. Erler, and H. Feist, "Nutrient Media for Culturing Pasteurella multocida," Vet. Bull., 53(1), 28, 1985.

19. Wessman, G. E., and G. Wessman, "Chemically Defined media for Pasteurella multocida, and Pasteurella urae, and a Comparison of Their Thiamine Requirements with Those of Pasteurella haemolytica," Can. J. Microbiol., 16, 751-757, 1970.
20. Lipipun, V., "Protective Study of Immunoglobulins Prepared from Whole Cell and Capsular Antigen of Pasteurella multocida," M. Sc. thesis, Chulalongkorn University, 1982.
21. Bailey, W. R., and E. G. Scott, Diagnostic Microbiology, pp. 150-151, The CV Mosby Company, St. Louis, 1966.
22. Cornelius, J. T., "An Investigation of the Serological Relationships of Twenty-six Strains of Pasteurella," J. Pathol. Bact., 32, 355-364, 1929.
23. Ochi, Y., "Studies on Hemorrhagic Septicemia Organisms. Report V. Correlations between Hemorrhagic Septicemia Organisms Isolated from Various Animals," J. Japan Soc. Vet. Sci., 12, 185-197, 1933.
24. Yusef, H. S., "A Contribution to Serological Classification of Pasteurella Strain," J. Pathol. Bact., 14, 203-206, 1935.
25. Rosenbusch, C. T., and I. A. Merchant, "A Studies of the Hemorrhagic Septicemia Pasteurella," J. Bact., 37, 69-89, 1939.
26. Little, P. A., and B. M. Lyon, "Demonstration of Serological Types within the Nonhemolytic Pasteurella," Am. J. Vet. Res., 4, 110-112, 1943.
27. Robert, R. S., "A Immunological Study of Pasteurella Septica," J. comp. Pathl., 57, 261-278, 1947.

28. Namioka, S., and M. Murata, "Serological Studies on Pasteurella multocida II Characteristics of Somatic(O) Antigen of the Organism," Cornell Vet., 51, 507-521, 1961.
29. Carter, G. R., "Some Characteristics of Type A Strains of Pasteurella multocida", Br. Vet. J., 114, 356-357, 1958.
30. Rimler, R. B., and K. R., "Serogroup F, a New Capsule Seregroup of Pasteurella multocida," J. Clin. Microbiol., 25(4), 615-618, 1987.
31. Heddleston, K. L., J. E. Gallagher, and P. A. Rebers, "Fowl Cholera: Gel Diffusion Precipitin Test for Serotyping Pasteurella multocida from Avain Species," Avian. Dis., 16, 925-936, 1972.
32. Brogden, K. A., K. R. Rhoades, and K. L. Heddleston, "New Scrotype of Pasteurella multocida Associated with Fowl Cholera," Avain Dis., 22(1), 185-190, 1978.
33. Brogden, K. A., and P. A. Rebers, "Serologic Examination of the Westphal-type Lipopolysaccharides of Pasteurella multocida," Am. J. Vet. Res., 39(10), 1680-1682, 1978.
34. Carter, G. R., "Proposed Modification of the Serological Classification of Pasteurella multocida," Vet. Rec., 75, 1264, 1963.
35. Carter, G. R., "A New Serological Type of Pasteurella multocida from Central Africa," Vet. Rec., 73, 1052, 1961.
36. Namioka, S., and M. Murata, "Serological Studies on Pasteurella multocida I. A Simplified Method for Capsule Typing of the Organism," Cornell Vet., 51, 498-507, 1961.
37. Namioka, S., "Antigenic Analysis of Pasteurella multocida," Natl. Inst. Anim. Health. Q., 10 suppl., 97-108, 1970.

24. Hudson, J. R., "Pasteurellosis," Infectious Diseases of Animals: Disease due to Bacteria (Stable forth, A. W., and I. A. Golloway, eds.), vol. 2, pp. 413-436, Butterworth Scientific Publications, London, 1959.
38. Namioka, S., and M. Murata, "Serological Studies on Pasteurella multocida III Anginogenic Analysis of Cultures Isolated from Various Animals," Cornell Vet., 51, 522-528, 1961.
39. Carter, G. R., and M. M. Chengappa, "Proceeding of the 24th Meeting of the American Association of Veterinary Laboratory Diagnosticians," St. Louis USA., pp.37-42, 1981.
40. Carter, G. R., and E. C. Annau, "Isolation of Polysaccharide from Colonial Variants of Pasteurella multocida," Am. J. Vet. Res., 14, 475-478, 1953.
41. Prince, G. H., and J. E. Smith, "Antigenic Studies on Pasteurella multocida I Identification and Nomenclature of the Soluble Antigens of a Bovine Hemorrhagic Septicemia Strain," J. Comp. Pathol., 76, 303-314, 1966.
42. Prince, G. H. and J. E. Smith, "Antigenic Studies on Pasteurella multocida. II. Relationships with Other Gram-negative Species," J. Comp. Pathol., 76, 314-329, 1966.
43. Prince, G. H., and J. E. Smith, "Antigenic Studies on Pasteurella multocida. III. Relationship between Strains of Pasteurella multocida," J. Comp. Pathol., 76, 321-332, 1966.
44. Carter, G. R., "Serological Classification of Pasteurella" Vet. Rec., 122(31), 311, 1988.
45. Bain, R. V. S., "Studies on Haemorrhagic septicemia of cattle. IV. A Preliminary Examination of the Antigens of Pasteurella

- multocida Type 1," Br. Vet. J., 111, 492-498, 1955.
46. Mukkur, T. K. S., "Demonstration of Cross Protection between Pasteurella multocida Type A and Pasteurella hemolytica Type 1," Infect. Immun., 18, 583-585, 1977.
  47. Mukkur, T. K. S., "Immunogenicity of a Chaotropically Extracted Protective Antigens, of Pasteurella multocida Type A (Bovin Origin) Against Experimental Pasteurellosis in Mice," J. Gen. Microb., 113, 37-43, 1979.
  48. Mukkur, T. K. S., and P. R. Nilakantan, "Preliminary Characterization of the Crude Capsular Extracts of Pasteurella multocida var. Bovine, Type 1 in Phase 1," Cornell Vet., 42, 289-296, 1972.
  49. Gaunt, G., R. Moffat, and T. K. S. Mukkur, "Fowl Cholera: Immunization of Chickens with Potassium thiocyanate (KSCN) Extract of Pasteurella multocida Sero type 3," Avian Dis., 21(4), 543-548, 1977.
  50. Ryu, H., and M. L. Kaeberle, "Immunogenicity of Potassium thiocyanate Extract of Type A Pasteurella multocida," Vet. Microb., 11(4), 373-385, 1986.
  51. Mckinney, K. L., and P. A. Rebers, "Purification of Pasteurella multocida Antigens by Ultracentrifugation and Isoelectrofocusing," Can. J. Microbiol., 28, 511-521, 1982.
  52. Mekinney, K. L., P.A. Rebers, and R. B. Rimler, "Immunogenicity of Potassium thiocyanate Extracted and Electrofocused Pasteurella multocida X-731 Antigens in Chickens and Mice," Can. J. Microbiol., 28, 1219-1225, 1982.
  53. Borisenkova, A. N., "Role of Cellular Components of Pasteurella multocida in the Formation of Immunity to Pasteurellosis in Fowl," Vet. Bull., 44(9), 723, 1976.

54. Pen, C. W., and L. K. Nagy, "Isolation of a Protective, Non-toxic Capsular Antigen from Pasteurella multocida, Type B and E, Res. Vet. Sci., 20, 90-96, 1976.
55. Gilmour, N. J. L., W. B. Martin, J. M. Sharp, D. A. Thompson, and P. W. Wells, "The Development of Vaccine Against Pneumonic Pasteurellosis in Sheep," Vet. Rec., 104, 15, 1979.
56. Maheswaran, S. K., G. H. Johnsin, and B. S. Pomeroy, "Studies on Pasteurella multocida. II. The Capsular polysaccharides from Turkey Isolates," Avian Dis., 17(4), 705-716, 1973.
57. Kodama, H., M. Matsumoto, and L. M. Snow, "Immunogenicity of Capsular Antigens of Pasteurella multocida in Turkeys," Am. J. Vet. Res., Vol 42(10), 1838-1841, 1981.
58. Syuto, B., and M. Matsumoto, "Purification of a Protective Antigen from a Saline Extract of Pasteurella multocida," Infect. Immune., 37(3), 1218-1227, 1982.
59. Srivastava, K. K., and J. W. Foster, "Characterization of an Immunogenic Fraction of Pasteurella multocida Culture Filtrates," Can. J. Microbiol., 23, 197-201, 1977.
60. Rebbers, P. A., and K. L. Heddleston, "Immunologic Comparison of Westphal-type Lipopolysaccharides and Free Endotoxins from an Encapsulated and a Nonencapsulated Avian Strain of Pasteurella multocida," Am. J. Vet. Res., 35(4), 555-560, 1974.
61. Bain, R. V. S., and K. W. Knox, "The Antigens of Pasteurella Multocida type I : II Lipopolysaccharides," Immunology, 14, 122-129, 1961.
62. Reber, P. A., M. Phillipps, R. Rimler, R. A. Boykins, and K. R. Rhoades, "Immunizing Properties of Westphal Lipopolysac

- charide, from an Avian Strain of Pasteurella multocida," Am. J. Vet. Rec., 41, 1650-1654, 1980.
63. Ganfield, d. F., P. A. Rebers, and K. L. Heddleston, "Immunogenic and Toxic Properties of a Purified Lipopolysaccharidprotein Complex from Pasteurella multocida," Infect. Immun., 14, 990-999, 1976.
64. Kodama, H., M. Matsumoto, J. I. Fuguay, and B. Syuto, "Soluble Fractions of Pasteurella multocida: Their Protective Qualities Against Fowl Cholera in Turkey," Avian Dis., 27(1), 283-291, 1983.
65. Bhasin, J. L., and L. Lapointe-shaw, "Antigenic Analysis of Pasteurella multocida (Serotype 1) By Cross Immunoelectrophoresis: Characterization of Cytoplasmic and Cell Envelope Associated Antigens," Can. J. Microbiol., 26, 676-689, 1980.
66. Bhasin, J. L., and L. Lapointe-shaw, "Antigenic Analysis of Pasteurella multocida (Serotype 1) By Crossed Immunoelectrophoresis Characterization of Whole Cell Associated Antigens," Can. J. Microbiol., 26, 1392-1402, 1980.
67. Carter, G. R., and R. V. S. Bain, "Pasteurellosis (Pasteurella multocida) : A Review Stressing Recent Developments," Vet. Rev. and Annotat., 6, 105-128, 1960.
68. Carter, G. R., "Further Observation on Typing Pasteurella multocida by the Indirect Hemagglutination," Can. J. Comp. Med., 20, 238-240, 1962.
69. Carter, G. R., "Studies on Pasteurella multocida. III. A Serological Survey of Bovine and Porcine Strains from Various Parts of the World," Am. J. Vet. Res., 18, 437-440, 1957.



70. Projoharjono, S., G. R. Carter, and G. H. Conner, "Serologic Study of Bovin Strains of Pasteurella multocida," Am. J. Vet. Res., 35(1), 111-114, 1974.
71. Chandrasekaran, S., K. R. Rhoades, and A. Sotoodehnia, "Pasteurella multocida type B : 2 Isolated from Poultry in Iran," Vet. Rec., 117, 155, 1985.
72. Rhoades, K. R., and R. B. Rimler, "Capsular Groups of Pasteurella multocida Isolated from Avian Hosts," Avian Dis., 31, 895-898, 1987.
73. Curtis, P., "Poultry Disease : Short Notes Containing Strategic Information for Veterinary Students," 42-43, Liverpool University Press, London, 1987.
74. Dua, S. K., and S. K. Maheswaran, "Studies on Pasteurella multocida VI Nature of Systemic Immunity and Analysis of the Correlation between levels of Immunity Induced by Fowl Cholera Vaccines and Protection against Challenge," Avian Dis., 24(4), 748-764, 1978.
75. Gorderham, K. R., "Disease of Domestic duck," Poultry Disease (Godon R. F. and F. T. W. Jordan, eds,) pp. 289, Bailliere Tindall, London, 2nd ed. 1982.
76. Whiteman, C. E., and A. A. Bickford, "Fowl Cholera," Avian Disease Manual (Barns, H. J. ed.), pp. 86-90, Colorado State University, Texas, 1979.
77. Heddleston, K. L., and P. A. Rebers, "Fowl Immunity Induced in Chickens and Turkeys by Oral Administration of Killed Pasteurella multocida," Avian Dis., 12, 129-134, 1968.
78. Bierer, B. W., and T. H. Eleazer, "Continuous Use of a Live Vaccine in the Drinking Water Against Fowl Cholera Infection in Turkeys," Poult. Sci., 47, 1258-1260, 1968.

79. Heddleston, K. L., "Studies on Pasteurellosis V. Two Immunogenic Types of Pasteurella multocida Associated with Fowl Cholera," Avian Dis., 6, 315-321, 1962.
80. Heddleston, K. L., P. A. Rebers, and G. Wessman, "Fowl Cholera : Immunologic and Serologic Response to Live Pasteurella multocida Vaccine Administered in the Drinking Water," Poult. Sci., 54, 217-221, 1975.
81. Maheswaran, K. K., J. R. McDowell, and B. S. Pomeroy, "Studies on Pasteurella multocida, Efficacy of an Avirulent Mutant as a live Vaccine in Turkeys," Avian Dis., 17, 396-405, 1973.
82. Singer, N., and M. Malkinson, "An Avirulent Live Pasteurella multocida Vaccine for Drinking Water and Aerosol Administration Against Turkey Cholera," Avian Patho., 8, 391-395, 1979.
83. Heddleston, K. L., and P. A. Rebers, "Fowl Cholera : Cross-immunity Induced in Turkeys with Formalin-killed in Vitro-propagated Pasteurella multocida," Avian Dis., 16, 578-585, 1972.
84. Rimler, R. B., P. A. Rebers, and K. R. Rhoades, "Fowl Cholera : Cross-protection Induced by Pasteurella multocida Separated from Infected Turkey Blood," Avian Dis., 23, 730-741, 1979.
85. Rimler, R. B., and K. R. Rhoades, "Lysates of Turkey-grown Pasteurella multocida : Protection Against Homologous and Heterologous Serotype Challenge Exposures," Am. J. Vet. Res., 42, 2117-2121, 1981.
86. Rimler, R. B., "Cross-Protection Factor(s) of Pasteurella multocida : Passive Immunization of Turkeys Against Fowl Cholera Caused by Different Serotypes," Avian

- Dis., 31, 884-887, 1987.
87. Bierer, B. W., and W. T. Derieux, "Efforts to Transmit and to Enhance the Virulence of an Avirulent Strain of Pasteurella multocida in Turkeys," Poult. Sci., 52, 1510-1516, 1973.
  88. Coates, S. R., M. M. Jensen, and E. S. Brown, "The Response of Turkeys to Varying Doses of Live Oral Pasteurella multocida Vaccine," Poult. Sci., 56, 273-276, 1977.
  89. Bierer, B. W., "An Evaluation of Effect, of Various Concentrations of the Chemson University Pasteurella multocida Drinking Water Vaccine on the Immune Response Against Fowl Cholera Disease in Turkeys Poult. Sci., 56, 327-330, 1977.
  90. Bierer, B. W. and W. T. Serieux, "Immunogenic Response of Turkey Poults of Various Ages to an Avirulent Pasteurella multocida Vaccine in the Drinking Water," Poultry Sci., 54, 784-787, 1975.
  91. Olson, L. D., and G. T. Schlink, "Onset and Duration of Immunity and Minimum Dosage with CU Cholera Vaccine in Turkeys Via Drinking Water," Avian Dis., 30(1), 87-92, 1986.
  92. Derieux, W. T., "Response of Young Chickens and Turkeys to Virulent and Avirulent Pasteurella multocida Administered by Various Routes," Avian Dis., 22(1), 131-139, 1978.
  93. Derieux, W. T., and J. W. Dick, "The Response of Broiler Breeder Chickens to Parenteral Administration of Avirulent Pasteurella multocida," Avian Dis., 24(3), 743-750, 1980.

94. Due, S. K., and S. K. Maheswaran, "Studies on Pasteurella multocida VII Dynamics and Temporal Development of local Humoral Immunity induced by a Live Avirulent Fowl Cholera Vaccine," Avian Dis., 22(4), 771-777, 1978.
95. Schlink, G. T., and L. D. Olson, "Vaccination of Turkey Breeder Hens and Toms for Fowl Cholera with CU Strain," Avian Dis., 51 (1), 29-38, 1987.
96. Simensen, E., L. D. Olson, and G. L. Hahn, "Effects of High and Low. Environmental Temperatures on Clinical Course of Fowl Cholera in Turkeys," Avian Dis., 24,816-832, 1980.
97. Bhasin, J. L., and E. L. Biberstein, "Fowl Cholera in Turkeys the Efficacy of Adjuvant Bacterin," Avian Dis., 12, 159-168, 1968.
98. Heddleston, K. L., and R. C. Resinger, "Studies on Pasteurellosis III. Control of Experimental Fowl Cholera in Chickens and Turkeys with an Emulsified killed Vaccine," Avian Dis., 3, 397-404, 1959.
99. Hofacre, C. L. and J. R. Glisson, "A Serotypic Survey of Pasteurella multocida Isolated from Poultry," Avian Dis., 30(3), 632-633, 1986.
100. Lee, M. D., R. E. Wooley, J. R. Glisson, and J. Brown, "Comparison of Pasteurella multocida Serotype 3, 4 Isolates from Turkeys with Fowl Cholera," Avian Dis., 32, 501-508, 1988.
101. Heddleston, K. L., "Pasteurella multocida Isolation and Identification of Avian Pathogens (Hitcher, S. B., and C. H. Domermuth, eds.), pp. 38-43, Iowa State, University Press, Iowa, 1978.

102. Alexander, A. M., and M. A. Saltys, "Relationship of Serum Agglutinins to Protective Immunity Produced in Turkeys Immunized Against Fowl Cholera," J. Comp. Pathol., 83, 191-198, 1973.
103. Wongsawang, S., S. Thoongsuwan, N. Chaisiri, K. Poonsuk and K. Saitanu, "Antigenic study of Pasteurella multocida by Double Gel Diffusion Test, Immunoelectrophoresis and Crossed Immunoelectrophoresis," Animal Vaccine Research Unit, Chulalongkorn University, Bangkok, 1987.
104. Lowry, O. H., M. J. Roebeough, A. L. Fan, and R. J. Randall, "Protein Measurement with the Folinphenol Reagent," J. Biol. chem., 193, 265-276.
105. Nathauson, R. M., M. B. Hofstad, and E. L. Jeska, "Pasteurella multocida : Antibody Mediated Resistance to Virulent Challenge Exposure in Vaccinated Turkeys," Am. J. Vet. Res., 41, 1285-1287, 1980.
106. Relman, K., and I. Lind, "An Indirect Haemagglutination Test for Demonstration of Gonococcal Antibody Using Gonococcal Pili as Antigen," Acta Patho. Microbiol. Scand., 85, 115-122, 1977.
107. Pongsopida, A., S. Virunhaphol, K. Saitanu, N. Charujijda and S. Thoongsuwan, "The Growth of Pasteurella multocida in Different Liquid Media," Research Report : Fowl Cholera and Duck Plaque Vaccine, 3, Animal Vaccine Research Unit, Chulalongkorn University, Bangkok, 1987.
108. Juangpanich, S., N. Lertlimchalalai and O. Promsorn, "A Study on Growth Curve of Pasteurella multocida

- Serotype 8:A", J. Thai. Vet. Med. Assoc., 38(3), 23-26, 1987.
109. Nielsen, R., "Pleuropneumonia of Swine Caused by *Haemophilus parahaemolyticus* : Studies on the Protection Obtained by Vaccination", Nord. Vet. Med., 28, 337-348, 1976.
110. Confer, A. W., R. J. Panciera, R. E. Corstvet, J. A. Rummage, and R. W. Fulton, "Bovine Pneumonic Pasteurellosis : Effect of Culture Age of *Pasteurella haemolytica* Used as a Live Vaccine", Am. J. Vet. Res., 45(12), 2543-2545, 1984.
111. Rutter, J. M., and P. D. Luther, "Cell Culture Assay for Toxigenic *Pasteurella multocida* from Atrophic Rhinitis of Pigs", Vet. Rec., 114(16), 393-396, 1984.
112. Simensen E., L. D. Olson, and G. L. Hahn, "Effects of High and Low Environmental Temperatures on Clinical Course of Fowl Cholera in Turkeys", Avian. Dis., 24, 816-832, 1980.
113. Flossmann, K. D., G. Muller, and P. Heilmann, "Use of Radioactively Labelled Bacteria in Animal Experiments. V. Fate of Orally Administered, Radioactively Labelled *Pasteurella multocida* in Mice", Vet. Bull., Vol. 52, No. 5, 263, London, 1972.
114. Sulong, A. K., and S. K. Maheswaran, "Studies on *Pasteurella multocida* IV. Immunofluorescence Detection of the Organisms in Spleen and Lungs of Turkeys Vaccinated with Live Oral Vaccines", Vet. Microbiol., 1(1), 3-14, 1976.
115. Schlink, G. T., "Immunogenesis of Fowl Cholera in Turkeys", Dissertation Abstracts International, Missouri, 1983.

116. Derieux, W. T., "Effect of Various Feed Additives on Immune Response of Turkeys Vaccinated with Live Pasteurella multocida in Drinking Water", Avian Dis., 24(2), 481-485, 1980.
117. Carter, G. R., "Pasteurellosis : Pasteurella multocida and Pasteurella hemolytica", Advances in Veterinary Science, (Brandly, C. A., and Cornelius eds.), pp. 321-379, Academic Press Inc., New York, 1967.
118. Heddleston, K. L., and L. P. Watko, "Fowl Cholera Comparison of Serologic and Immunogenic Responses of Chickens and Turkeys", Avian Dis., 9, 367-377, 1965.
119. Bhasin, J. L., and E. L. Biberstein, "Fowl Cholera in Turkeys : The Efficacy of Adjuvant Bacterins", Avian Dis., 12, 159-168, 1968.
120. Pongsopida, A., S. Thoongsuwan, V. Lipipun, K. Saitanu, S. Wongsawang, and K. Poosuk, "The Relationship of Agglutinating Antibody to the Protective Immunity in Duck Produced by Fowl Cholera Vaccines", Research Report : Fowl Cholera and Duck Plaque Vaccine, 2, Animal Vaccine Research Unit, Chulalongkorn University, Bangkok, 1987.
121. Carter, G. R., "Pasteurellosis : Pasteurella multocida and Pasteurella hemolytica", Adv. Vet. Sci., 11, 321-379, 1967.
122. Woolcock, J. B., and F. M. Collins, "Studies of the Immune Mechanism in Pasteurella multocida Infected Mice", Infect. Immun., 13, 949-958, 1976.
123. Collins, F. M., and J. B. Woolcock, "Immune Response to Pasteurella multocida in the Mouse", J. Reticuloendo-

- thel. Soc., 19, 311-321, 1976.
124. Baba, T., T. Ando, and M. Nukina, "Effect of Bursectomy and Thymectomy on Pasteurella multocida Infection in Chickens", J. Med. Microbiol., 11, 281-288, 1987.
125. Baba, T., "Cell-mediated Immune Protection in Chicken Against Pasteurella multocida", Res. Vet. Sci., 36, 2250-230, 1984.



## APPENDIX

## 1. Preparation of Flesh-liver-duck broth

Flesh-liver-duck basal medium	800 ml
Dextrose	4 gm
Tryptose	1.6 gm
Hank's part A	25 ml
Hank's part B	25 ml

Adjust pH to 7.0-7.2, Sterile by autoclave at 121°c 15 minutes

1.1 FLD basal medium : Mixi ground duck flesh 360 gm, duck liver 40 gm and distilled water 500 ml and boil for 15 minutes, then the supernatant is separated and adjusted with distilled water to 800 ml.

## 1.2 Hank's part A :

Sodium chloride	80 gm
Potassium chloride hepta.hydrate	4 gm
Magnesium sulfate hexa.hydrate	1 gm
Calcium chloride	1.4 gm

## 1.3 Hank's part B :

Disodium hydrogen phosphate	0.6 gm
Potassium dihydrogen phosphate	0.6 gm
Distilled water	500 ml

## 2. Preparation of blood agar

## Preparation of nutrient agar

Peptone	5 gm
Beef extract	3 gm
Bacto agar	20 gm
Sodium Chloride	5 gm
Distilled water to	1000 ml

Adjust pH to  $6.9 \pm 0.1$ , Sterile by autoclave at 121°c 15 minutes. Cool the nutrient agar to 45°c, add sheep blood to 5%

## 3. Preparation of Phosphate buffer saline pH 7.2 :

Sodium chloride	7.2 gm
Disodium hydrogen phosphate	3.7 gm
Potassium dihydrogen phosphate	0.43 gm
Distilled water	1000 ml



## CURRICULUM VITAE

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