

## เอกสารอ้างอิง

กรองแก้ว สุภวัฒน์, ศรีวรรณ หัตยานานนท์ และ มยุรา กุสุมภ์. 2540ก. การปรากฏตัวของเชื้ออุจจาระร่วงอย่างแรงสายพันธุ์ใหม่ “*Vibrio cholerae* O139” ในประเทศไทย. ว. กรมวิทยาศาสตร์การแพทย์. 39:261-270.

กรองแก้ว สุภวัฒน์ และ ศรีวรรณ หัตยานานนท์. 2540ข. การเปลี่ยนแปลงซีโรทัยป์ของเชื้อ *Vibrio cholerae* ที่ตรวจพบระหว่าง พ.ศ. 2523-2539. ว. กรมวิทยาศาสตร์การแพทย์. 39:271-277.

กลุ่มงานบัคทีเรียทางการแพทย์ กรมวิทยาศาสตร์การแพทย์. 2541. ความไวของเชื้อโรคอุจจาระร่วงอย่างแรงต่อยาต้านจุลชีพ ตุลาคม 2540 – มกราคม 2541. เอกสารประกอบ การประชุมเชิงปฏิบัติการ เรื่อง การทดสอบความไวของเชื้อโรคอุจจาระร่วงอย่างแรงต่อยาต้านจุลชีพ วันที่ 12-13 มีนาคม 2541.

กองพยาธิวิทยาคลินิก กรมวิทยาศาสตร์การแพทย์. 2538. รายงานสถานการณ์โรคอุจจาระร่วงอย่างแรงในประเทศไทย พ.ศ. 2533-2538. เอกสารอัดสำเนา.

กองระบาดวิทยา กระทรวงสาธารณสุข. 2531. สรุปรายงานการเฝ้าระวังโรค ปี พ.ศ. 2531. 58-63.

ธวัช ฉายนิยโยธิน, สุภชัย ฤกษ์งาม, สุภมิตร ชุณห์สุทธิวัฒน์ และ จุฑารัตน์ ถาวรนนท์. 2542. คู่มือการป้องกันและควบคุมโรคอุจจาระร่วงอย่างแรง. พิมพ์ครั้งที่ 1. กรุงเทพมหานคร : ชุมนุมสหกรณ์การเกษตรแห่งประเทศไทย.

- ปริศนา วงศ์วีรจันทร์, แสงชัย นทีวรนาถ, เชิดชัย แก้วป่า, ลักษณะ ลือประเสริฐ, ลีลาวดี แสงสุก และ เตือนใจ วัฒนา. 2540. การศึกษาการดื้อยาปฏิชีวนะของเชื้อ *V. cholerae* O139 เปรียบเทียบกับเชื้อ *V. cholerae* Ogawa Type ในจังหวัดขอนแก่น. ว.วิชาการสาธารณสุข. 6:66-74.
- ประเสริฐ ทองเจริญ. 2516. การระบาดของอหิวาตกโรคในประเทศไทย. ว.สุขภาพ. 2 :101-108.
- มยุรา กุสุมภ์. 2538. *Vibrio cholerae* O139 : เชื้อโรคอุจจาระร่วงอย่างแรงสายพันธุ์ใหม่. ว.โรคติดต่อ. 21:64-69.
- วิชัย โชควิวัฒน์. 2541. เหลียวหลังแลหน้าอหิวาตกโรค. จุลสารกรมควบคุมโรคติดต่อ. 2:2-3.
- วัชรวิ อรรถทิพพหุลคุณ และมนตรี อรรถทิพพหุลคุณ. 2536. ทฤษฎีและการประยุกต์ใช้ ประโยชน์ PCR Technology. พิมพ์ครั้งที่ 1. กรุงเทพมหานคร. โรงพิมพ์เรือนแก้ว การพิมพ์.
- ศรีวรรณ หัตยานานนท์, สมใจ ไผ่สมบุญ, สุรางค์ เดชศิริเลิศ และกรองแก้ว สุภวัฒน์. 2544. การดื้อยาของเชื้อก่อโรคอุจจาระร่วงอย่างแรงในประเทศไทย. รวมบทความประกอบการประชุมวิชาการระดับชาติ ครั้งที่ 1 เรื่อง การดื้อยาของเชื้อและยาต้านจุลชีพ วันที่ 16 – 17 สิงหาคม 2544. 88.
- ศิริชัย วงศ์วัฒนไพบูลย์ และ สมาน สยมภูจินันท์. 2544. การศึกษาสถานการณ์การเปลี่ยนแปลง serotype ของเชื้อ *Vibrio cholerae* O1, biotype El Tor ปี พ.ศ. 2543. รายงานการเฝ้าระวังโรคประจำเดือน. 32:109-117.

- ศิริศักดิ์ ธีติติลภรัตน์. 2542. โรคอุจจาระร่วงจาก *Vibrio cholerae* O139 ในประเทศไทย. รวมบทคัดย่อผลงานวิชาการแพทย์โครงการ Field epidemiology training program(FETP) : งานสัมมนาระบาดวิทยาแห่งชาติครั้งที่ 1-14 (พ.ศ. 2524-2539).28.
- สมศักดิ์ วัฒนาศรี. 2542. โรคอุจจาระร่วงที่เกิดจากการติดเชื้อ Multiple antimicrobial resistant *Vibrio cholerae* (MARV) ในหอผู้ป่วยกุมารเวชกรรม. รวมบทคัดย่อผลงานวิชาการแพทย์โครงการ Field epidemiology training program (FETP) : งานสัมมนาระบาดวิทยาแห่งชาติครั้งที่ 1-14 (พ.ศ. 2524-2539).97.
- อรรษา สุตเชียรกุล. 2541. โรคติดเชื้อ. พิมพ์ครั้งที่ 2. กรุงเทพฯ: โฮลิสติก แพ็บลิชซิ่ง จำกัด.
- Abbott, S.A., Cheung, W.K.W., Portoni, B.A. and Janda, J.M. 1992. Isolation of vibriostatic agent O/129 resistant *Vibrio cholerae* non-O1 from patient with gastroenteritis. J. Clin. Microbiol. 30:1598-1599.
- Aidara, A., Koblavi, S., Boye, C.S., Raphenon, G., Gassama, A., Grimont, F. and Grimont, P.A. 1998. Phenotypic and genotypic characterization of *Vibrio cholerae* isolates from a recent cholera outbreak in Senegal: comparison with isolates from Guinea-Bissau. Am. Trop. Med. Hyg. 58:163-167.
- Albert, M.J., Ansaruzzaman, M., Bardhan, P.K., Faruque, A.S.G., Faruque, S.M., Islam, M.S., Mahalanabis, D., Sack, R.B., Salam, M.A., Siddique, A.K., Yunus, M.D. and Zaman, K.1993. Large epidemic of cholera-like disease in Bangladesh caused by *Vibrio cholerae* O139 synonym Bengal. Lancet. 342:387-390.

- Albert, M.J., Bhuiyan, N.A., Talukder, K.A., Faruque, A.S.G., Nahar, S., Faruque, S.M., Ansaruzzaman, M. and Rahman. M. 1997. Phenotypic and genotypic changes in *Vibrio cholerae* O139 Bengal. J. Clin. Microbiol. 35:2588-2592.
- Almeida, R.J., Hickman-Brenner, F.W., Sowers, E.G., Puhr, N.D., Farmer, J.J. and Wachsmuth, I.K. 1990. Comparison of a latex agglutination assay and an enzyme-linked immunosorbent assay for detecting cholera toxin. J. Clin. Microbiol. 28:128-130.
- Arita, M., Takeda, T., Honda, T., and Miwatani, T. 1986. Purification and characterization of *Vibrio cholerae* non-O1 heat-stable enterotoxin. Infect. Immun. 52:45-49.
- Attridge, S.R. and Rowley, D. 1990. Cholera. In : Smith, G.R. and Easmon, C.S.F. (eds.). Principles of Bacteriology, Virology and Immunity, 8<sup>th</sup> Vol III. p.459-468. Philadelphia: B.C. Decker.
- Attridge, S.R., Dearlove, C., Beyer, L., Bosch, L.V.D., Howles, A., Hackett, J., Morona, R., LaBrooy, J. and Rowley, D. 1991. Characterization and immunogenicity of EX880, a *Salmonella typhi* Ty21a-based clone which produces *Vibrio cholerae* O antigen. Infect. Immun. 59: 2279-2284.
- Bagchi, K., Echeverria, P., Arthur, J.D., Sethabutr, O., Serichantalergs, O. and Hoge, C.W. 1993. Epidemic of diarrhea caused by *Vibrio cholerae* non-O1 that produced heat-stable toxin among Khmers in a camp in Thailand. J. Clin. Microbiol. 31:1315-1317.

- Baine, W.B., Mazzotti, M., Greco, D., Izzo, E., Zampieri, A., Angioni, G., DiGrola, M., Gangarosa, E.J. and Pocchiari, F. 1974. Epidemiology of cholera in Italy in 1973. *Lancet*. ii:1370-1374.
- Barrett, T.J. and Blake, P.A. 1981. Epidemiological usefulness of changes in hemolytic activity of *Vibrio cholerae* biotype El Tor during the seventh pandemic. *J. Clin. Microbiol.* 13:126-129.
- Baudry, B., Fasano, A., Ketley, J. and Kaper, J.B. 1992. Cloning of a gene (*zot*) encoding a new toxin produced by *Vibrio cholerae*. *Infect. Immun.* 60:428-434.
- Benenson, A.S. 1991. Cholera. In : Evans, A.S. and Brachman, P.S. (eds.). *Bacterial Infections of Humans, Epidemiology and Control.*, 2<sup>nd</sup>. p.207-225. New York: Plenum.
- Bennish M.L. 1994. Cholera: pathophysiology, clinical features, and treatment. In : Wachsmuth, I.K., Blake, P., and Olsvik, O. (eds.). *Vibrio cholerae* and cholera: Molecular to Global Perspectives. p. 229-255. Washington, D.C., ASM Press.
- Bik, E.M., Bunschoten, A.E., Gouw, R.D. and Mooi, F.R. 1995. Genesis of the novel epidemic *Vibrio cholerae* O139 strain : evidence for horizontal transfer of genes involved in polysaccharide synthesis. *EMBO*.14:209-216.
- Boyd, E.F. and Waldor, M.K. 1999. Alternative mechanism of cholera toxin acquisition by *Vibrio cholerae* generalized transduction of CTX $\phi$  by bacteriophage CP-T1. *Infect. Immun.* 67:5898-5905.

- Brayton, P.R. and Colwell, R.R. 1987a. Fluorescent antibody staining method for enumeration of viable environmental *Vibrio cholerae* O1. J. Microbiol. Methods. 6:309-314.
- Brayton, P.R., Tamplin, M.L., Huq, A. and Colwell, R.R.. 1987b. Enumeration of *Vibrio cholerae* O1 in Bangladesh waters by fluorescent-antibody direct viable count. Appl. Environ. Microbiol. 53:2862-2865.
- Brown, M.H. and Manning, P.A. 1985. Haemolysin genes of *Vibrio cholerae*: presence of homologous DNA in non-haemolytic O1 and haemolytic non-O1 strains. FEMS Microbiol. Lett. 30:197-201.
- Brown, R.C. and Taylor, R.K. 1995. Organization of *tcp*, *acf* and *toxT* genes within a ToxT-dependent operon. Mol. Microbiol. 16:425-439.
- Caldini, G., Neri, A., Cresti, S., Boddi, V., Rossolini, G.M. and Lanciotti, E. 1997. High prevalence of *Vibrio cholerae* non-O1 carrying heat-stable-enterotoxin-encoding genes among *Vibrio* isolates from a temperate-climate river basin of central Italy. Appl. Environ. Microbiol. 63:2934-2939.
- Centers for Disease Control. 1991. Cholera associated with imported frozen coconut milk Maryland. Morbid. Mortal. Weekly Rep. 40:841-845.
- Centers for Disease Control. 1993. Isolation of *Vibrio cholerae* O1 from oysters Mobile Bay, 1991-1992. Morbid. Mortal. Weekly Rep. 42: 91-93.

- Chakraborti, S.R., Chaudhure, K., Sen, K. and Das, J. 1996. Porins of *Vibrio cholerae* : Purification and characterization of OmpU. *J. Bacteriol.* 178:524-530.
- Chakraborty, S., Mukhopadhyay, A.K., Bhadra, R.K., Ghosh, A.N., Mitra, R., Shimada, T., Yamasaki, S., Faruque, S.M., Takeda, Y., Colwell, R.R. and Nair, G.B. 2000. Virulence genes in environmental strains of *Vibrio cholerae*. *Appl. Environ. Microbiol.* 66:4022-4028.
- Champion, G.A., Neely, M.N., Brennan, M.A. and DiRita, V.J. 1997. A branch in the ToxR regulatory cascade of *Vibrio cholerae* revealed by characterization of *toxT* mutant strains. *Mol. Microbiol.* 23:232-331.
- Chaudhuri, K., Bhadra, R.K. and Das, J. 1992. Cell surface characteristics of environmental and clinical isolates of *Vibrio cholerae* non-O1. *Appl. Environ. Microbiol.* 58:3567-3573.
- Chitnis, D.S., Sarma, K.D. and Kamat, R.S., 1982. Role of somatic antigen of *Vibrio cholerae* in adhesion to intestinal mucosa. *J. Med. Microbiol.* 5:53-61.
- Chongsa-nguan, M., Chaicumpa, W., Moolasart, P., Kandhasingha, P., Shimada, T., Kurazono, H. and Takeda, Y. 1993. *Vibrio cholerae* O139 Bengal in Bangkok. *Lancet.* 342:430-431.
- Chowdhury, M.A.R., Huq, A., Xu, B., Madeira, F.J.B. and Colwell, R.R. 1997a. Effect of alum on free-living and copepod-associated *Vibrio cholerae* O1 and O139. *Appl. Environ. Microbiol.* 63:3323-3326.

Chowdhury, M.A.R., Hill, R.T. and Colwell, R.R. 1997b. A gene for the enterotoxin zonula occludens toxin is present in *Vibrio mimicus* and *Vibrio cholerae* O139. FEMS Microbiol. Lett. 119:377-380.

Colwell, R.R., Kaper, J. and Joseph, S.W. 1977. *Vibrio cholerae*, *Vibrio parahaemolyticus* and other Vibrios: occurrence and distribution in Chesapeake Bay. Science. 198: 394-396.

Colwell, R.R., Seidler, R.J., Kaper, J., Joseph, S.W., Garges, S., Lockman, H., Maneval, D., Bradford, H., Roberts, N., Remmers, E., Huq, I. and Huq, A. 1981. Occurrence of *Vibrio cholerae* serotype O1 in Maryland and Louisiana estuaries. Appl. Environ. Microbiol. 41:555-558.

Colwell, R.R. and Huq, A. 1994 Vibrios in the environment: viable but nonculturable *Vibrio cholerae*. In : Wachsmuth, I.K., Blake, P., and Olsvik, O. (eds.). *Vibrio cholerae* and Cholera: Molecular to Global Perspectives. p. 117-133. Washington, D.C., ASM. Press.

Dalsgaard, A., Huss, H.H., Kittiku, A.H. and Larsen, J.L. 1995a. Prevalence of *Vibrio cholerae* and *Salmonella* in a major shrimp production area in Thailand. Inter. J. Food. Microbiol. 28:101-113.

Dalsgaard, A., Albert. M.J., Taylor, D.N., Shimada, T., Meza, R., Serichantalergs, O. and Echeverria, P. 1995b. Characterization of *Vibrio cholerae* non-O1 serogroups obtained from an outbreak of diarrhea in Lima, Peru. J. Clin. Microbiol. 33 :2715-2722.



- Dalsgaard, A., Serichantalergs, O., Shimada, T., Sethabutr, O. and Echeverria, P. 1995c. Prevalence of *Vibrio cholerae* with heat-stable enterotoxin (NAG-ST) and cholera toxin genes : restriction fragment length polymorphisms of NAG-ST genes among *Vibrio cholerae* O serogroups from a major shrimp production area in Thailand. *J. Med. Microbiol.* 43:216-220.
- Dalsgaard, A., Forslund, A., Tam, N.V., Vinh, D.X. and Cam, P.D. 1999b. Cholera in Vietnam: changes in genotypes and emergence of class I integrons containing aminoglycoside resistance gene cassettes in *Vibrio cholerae* O1 strains isolated from 1979 to 1996. *J. Clin. Microbiol.* 37:734-741.
- Dalsgaard, A., Forslund, A., Bodhidatta, L., Serichantalergs, O., Pitarangsi, C., Pang, L., Shimada, T. and Echeverria, P. 1999b. A high proportion of *Vibrio cholerae* strains isolated from children with diarrhoea in Bangkok, Thailand are multiple antibiotic resistant and belong to herogenous non-O1, non-O139 O-serotypes. *Epidemiol. Infect.* 122:217-226.
- Dalsgaard, A., Forslund, A., Serichantalergs, O. and Sandvang, D. 2000a. Distribution and content of class 1 integrons in different *Vibrio cholerae* O-serogroup strains isolated in Thailand. *Antimicrob. Agents Chemother.* 44:1315-1321.
- Dalsgaard, A., Forslund, A., Petersen, A., Brown, D.J., Dias, F., Monteiro, S., Molbak, K., Aaby, P., Rodrigues, A. and Sandstrom, A. 2000b. Class 1 integron-borne, multiple-antibiotic resistance encoded by a 150-kilobase conjugative plasmid in epidemic *Vibrio cholerae* O1 strains isolated in Guinea-Bissau. *J. Clin. Microbiol.* 38:3774-3779.

- DePaola, A., Presnell, M.W., Motes, M.L., JR., McPhearson, R.M., Twedt, R.M., Becker, R.E. and Zywno, S. 1983. Non-O1 *Vibrio cholerae* in shellfish , sediment and waters of the U.S. Gulf Coast. *J. Food Prot.* 46:802-806.
- DePaola, A., Capers, G.M., Motes, M.L., Olsvik, O., Fields, P.L., Wellx, J., Wachsmuth, I.K., Cebula, T.A., Koch, W.H., Khambaty, F., Kothary, M.H., Payne, W.L. and Wentz, B.A. 1992. Isolation of Latin American epidemic strain of *Vibrio cholerae* O1 from US Gulf Coast. *Lancet.* 339:624.
- DiRita, V.J. and Mekalanos, J.J. 1991a. Periplasmic interaction between two membrane regulatory proteins, ToxR and ToxS, results in signal transduction and transcriptional activation. *Cell.* 64:29-37.
- DiRita, V.J., Parsot, C., Jander, G. and Mekalanos, J.J. 1991b. Regulatory cascade controls virulence in *Vibrio cholerae*. *Proc. Natl. Acad. Sci. USA.* 88 : 5403-5407.
- DiRita, V.J. 1992. Co-ordinate expression of virulence genes by ToxR in *Vibrio cholerae*. *Mol. Microbiol.* 6:451-458.
- Dobrindt, U. and Reidl, J. 2000. Pathogenicity islands and phage conversion: evolutionary aspects of bacterial pathogenesis. *Int. J. Med. Microbiol.* 290:519-527.
- Donta, S.J. 1974. Differentiation between the steroidogenic effects of cholera enterotoxin and adrenocorticotropin through use of a mutant adrenal cell line. *J. Infect. Dis.* 129:728-731.

- Dutt, A.K., Alwi, S. and Velauthan, T. 1971. A shellfish-borne cholera outbreak in Malaysia. *Trans. R. Soc. Trop. Med. Hyg.* 64:815-816.
- Dutta-Roy, K., Banerjee, K., De, S.P. and Ghose, A.C. 1986. Comparative study of expression of hemagglutinins, hemolysins and enterotoxins by clinical and environmental isolates of non-O1 of *Vibrio cholerae* in relation to their enteropathogenicity. *Appl. Environ. Microbiol.* 52: 875-879.
- Falbo, V., Carattoli, A., Tosini, F., Pezzella, C., Dionisi, A.M. and Luzzi, I. 1999. Antibiotic resistance conferred by a conjugative plasmid and a class 1 integron in *Vibrio cholerae* O1 El Tor strains isolated in Albania and Italy. *Antimicrob. Agents Chemother.* 43:693-696.
- Farmer, J.J. 1991. The family Vibrionaceae. In Balows, A., Truper, H.G., Dworkin, M., Harder, W. and Schleifer, K.H. (eds.). *The Prokaryotes, (2<sup>nd</sup>) A Handbook on the Biology of Bacteria: Ecophysiology, Isolation, Identification, Applications.* p. 2938-2951. New York: Springer-Verlag.
- Faruque, S.M., Ahmed, K.M., Siddique, A.K., Zaman, K., Alim, A.R.M.A. and Albert, M.J. 1997. Molecular analysis of toxigenic *Vibrio cholerae* O139 Bengal strains isolated in Bangladesh between 1993 and 1996 : evidence for emergence of a new clone of the Bengal Vibrios. *J. Clin. Microbiol.* 35 : 2299-2306.
- Faruque, S.M., Albert, M.J. and Mekalanos, J.J. 1998a. Epidemiology, genetics, and ecology of toxigenic *Vibrio cholerae*. *Microbiol. Mol. Biol. Rev.* 62:1301-1314.

- Faruque, S.M., Asadulghani, Saha, M.N., Alim, A.R.M.A., Albert, M.J., Islam, K.M.N. and Mekalanos, J.J. 1998b. Analysis of clinical and environmental strains of nontoxigenic *Vibrio cholerae* for susceptibility to CTX $\phi$  : Molecular basis for origination of new strains with epidemic potential. Infect. Immun. 66:5819-5825.
- Fasano, A., Baudry, B., Pumplin, D.W., Wasserman, S.S., Tall, B.D., Ketley, J.M. and Kaper, J.B. 1991. *Vibrio cholerae* produces a second enterotoxin, which affects intestinal tight junctions. Proc. Natl. Acad. Sci. U.S.A. 88:5242-5246.
- Fields, P.I., Popovic, T., Wachsmuth, K. and Olsvik, O. 1992. Use of polymerase chain reaction for detection of toxigenic *Vibrio cholerae* O1 strain from the Latin American cholera epidemic. J. Clin. Microbiol. 30:2118-2121.
- Garg, P., Nandy, R.K., Chaudhury, P., Chowdhury, N.R., De, K., Ramamurthy, T., Yamasaki, S., Bhattacharya, S.K., Takeda, Y. and Nair, G.B. 2000. Emergence of *Vibrio cholerae* O1 biotype El Tor serotype Inaba from the prevailing O1 Ogawa serotype strains in India. J. Clin. Microbiol. 38:4249-4253.
- Ghosh, A.R., Koley, H., De, D., Garg, S., Bhattacharya, M.K., Bhattacharya, S.K., Manna, B., Nair, G.B., Shimada, T., Takeda, T. and Takeda, Y. 1994. Incidence and toxigenicity of *Vibrio cholerae* in a freshwater lake during the epidemic of cholera caused by serogroup O139 Bengal in Calcutta, India. FEMS Microbiol. Ecol. 14:285-291.
- Ghosh, C., Nandy, R.K., Dasgupta, S.K., Nair, G.B., Hall, R.H. and Ghose, A.C. 1997.

A search for cholera toxin (CT), toxin co-regulated pilus (TCP), the regulatory element ToxR and other virulence factors in non-O1/non-O139 *Vibrio cholerae*. *Microb. Pathog.* 22 :199-208.

Glass, R.I., Huq, I., Alim, A.R.M.A. and Yunus, M. 1980. Emergence of multiple antibiotic-resistant *Vibrio cholerae* in Bangladesh. *J. Infect. Dis.* 142:393-942.

Glass, R.I., Huq, M.I., Lee, J.V., Threlfall, E. J., Khan, M.R., Alim, A.R.M.A., Rowe, B. and Gross, R.J. 1983. Plasmid-borne multiple drug resistance in *Vibrio cholerae* serogroup O1, biotype El Tor : evidence of a point source outbreak in Bangladesh. *J. Infect. Dis.* 147:204-209.

Gordon, M.A., Walsh, A.L., Rogerson, S.R.K., Magomero, K.C., Machili, C.E., Corkill, J.E. and Hart, C.A. 2001. Three cases of bacteremia caused by *Vibrio cholerae* O1 in Blantyre, Malawi. *Emerg. Infect. Dis.* 7:1059-1061.

Guerrant, R.L., Brunton, L.L., Schnaitman, T.C., Rebhun, L.I. and Gilman, A.G. 1974. Cyclic adenosine monophosphate and alteration of chinese hamster ovary cell morphology: a rapid, sensitive in vitro assay for the enterotoxins of *Vibrio cholerae* and *Escherichia coli*. *Infect. Immun.* 10:320-327.

Guglielmetti, P., Bravo, L., Zanchi, A., Monte, R., Lombardi, G. and Rossolini, G.M. 1994. Detection of the *Vibrio cholerae* heat-stable enterotoxin gene by polymerase chain reaction. *Mol. Cell. Probes.* 8:101-106.

Hall, R.H., Khambaty, F.M., Kothary, M. and Keasler, S.P. 1993. Non-O1 *Vibrio cholerae*. *Lancet.* 342:430.

- Heidelberg, J.F., Eisen, J.A., Nelson, W.C., Clayton, R.A., Gwinn, M.L., Nair, G.B., Karasawa, T., Mihara, T. and Takeda, Y. 2000. DNA sequence of both chromosomes of the cholera pathogen *Vibrio cholerae*. *Nature*, 406:477-484.
- Heilpern, A.J. and Waldor, M.K. 2000. CTX $\phi$  infection of *Vibrio cholerae* requires the *tolQRA* gene products. *J. Bacteriol.* 182:1739-1747.
- Herrington, D.A., Hall, R.H., Losonsky, G., Mekalanos, J.J., Taylor, R.K. and Levine, M.M. 1988. Toxin, toxin co-regulated pili and ToxR regulon are essential for *Vibrio cholerae* pathogenesis in human. *J. Exp. Med.* 168:1487-1492.
- Higgins, D.E. and DiRita, V.J. 1994. Transcriptional control to *toxT*, a regulatory gene in the ToxR regulon of *Vibrio cholerae*. *Mol. Microbiol.* 14:17-29.
- Higgins, D.E. and DiRita, V.J. 1996. Genetic analysis of the interaction between *Vibrio cholerae* transcription activator ToxR and *toxT* promoter DNA. *J. Bacteriol.* 178:1080-1087.
- Hoge, C.W., Sethabutr, O., Bodhidatta, I., Echeverria, P., Røvertson, D.C. and Morris, J.G. 1990. Use of a synthetic oligonucleotide probe to detect strains of non-serovar O1 *Vibrio cholerae* carrying the gene for heat-stable enterotoxin (NAG-ST). *J. Clin Microbiol.* 28:1473-1476.
- Honda, T., and Finkelstein, R.A. 1979. Purification and characterization of hemolysin produced by *V. cholerae* biotype El Tor: another toxic substance produced by cholera vibrio. *Infect. Immun.* 26:1020-1027.

- Honda, T., Arita, M., Takeda, T., Yoh, M. and Miwatani, T. 1989. Non-O1 *Vibrio cholerae* produces two newly identified toxins related to *Vibrio parahemolyticus* hemolysin and *Escherichia coli* heat-stable enterotoxin. *Lancet*. ii:163-164.
- Huq, A., West, P.A., Small, E.B., Huq, M.I. and Colwell, R.R. 1984. Influence of water temperature, salinity, and pH on survival and growth of toxigenic *Vibrio cholerae* serovar O1 associated with live copepods in laboratory microcosms. *Appl. Environ. Microbiol.* 48:420-424.
- Huq, A., Small, E.B., West, P.A., Huq, M.I., Rahman, R. and Colwell, R.R. 1983. Ecological relationships between *Vibrio cholerae* and planktonic crustacean copepods, *Appl. Environ. Microbiol.* 45:275-283.
- Huq, A., Colwell, R.R., Chowdury, M.A.R., Xu, B., Moniruzzaman, S.M., Islam, M.S., Yunus, M. and Alvert, M.J. 1995. Coexistence of *Vibrio cholerae* O1 and O139 Bengal in plankton in Bangladesh. *Lancet*. 345:1249.
- Ichinos, Y., Yanamoto, K., Nakasome, N., Tanabe, M.J., Takeda, T., Miwatani, T. and Iwanaga, M. 1987. Enterotoxicity of El Tor-like hemolysin of non-O1 *Vibrio cholerae*. *Infect. Immun.* 55:1090-1093.
- Iredell, J.R. and Manning, P.A. 1994. Biotype-specific *tcpA* genes in *Vibrio cholerae*. *FEMS Microbiol. Lett.* 121:47-54.
- Islam, M.S., Drasar, B.S. and Bradley, D.J. 1990. Survival of toxigenic *Vibrio*

*cholerae* O1 with a common duckweed, *Lemna minor*, in artificial aquatic ecosystems. *Trans. R. Soc. Trop. Med. Hyg.* 84:422-424.

Ito, T., Hiramatsu, K., Ohshita, Y. and Yokota, T. 1993. Mutations in the *rfbT* gene are responsible for the Ogawa to Inaba serotype conversion in *Vibrio cholerae* O1. *Microbiol. Immunol.* 37:281-288.

Jalajakumari M.B. and Manning, P.A. 1990. Nucleotide sequence of the gene, *ompW*, encoding a 22kDa immunogenic outer membrane protein of *Vibrio cholerae*. *Nucleic Acids Res.* 18:2180.

Janssen, P., Coopman, R., Huys, G., Swings, J., Bleeker, M., Vos, P., Zabeau, M. and Kersters, K. 1996. Evaluation of the DNA fingerprinting method AFLP as a new tool in bacterial taxonomy. *Microbiolgy.* 142:1881-1893.

Jesudason, M.V., Cherian, A. M. and John, T.J. 1993. Blood stream invasion by *Vibrio cholerae* O139. *Lancet.* 342:431.

Jesudason, M.V. and Saaya, R. 1997. Resistance of *Vibrio cholerae* O1 to nalidixic acid. *Indian. J. Med. Res.* 105:153-154.

Jonson, G., Holmgren, J. and Svennerholm, A.M. 1992. Analysis of expression of toxin co-regulated pili in Classical and El Tor *Vibrio cholerae* O1 in Vitro and in Vivo. *Infect. Immun.* 60:4278-4284.

Kaper, J.B., Lockman. H., Colwell, R.R. and Joseph, S.W. 1979. Ecology, serology,



and enterotoxin production of *Vibrio cholerae* in Chesapeake Bay. Appl. Environ. Microbiol. 37:91-103.

Kaper, J.B., Bradford, H.B., Roberts, N.C. and Falkow, S. 1982. Molecular epidemiology of *Vibrio cholerae* in the U.S. Gulf Coast. J. Clin. Microbiol. 16:129-134.

Kaper, J.B., Fasao, A. and Trucksis, M. 1994. Toxins of *Vibrio cholerae*. In : Wachsmuth, I.K., Blake, P. and Olsvik, O. (eds.). *Vibrio cholerae* and Cholera: Molecular to Global Perspectives. p. 145-176. Washington, D.C., ASM Press.

Kaper, J.B., Morris, J.G., Jr. and Levine, M.M. 1995. Cholera. Clin. Microbiol. Rev. 8:48-86.

Karaolis, D.K.R., Lan, R. and Reeves, P.R. 1995. The sixth and seventh cholera pandemics are due to independent clones separately derived from environmental, nontoxigenic, non-O1 *Vibrio cholerae*. J. Bacteriol. 177:3191-3198.

Karaolis, D.K., Johnson, J.A., Balley, C.C., Boedeker, E.C., Kaper, J.B. and Reeves, P.R. 1998. A *Vibrio cholerae* pathogenicity island associated with epidemic and pandemic strains. Proc. Natl. Acad. Sci. USA. 95: 3134-3139.

Karasawa, T., Mihara, T., Kurazono, H., Nair, G.B., Garg, S., Ramamurthy, J. and Takeda, Y. 1993. Distribution of the zot (zonula occludens toxin) gene among strains of *Vibrio cholerae* O1 and non-O1. FEMS Microbiol. Lett. 106:143-145.

- Keasler, S.P. and Hall, R.H. 1993. Detecting and biotyping *V. cholerae* O1 with multiplex polymerase chain reaction. *Lancet*. 341:1661.
- Ketley, J.M., Michalski, J., Galen, J., Levine, M.M. and Kaper, J.J. 1993. Construction of genetically-marked *Vibrio cholerae* O1 vaccine strains. *FEMS Microbiol. Lett.* 111: 15-22.
- Koley, H., Mitra, R., Basu, A., Mukhopadhyay, A.K., Saha, P.K., Ramakrishna, B.S., Krishnan. S., Takeda. Y. and Nair, G.B. 1999. Response of wild-type mutants of *Vibrio cholerae* O1 possessing different combinations of virulence genes in the ligated rabbit ileal loop and in Ussing chambers: evidence for the presence of additional secretogen. *J. Med. Microbiol.* 48:51-57.
- Kondo, S., Kongmuang, U., Kalnauwakul, S, Matsumoto, C., Chen, C.H. and Nishibuchi, M. 2001. Molecular epidemiologic analysis of *Vibrio cholerae* O1 isolated during the 1997-8 cholera epidemic in southern Thailand. *Epidemiol. Infect.* 127:7-16.
- Kurazono, H., Pal. A., Bag, P.K, Nair, G.B., Karasawa, T., Mihara, T. and Takeda, Y. 1995. Distribution of genes encoding cholera toxin, zonula occludens toxin, accessory cholera toxin, and El Tor hemolysin in *Vibrio cholerae* of diverse origins. *Microb. Pathogen.* 18:231-235.
- Lazar, S. and Waldor, M.K. 1998. ToxR-independent expression of cholera toxin from the replicative form of CTX $\phi$ . *Infect. Immun.* 66 : 394-397.
- Lee, J.V. 1990. *Vibrio*, *Aeromonas* and *Plesiomonas* In : Parker, M. T. and

Collier, L.H. (eds.). Principles of Bacteriology, Virology and Immunity, 8<sup>th</sup> Vol III. p.514-524. Philadelphia: B.C. Decker.

Lee, C.A. 1999. *Vibrio cholerae* TCP : a trifunctional virulence factor?. Trends in Microbiol. 7:391-392.

Levine, M.M., Kaper, J.B., Herrington, D., Losonsky, G., Morris, J.G., Clements, M.L., Black, R.E., Tall, B. and Hall, R. 1988. Volunteer studies of deletion mutants of *Vibrio cholerae* O1 prepared by recombinant techniques. Infect. Immun. 56:161-167.

Lin, C.S., Wang, T.K., Lee, C.L., Pan, T.M. Tsai, J.L., Ho, S.I. and Lu, C.H. 2001. Molecular epidemiology of newly emerged *Vibrio cholerae* O139 in Taiwan. J. Food Drug Anal. 9: 224-231.

Lin, W., Fullner, K.J., Clayton, R., Sexton, J.A., Rogers, M.B., Calia, K.E., Calderwood, S.B., Fraser, C. and Mekalanos, J.J. 1999. Identification of a *Vibrio cholerae* RTX toxin gene cluster that is tightly linked to the cholera toxin prophage. Proc. Natl. Acad. Sci. USA. 96:1071-1076.

Lyer, L., Vadivelu, J. and Puthucheary, S.D. 2000. Detection of virulence associated genes, haemolysin and protease among *Vibrio cholerae* isolated in Malaysia. Epidemiol. Infect. 125:27-34.

- Manning, P.A., Stroehler, U.H. and Morona, R. 1994. Molecular basis for O-antigen biosynthesis in *Vibrio cholerae* O1: Ogawa Inaba switching, In: Wachsmuth, I.K., Blake, P.A. and Olsvik, O.(eds). *Vibrio cholerae* and Cholera, Molecular to Global Perspectives. p. 77-94. Washington, D.C.: ASM Press.
- Maslow, J.N., Sultsky, A.M. and Arbeit, R.D. 1993. Application of pulsed-field gel electrophoresis to molecular epidemiology. In: Persing, D.H., Smith, T.F., Tenover, F.C. and White, T.J. (eds). *Diagnostic Molecular Microbiology-Principles and Applications*. p. 563-572. Washington, D.C. USA. American Society for Microbiology.
- Materu, S.F., Lema, O.E., Mukunza, H.M., Adhiambo, C.G. and Carter, J.Y. 1997. Antibiotic resistance pattern of *Vibrio cholerae* and *Shigella* causing diarrhoea outbreaks in the eastern Africa region: 1994-1996. *East Afr. Med. J.* 74:193-197.
- Matte, G.R., Matte, M.H., Rivera, I.G. and Martins, M.T. 1994. Distribution of potentially pathogenic *Vibrios* in oysters from a tropical region. *J. Food Protect.* 57:870-873.
- Miller, V.L. and Mekalanos, J.J. 1984. Synthesis of cholera toxin is positively regulated at the transcriptional level by *toxR*. *Proc. Natl. Acad. Sci. USA.* 81 : 3471-3475.
- Miller, V.L. and Mekalanos, J.J. 1988. A novel suicide vector and its use in

construction of insertion mutations : osmoregulation of outer membrane proteins and virulence determinants in *Vibrio cholerae* requires *toxR*. J. Bacteriol. 170:2575-2583.

Miller, V.L., Taylor, R.K. and Mekalanos, J.J. 1987. Cholera toxin transcriptional activator ToxR is a transmembrane DNA binding protein. Cell. 48:271-279.

Miller, V.L., DiRita, V.J. and Mekalanos, J.J. 1989. Identification of *toxS*, a regulatory gene whose product enhances ToxR-mediated activation of the cholera toxin promoter. J. Bacteriol. 171:1288-1293.

Mitra, R., Basu, A., Dutta, D., Nair, G.B. and Takeda, Y. 1996. Resurgence of *Vibrio cholerae* O139 Bengal with altered antibiogram in Calcutta, India. Lancet. 348:1181.

Morris, J.G. Jr. 1994. Non-O1 group 1 *Vibrio cholerae* strains not associated with epidemic diseases. In : Wachsmuth, I.K., Blake, P. and Olsvik, O. (eds.). *Vibrio cholerae* and Cholera: Molecular to Global Perspectives. p. 103-115. Washington, D.C., ASM Press.

Morris, J.G. Jr., Takeda, T., Tall, B.D., Losonsky, G.A., Bhattacharya, S.K., Forrest, B.D., Kay, B.A. and Nishibuchi, M. 1990. Experimental non-O group 1 *Vibrio cholerae* gastroenteritis in humans. J. Clin. Invest. 85:697-705.

Mukhopadhyay, A.K., Basu, A., Garg, P., Bag, P.K., Ghosh, A., Bhattacharya, S.K., Takeda, Y. and Nair, G.B. 1998. Molecular epidemiology of reemergent *Vibrio cholerae* O139 Bengal in India. J. Clin. Microbiol. 36:2149-2152.

- Nakasone, N., Iwanaga, M. and Eeckels, R. 1987. Characterization of *Vibrio cholerae* O1 recently isolated in Bangladesh. *Trans. R. Soc. Trop. Med. Hyg.* 81:876-878.
- Nandi, B., Nandy, R.K., Mukhopadhyay, S., Nair, G.B., Shimada, T. and Ghose, A.C. 2000. Rapid method for species-specific identification of *Vibrio cholerae* using primers targeted to the gene of outer membrane protein OmpW. *J. Clin. Microbiol.* 38:4145-4151.
- Nalin, D.R., Daya, V., Reid, A., Levine, M.M. and Cisneros, L. 1979. Adsorption and growth of *Vibrio cholerae* on chitin. *Infect. Immun.* 25:768-770.
- NCCLS. 1997. Performance standards for antimicrobial disk susceptibility tests – sixth edition; Approved Standard. NCCLS document M2-A6 (ISBN 1-56238-308-6). NCCL 940 West Valley Road, Suite 1400, Wayne, Pennsylvania 19087-1898. 17:1-25.
- O'Brien, A.D., Chen, M.E., Holmes, R.K., Kaper, J.B. and Levine, M.M. 1984. Environmental and human isolates of *Vibrio cholerae* and *Vibrio parahaemolyticus* produce a *Shigella dysenteriae* 1 (Shiga)-like cytotoxin. *Lancet.* i:77-78.
- Ogawa, A., Kato, J., Watanabe, H., Nair, B.G. and Takeda, T. 1990. Cloning and nucleotide sequence of a heat-stable enterotoxin gene from *Vibrio cholerae* non-O1 isolated from a patient with traveller's diarrhea. *Infect. Immun.* 58:3325-3329.

- Ogawa, A. and Takeda, T. 1993. The gene encoding the heat-stable enterotoxin of *Vibrio cholerae* is flanked by 123-base pair direct repeats. *Microbiol. Immunol.* 37:607-616.
- Ogg, J.E., Shrestha, M.B. and Poudayl, L. 1978. Phage-induced changes in *Vibrio cholerae* : serotype and biotype conversions. *Infect. Immune.* 19:231-238.
- Ogg, J.E., Ogg, B.J., Shrestha, M.B. and Poudayl, L. 1979. Antigenic changes in *Vibrio cholerae* biotype Eltor serotype Ogawa after bacteriophage infection. *Infect. Immune.* 24:974-978.
- Ogg, J.E., Timme, T.L. and Alemohammad, M.M. 1981. General transduction in *Vibrio cholerae*. *Infect. Immune.* 31:737-741.
- Olsvik, O., Wahlberg, J., Petterson, B., Uhlen, M., Popovic, T., Wachsmuth, I.K. and Fields, P.I. 1993. Use of automated sequencing of polymerase chain reaction generated amplicons to identify three types of cholera toxin subunit B in *Vibrio cholerae* O1 strains. *J. Clin. Microbiol.* 31:22-25.
- Osawa, R., Okitsu, T., Sata, S. and Yamai, S. 1997. Rapid screening method for identification of cholera toxin-producing *Vibrio cholerae* O1 and O139. *J. Clin. Microbiol.* 35:951-953.
- Ottemann, K.M. and Mekalanos, J.J. 1996. The ToxR protein of *Vibrio cholerae* forms homodimers and heterodimers. *J. Bacteriol.* 178:156-162.
- Pal, A., Ramamurthy, T., Bhadra, R.K., Takeda, T., Shimada, T., Takeda, Y., Nair,

- G.B., Pal, S.C. and Chakraborti, S. 1992. Reassessment of the prevalence of heat-stable enterotoxin (NAG-ST) among environmental *Vibrio cholerae* non-O1 strains isolated from Calcutta, India, by using a NAG-ST DNA probe. *Appl. Environ. Microbiol.* 58:2485-2489.
- Parsot, C. and Mekalanos, J.J. 1990. Expression of ToxR, the transcriptional activator of the virulence factors in *Vibrio cholerae*, is modulated by the heat shock response. *Proc. Natl. Acad. Sci. USA.* 87:9898-9902.
- Parsot, C., Taxman, E. and Mekalanos, J.J. 1991. ToxR regulates the production of lipoproteins and the expression of serum resistance in *Vibrio cholerae*. *Proc. Natl. Acad. Sci. USA.* 88:1641-1645.
- Pearson, G.D.N., Woods, A., Chiang, S.L. and Mekalanos, J.J. 1993. CTX genetic element encodes a site-specific recombination system and an intestinal colonization factor. *Proc. Natl. Acad. Sci. USA.* 90:3750-3754.
- Peterson, K.M. and Mekalanos, J.J. 1988. Characterization of the *Vibrio cholerae* ToxR regulon: identification of novel genes involved in intestinal colonization. *Infect Immun.* 56:2822-2829.
- Pollitzer, R. 1959. Cholera. World Health Organization, Geneva.
- Popovic, T., Bopp, C., Olsvik, O. and Wachsmuth, K. 1993. Epidemiologic application of a standardized ribotype scheme for *Vibrio cholerae* O1. *J. Clin. Microbiol.* 31:2474-2482.



- Pourshafie, M.R., Grimont, F., Saifi, M. and Grimont, P.A.D. 2000. Molecular epidemiological study of *Vibrio cholerae* isolates from infected patients in Teheran, Iran. *J. Med. Microbiol.* 49:1085-1090.
- Raja, N., Shamsudin, M.N., Somarny, W., Rosli, R., Rahim, R.A. and Radu, S. 2001. Detection and molecular characterization of the *zot* gene in *Vibrio cholerae* and *V. alginolyticus* isolates. *Southeast Asian J. Trop. Med. Public Health.* 32:100-104.
- Ramamurthy, T., Garg, S., Sharma, R., Bhattacharya, S.K., Nair, G.B., Shimada, T., Takeda, T., Karasawa, T., Kurazano, H., Pal, A. and Takeda, Y. 1993a. Emergence of novel strain of *Vibrio cholerae* with epidemic potential in Southern and Eastern India. *Lancet.* 341:703-704.
- Ramamurthy, T., Bag, P.K., Pal, A., Bhattacharya, S.K., Bhattacharya, M.K., Shimada, T., Takeda, T., Karasawa, T., Kurazono, H. and Takeda, Y. 1993b. Virulence patterns of *Vibrio cholerae* non-O1 strains isolated from hospitalised patients with acute diarrhoea in Calcutta, India. *J. Med. Microbiol.* 39:310-317.
- Ravel, J., Knight, I.T., Monahan, C.E., Hill, R.T. and Colwell, R.R. 1995. Temperature-induced recovery of *Vibrio cholerae* from the viable but non-culturable state: growth or resuscitation?. *Microbiol.* 141:377-383.
- Rhine, J.A. and Taylor, R.K. 1994. TcpA pilin sequences and colonization requirements for O1 and O139 *Vibrio cholerae*. *Mol. Microbiol.* 13:1013-1020.

- Rivera, I.N.G., Chun, J., Huq, A., Sack, R.B. and Colwell, R.R. 2001. Genotypes associated with virulence in environmental isolates of *Vibrio cholerae*. Appl. Environ. Microbiol. 67:2421-2429.
- Roberts, T.A., Baird-Parker, A.C. and Tompkin, R.B. 1996. *Vibrio cholerae*. In : Roberts, T.A. (ed.). Microorganisms in Foods. p.414-425. Clays Ltd, Bungay, Suffolk.
- Roszak, D.B. and Colwell, R.R. 1987. Survival strategies of bacteria in the natural environment. Microbiol. Rev. 51:365-379.
- Said, B., Smith, H.R., Scotland, S.M. and Rowe, B. 1995. Detection and differentiation of the gene for toxin co-regulated pili (*tcpA*) in *Vibrio cholerae* non-O1 using the polymerase chain reaction. FEMS Microbiol. Lett. 125:205-210.
- Sakajaki, R. 1970. Classification and characteristics of Vibrios. Public. Health paper no.40.WHO, Geneva, Switzerland.
- Sambrook, J., Fritsch, E.F. and Maniatis, T. 1989. Molecular Cloning : a Laboratory Manual, 2<sup>nd</sup> ed. Cold Spring Harbor Laboratory, New York: Cold Spring.
- Sciortino, C.V., Johnson, J.A. and Hamad, A. 1996. Vitek system antimicrobial susceptibility testing of O1, O139 and non-O1 *Vibrio cholerae*. J. Clin. Microbiol. 34:897-900.
- Sechi, L.A., Dupre, I., Deriu, A., Fadda, G. and Zanetti, S. 2000. Distribution of *Vibrio*

*cholerae* virulence genes among different *Vibrio* species isolated in Sardinia, Italy. J. Appl. Microbiol. 88:475-481.

Sharma, C., Thungapathra, M., Ghosh, A., Mukhopadhyay, A.K., Basu, a., Mitra, R., Basu, I., Bhattacharya, S.K., Shimada, T., Ramamurthy, T., Takeda, T., Yamasaki, S., Takeda, Y. and Nair, G.B. 1998a. Molecular analysis of non-O1, non-O139 *Vibrio cholerae* associated with an unusual upsurge in the incidence of cholera-like disease in Calcutta, India. J. Clin. Microbiol. 36:756-763.

Sharma, C., Thungapathra, M., Ghosh, A., Mukhopadhyay, A.K., Basu, A., Mitra, R., Basu, I., Bhattacharya, S.K., Shimada, T., Ramamurthy, T., Takeda, T., Yamasaki, S., Takeda, Y. and Nair, G.B. 1998b. Molecular analysis of non-O1, non-O139 *Vibrio cholerae* associated with an unusual upsurge in the incidence of cholera-like disease in Calcutta, India. J. Clin. Microbiol. 36:756-763.

Shi, L., Miyoshi, S., Hiura, M., Tomochika, K., Shimada, T. and Shinoda, S. 1998. Detection of genes encoding cholera toxin (CT), zonula occludens toxin(ZOT), accessory cholera enterotoxin(ACE) and heat-stable enterotoxin(ST) in *Vibrio mimicus* clinical strains. Microbiol. Immunol. 42:823-828.

Shimada, T., Nair, G.B., Deb, B.C., Albert, M.J., Sack, R.B. and Takeda, Y. 1993. Outbreak of *Vibrio cholerae* non-O1 in India and Bangladesh. Lancet. 341:1347.

Shirai, H.R., Nishibuchi, M., Ramamurthy, T., Bhattacharya, S.K., Pal, S.C. and Yoshifumi, T. 1991. Polymerase chain reaction for detection of the cholera enterotoxin operon of *V. cholerae*. J. Clin. Microbiol. 29:2517-2521.

- Siddique, A.K., Zaman, K. and Mazumder, Y. 1989. Simultaneous outbreaks of contrasting drug resistant classical and El Tor *Vibrio cholerae* O1 in Bangladesh. *Lancet*. i:396.
- Siddique, A.K., Zaman, K., Baqui, A.H., Akram, K., Mutsuddy, P., Eusof, A., Haider, K., Islam, S. and Sack, R.B. 1992. Cholera epidemics in Bangladesh:1985-1991. *J. Diarrhoeal. Dis. Res.* 10:79-86.
- Singh, D.V., Matte, M.H., Matte, G.R., Jiang, S., Sabeen, F., Shukla, B.N., Sanyal, S.C., Huq, A. and Colwell, R.R. 2001. Molecular analysis of *Vibrio cholerae* O1, O139, non-O1 and non-O139 strains: clonal relationships between clinical and environmental isolates. *Appl. Environ. Microbiol.* 67:910-921.
- Singleton, F.L., Attwell, R., Jangi, S. and Colwell, R.R. 1982. Effects of temperature and salinity on *Vibrio cholerae* growth. *Appl. Environ. Microbiol.* 44:1047-1058.
- Skorupski, K. and Taylor, R.K. 1997. Control of the ToxR virulence regulon in *Vibrio cholerae* by environmental stimuli. *Mol. Microbiol.* 25:1003-1009.
- Sochard, M.R., Wilson, D.F., Austin, B. and Colwell, R.R.1979. Bacteria associated with the surface and gut of marine copepods. *Appl. Environ. Microbiol.* 37:750-759.
- Sperandio, V., Giron, J.A., Silveira, W.D. and Kaper, J.B. 1995. The OmpU outer membrane protein, a potential adherence factor of *Vibrio cholerae*. *Infect. Immun.* 63:4433-4438.

- Sperandio, V., Bailey, C., Giron, J.A., DiRita, V.J., Silveira, W.D., Vettore, A.L. and Kaper, J.B. 1996. Cloning and characterization of the gene encoding the OmpU outer membrane protein of *Vibrio cholerae*. *Infect. Immun.* 64:5406-5409.
- Stroehrer, U.H., Kanageorgos, L.E., Morona, R. and Manning, P.A. 1992. Serotype conversion in *Vibrio cholerae* O1. *Proc. Natl. Acad. Sci. USA.* 89:2566-2570.
- Swaddiwudhipong, W., Akarasewi, P., Chayanlyayodhin, T., Kunasol, P. and Foy, H.M. 1990. A cholera outbreak associated with eating uncooked pork in Thailand. *J. Diarrhoral. Dis. Res.* 8:94-96.
- Swerdlow, D.L. and Ries, A.A. 1993 *Vibrio cholerae* non-O1-the eighth pandemic?. *Lancet.* 342:382-383.
- Tabtieng, R., Wattanasri, S., Echeverria, P., Seriwatabe, J., Bodhidatta, L., Chatkaeomorakot, A. and Rowe, B. 1989. An epidemic of *Vibrio cholerae* El Tor Inaba resistant to several antibiotic with a conjugation group C plasmid coding for type II dihydrofolate reductase in Thailand. *Am. J. Trop. Med. Hyg.* 41:680-686.
- Takeda, T., Peina, Y., Ogawa, A., Dohi, S., Abe, H., Nair, G.B. and Pal, S.C. 1991. Detection of heat-stable enterotoxin in a cholera toxin gene-positive strain of *Vibrio cholerae* O1. *FEMS Microbiol. Lett.* 64:23-27.
- Tamplin, M.L., Gauzens, A.L., Huq, A., Sack, D.A. and Colwell, R.R. 1990. Attachment of *Vibrio cholerae* serogroup O1 to zooplankton and phytoplankton of Bangladesh waters. *Appl. Environ. Microbiol.* 56:1977-1980.

- Tauxe, R., Seminario, L., Tapia, R. and Libel, M. 1994. The Latin American epidemic. In : Wachsmuth, I.K., Blake, P., and Olsvik, O. (eds.). *Vibrio cholerae* and Cholera: Molecular to Global Perspectives. p. 321-344. Washington, D.C., ASM Press.
- Taylor, J.L., Tuttle, J., Pramukul, T., O'Brien, K., Barrett, T.J., Jolbitado, B., Lim, Y.L., Vugia, D. and Morris, J.G. 1993. An outbreak of cholera in Maryland associated with imported commercial frozen fresh coconut milk. *J. infect. Dis.* 167:1330-1335.
- Taylor, R.K., Miller, V.L., Furlong, D.B. and Mekalanos, J.J. 1987. Use of *phoA* gene fusions to identify a pilus colonization factor coordinately regulated with cholera toxin. *Proc. Natl. Acad. Sci. USA.* 84:2833-2837.
- Thamlikitkul, V. 1990. *Vibrio* bacteremia in Siriraj Hospital. *J. Med. Assoc. Thailand.* 73:136-139.
- Trucksis, M., Galen, J.E., Michalski, J., Fasano, A. and Kaper, J.B. 1993. Accessory cholera enterotoxin (Ace), the third toxin of a *Vibrio cholerae* virulence cassette. *Proc. Natl. Acad. Sci. U.S.A* 90:5267-5271.
- Trucksis, M., Michalski, J., Deng, Y.K. and Kaper, J.B. 1998. The *Vibrio cholerae* genome contains two unique circular chromosomes. *Proc. Natl. Acad. Sci. USA.* 95 : 14464-14469.
- Tsutsumi, H., Hodate, Y., Ohtaka, M. and Shimada, T. 1995. Studies on *Vibrio*

*cholerae* non-O1 isolated from diarrheal patients arrived from overseas. J. Jpn. Assoc. Infect. Dis. 69:637-641.

Twedt, R.M., Madden, J.M., Hunt, J.M., Francis, D.W., Peeler, J.T., Duran, A.P., Hebert, W.O., McCay, S.G., Roderick, C.N., Spite, G.T. and Wazenski, T.J. 1981. Characterization of *Vibrio cholerae* isolated from oysters. Appl. Environ. Microbiol. 41 :1475-1478.

Venkateswaran, K., Takai, T., Navarro, I.M., Nakano, H., Hashimoto, H. and Siebeling, R.J. 1989. Ecology of *Vibrio cholerae* non-O1 and *Salmonella* spp. and role of zooplankton in their seasonal distribution in Fukuyama coastal waters, Japan. Appl. Environ. Microbiol. 55:1591-1598.

Vicente, A.C., Coelho, A.M. and Salles, C.A. 1997. Detection of *Vibrio cholerae* and *V. mimicus* heat-stable toxin gene sequence by PCR. J. Med Microbiol. 46:398-402.

Voss, E. and Attridge, S.R. 1993. *In vitro* production of toxin co-regulated pili by *Vibrio cholerae* El Tor. Microb. Patho. 15:255-268.

Waldor, M.K. and Mekalanos, J.J. 1994. Emergence of a new cholera pandemic : molecular analysis of virulence determinants in *Vibrio cholerae* O139 and development of a live vaccine prototype. J. Infect. Dis. 170:278-283.

Waldor, M.K. and Mekalanos, J.J. 1996a. Lysogenic conversion by a filamentous phage encoding cholera toxin. Science. 272 : 1910-1914.

- Waldor, M.K., Tschape, H. and Mekalanos, J.J. 1996b. A new type of conjugative transposon encodes resistance to sulfamethoxazole, trimethoprim, and streptomycin in *Vibrio cholerae* O139. *J. Bacteriol.* 178:4157-4165.
- Waldor, M.K., Rubin, E.J., Pearson, G.D., Kimsey, H. and Mekalanos, J.J. 1997. Regulation, replication, and integration functions of the *Vibrio cholerae* CTX $\phi$  are encoded by region RS2. *Mol. Microbiol.* 24 :917-926.
- Weber, J.T., Levine, W.C., Hopkins, D.P. and Tauxe, R.V. 1994. Cholera in the United States, 1965-1991. Risks at home and abroad. *Archiv. Inter. Med.* 154:551-556.
- Welsh, J. and McClelland, M. 1990. Fingerprinting genomes using PCR with arbitrary primers. *Nucleic Acids Res.* 18:7213-7218.
- Williams, J.G.K., Kubelik, A.R., Livak, K.J., Rafalski, J.A., and Tingey, S.V. 1990. DNA polymorphisms amplified by arbitrary primers are useful as genetic markers. *Nucleic Acids. Res.* 18:6531-6535.
- Wilson, G. 1984. Cholera. In: Wilson, G., Miles, A. and Parker, M.T.(eds.). *Principles of Bacteriology, Virology and Immunity*, 7<sup>th</sup> ed. vol.3. p.446-457. Williams and Wilkins, Baltimore.
- Wolin, M.J. 1973. The cholera *Vibrio* and related forms. In : Burrows, W. (ed.). *Textbook of Microbiology*(20<sup>th</sup> ed). p.520-536. Philadelphia: W.B. Saunders.
- World Health Organization. 2001. *Weekly Epidemiol. Rec.* 76:233-240.



- Xu, H.S., Roberts, N., Singleton, F.L., Attwell, R.W., Grimes, D.J. and Colwell, R.R. 1982. Survival and viability of nonculturable *Escherichia coli* and *Vibrio cholerae* in the estuarine and marine environment. *Microb. Ecol.* 8:313-323.
- Yamamoto, K., Takeda, Y., Miwatani, T. and Craig, J.P. 1983. Evidence that a non-O1 *Vibrio cholerae* produces enterotoxin that is similar but not identical to cholera enterotoxin. *Infect. Immun.* 41:896-901.
- Yamamoto, K., Al-Omani, M., Honda, T., Takeda, Y. and Miwatani, T. 1984. Non-O1 *Vibrio cholerae* hemolysin: purification, partially characterization and immunological relatedness to El Tor hemolysin. *Infect. Immun.* 45:192-196.
- Yamamoto, K., Ichinose, Y., Nakasone, N., Tanabe, M., Nagahama, M., Sakurai, J. and Iwanaga, M. 1986. Identity of hemolysins produced by *Vibrio cholerae* non-O1 and *V. cholerae* O1, biotype El Tor. *Infect. Immun.* 51:927-931.
- Yamamoto, T., Nair, G.B. and Takeda, Y. 1995. Emergence of tetracycline resistance due to a multiple drug resistance plasmid in *Vibrio cholerae* O139. *FEMS. Immunol. Medic. Microbiol.* 11:131-136.
- Yamasaki, S., Garg, S., Nair, G.B. and Takeda, Y. 1999. Distribution of *Vibrio cholerae* O1 antigen biosynthesis genes among O139 and other non-O1 serogroups of *Vibrio cholerae*. *FEMS Microbiol. Lett.* 179:115-121.
- Young, H.K. and Amyes, S.G. 1986. Plasmid trimethoprim resistance in *Vibrio cholerae*: migration of the typeI dihydrofolate reductase gene out of the Enterobacteriaceae. *J. Antimicrob. Chemother.* 17:697-703.