

References

- Acheson DW, Keusch GT. (1994). The *Shigella* paradigm and colitis due to enterohaemorrhagic *Escherichia coli*. *Gut*. 35 (7); 872-4.
- Adabi M, Bakhshi B, Goudarzi H, Zahraei SM, Pourshafie MR. (2009). Distribution of class I integron and sulfamethoxazole trimethoprim resistance in *Vibrio cholerae* isolated from patients in Iran. *Microb Drug Resist*. 15 (3); 179-84. 10.1089/mdr.2009.0885.
- Aedo S, Ivanova L, Tomova A, Cabello FC. (2014). Plasmid-related quinolone resistance determinants in epidemic *Vibrio parahaemolyticus*, uropathogenic *Escherichia coli*, and marine bacteria from an aquaculture area in Chile. *Microb Ecol*. 68 (2); 324-8. 10.1007/s00248-014-0409-2.
- Ahmed AM, Kawaguchi F, Shimamoto T. (2006a). Class 2 integrons in *Vibrio cholerae*. *J Med Microbiol*. 55 (Pt 5); 643-4. 10.1099/jmm.0.46378-0.
- Ahmed AM, Furuta K, Shimomura K, Kasama Y, Shimamoto T. (2006b). Genetic characterization of multidrug resistance in *Shigella* spp. from Japan. *J Med Microbiol*. 55 (12); 1685-91. 10.1099/jmm.0.46725-0.
- Ahmed AM, Shimamoto T. (2015). Molecular characterization of multidrug-resistant *Shigella* spp. of food origin. *Int J Food Microbiol*. 194 78-82. 10.1016/j.ijfoodmicro.2014.11.013.
- Ahmed AM, Shinoda S, Shimamoto T. (2005). A variant type of *Vibrio cholerae* SXT element in a multidrug-resistant strain of *Vibrio fluvialis*. *FEMS Microbiol Lett*. 242 (2); 241-7. 10.1016/j.femsle.2004.11.012.
- Ahmed AM, Nakagawa T, Arakawa E, Ramamurthy T, Shinoda S, Shimamoto T. (2004). New aminoglycoside acetyltransferase gene, aac(3)-Id, in a class I integron from a multiresistant strain of *Vibrio fluvialis* isolated from an infant aged 6 months. *J Antimicrob Chemother*. 53 (6); 947-51. 10.1093/jac/dkh221
- Amita, Chowdhury SR, Thungapathra M, Ramamurthy T, Nair GB, Ghosh A. (2003). Class I integrons and SXT elements in El Tor strains isolated before and after 1992 *Vibrio cholerae* O139 outbreak, Calcutta, India. *Emerg Infect Dis*. 9 (4); 500-2. 10.3201/eid0904.020317.

References

- Arakawa Y, Murakami M, Suzuki K, Ito H, Wacharotayankun R, Ohsuka S *et al.* (1995). A novel integron-like element carrying the metallo-beta-lactamase gene *bla_{imp}*. *Antimicrob agents chemother.* 39 (7); 1612-5.
- Ashkenazi S, Levy I, Kazaronovski V, Samra Z. (2003). Growing antimicrobial resistance of *Shigella* isolates. *J Antimicrob Chemother.* 51 (2); 427-9.
- Azmi IJ, Khajanchi BK, Akter F, Hasan TN, Shahnaj M, Akter M *et al.* (2014). Fluoroquinolone resistance mechanisms of *Shigella flexneri* isolated in Bangladesh. *PLoS One.* 9 (7); e102533. 10.1371/journal.pone.0102533.
- Badhai J, Kumari P, Krishnan P, Ramamurthy T, Das SK. (2013). Presence of SXT integrating conjugative element in marine bacteria isolated from the mucus of the coral *Fungia echinata* from Andaman Sea. *FEMS Microbiol Lett.* 338 (2); 118-23. 10.1111/1574-6968.12033.
- Baharoglu Z, Garriss G, Mazel D. (2013). Multiple pathways of genome plasticity leading to development of antibiotic resistance. *Antibiotics (Basel).* 2 (2); 288-315. 10.3390/antibiotics2020288.
- Baranwal S, Dey K, Ramamurthy T, Nair GB, Kundu M. (2002). Role of active efflux in association with target gene mutations in fluoroquinolone resistance in clinical isolates of *Vibrio cholerae*. *Antimicrob Agents Chemother.* 46 (8); 2676-8.
- Barlow RS, Gobius KS. (2006). Diverse class 2 integrons in bacteria from beef cattle sources. *J Antimicrob Chemother.* 58 (6); 1133-8. 10.1093/jac/dkl423.
- Barman S, Chatterjee S, Chowdhury G, Ramamurthy T, Niyogi SK, Kumar R *et al.* (2010). Plasmid-mediated streptomycin and sulfamethoxazole resistance in *Shigella flexneri* 3a. *Int J Antimicrob Agents.* 36 (4); 348-51. 10.1016/j.ijantimicag.2010.06.037.
- Bauer AW, Kirby WM, Sherris JC, Turck M. (1966). Antibiotic susceptibility testing by a standardized single disk method. *Am J Clin Pathol.* 45 (4); 493-6.
- Beaber JW, Hochhut B, Waldor MK. (2002). Genomic and functional analyses of SXT, an integrating antibiotic resistance gene transfer element derived from *Vibrio cholerae*. *J Bacteriol.* 184 (15); 4259-69.
- Bellet J, Klein B, Altieri M, Ochsenschlager D. (1989). *Vibrio fluvialis*, an unusual pediatric enteric pathogen. *Pediatr Emerg Care.* 5 (1); 27-8.

- Bhattacharya D, Bhattacharya H, Sayi DS, Bharadwaj AP, Singhanian M, Sugunan AP *et al.* (2015). Changing patterns and widening of antibiotic resistance in *Shigella* spp. over a decade (2000-2011), Andaman Islands, India. *Epidemiol infect.* 143 (3); 470-7. 10.1017/S0950268814000958.
- Bhattacharya D, Sugunan AP, Bhattacharjee H, et al., (2012). Antimicrobial resistance in shigella-rapid increase & widening of spectrum in Andaman Islands, India. *Indian J Med Res.* 135(3):365-370.
- Bhattacharjee S, Bhattacharjee S, Bal B, Pal R, Niyogi SK, Sarkar K. (2010). Is *Vibrio fluvialis* emerging as a pathogen with epidemic potential in coastal region of eastern India following cyclone aila? *J Health Popul Nutr.* 28 (4); 311-7.
- Bhardwaj AK, Vinothkumar K, Rajpara N, Mohanty P, Kutar BM. (2014). Therapeutic Limitations Due to Antibiotic Drug Resistance: Road to Alternate Therapies. *Frontiers in Anti-Infective Drug Discovery* (e. book), Vol. 3. Bentham Science Publishers. Editors: Atta-ur-Rahman and M. Iqbal Choudhary.
- Bi D, Xu Z, Harrison EM, Tai C, Wei Y, He X *et al.* (2012). ICEberg: a web-based resource for integrative and conjugative elements found in Bacteria. *Nucleic Acids Res.* 40 (Database issue); D621-6. 10.1093/nar/gkr846.
- Birnboim HC, Doly J (1979). A rapid alkaline extraction procedure for screening recombinant plasmid DNA. *Nucleic Acids Res.* 7 (6); 1513-23.
- Biskri L, Mazel D. (2003). Erythromycin esterase gene ere(A) is located in a functional gene cassette in an unusual class 2 integron. *Antimicrob Agents chemother.* 47 (10); 3326-31.
- Bissonnette L, Roy PH. (1992). Characterization of In0 of *Pseudomonas aeruginosa* plasmid pVS1, an ancestor of integrons of multiresistance plasmids and transposons of gram-negative bacteria. *J Bacteriol.* 174(4);1248–57.
- Boucher Y, Labbate M, Koenig JE, Stokes HW. (2007). Integrons: mobilizable platforms that promote genetic diversity in bacteria. *Trends Microbiol.* 15 (7); 301-9. 10.1016/j.tim.2007.05.004.

References

- Bowen A. (2016). Chapter 3: Infectious Diseases Related to Travel. *The Yellow Book: Health Information for International Travel*. CDC. ISBN: 978-0-19-937915-6.
- Burans JP, Podgore J, Mansour MM, Farah AH, Abbas S, Abu-Elyazeed R, *et al.* (1989). Comparative trial of erythromycin and sulphatrimethoprim in the treatment of tetracycline-resistant *Vibrio cholerae* O1. *Trans R Soc Trop Med Hyg.* 83(6); 836-8.
- Burrus V, Marrero J, Waldor MK. (2006). The current ICE age: biology and evolution of SXT-related integrating conjugative elements. *Plasmid.* 55 (3); 173-83. 10.1016/j.plasmid.2006.01.001.
- Burrus V, Waldor MK. (2003). Control of SXT integration and excision. *J Bacteriol.* 185 (17); 5045-54.
- Burrus V, Waldor MK. (2004). Shaping bacterial genomes with integrative and conjugative elements. *Res Microbiol.* 155 (5); 376-86. 10.1016/j.resmic.2004.01.012.
- Cambray G, Guerout AM, Mazel D. (2010). Integrons. *Annu Rev Genet.* 44 141-66. 10.1146/annurev-genet-102209-163504.
- Cattoir V, Poirel L, Mazel D, Soussy CJ, Nordmann P. (2007). *Vibrio splendidus* as the source of plasmid-mediated *qnrS*-like quinolone resistance determinants. *Antimicrob Agents Chemother.* 51 (7); 2650-1. 10.1128/AAC.00070-07.
- Carattoli A. (2009). Resistance plasmid families in *Enterobacteriaceae*. *Antimicrob Agents Chemother.* 53 (6); 2227-38. 10.1128/AAC.01707-08.
- Carattoli A. (2013). Plasmids and the spread of resistance. *Int J Med Microbiol.* 303 (6-7); 298-304. 10.1016/j.ijmm.2013.02.001.
- Casali N. (2003). *Escherichia coli* host strains. In: Casali N., Preston A. (eds) *E. coli* Plasmid Vectors. *Methods in Molecular Biolog*, vol 235. Humana Press. ISBN: 978-1-58829-151-6.
- Cavallo JD, Plesiat P, Couetdic G, Leblanc F, Fabre R, *et al.* (2002). Mechanisms of beta-lactam resistance in *Pseudomonas aeruginosa*: prevalence of OprM-overproducing strains in a French multicentre study (1997). *J Antimicrob Chemother.* 50 (6); 1039-43.

- CDC (Centers for Disease Control and Prevention). (2013). Antibiotic resistance threats in the United States, 2013.
- Ceccarelli D, Daccord A, Rene M, Burrus V. (2008). Identification of the origin of transfer (oriT) and a new gene required for mobilization of the SXT/R391 family of integrating conjugative elements. *J Bacteriol.* 190 (15); 5328-38. 10.1128/JB.00150-08.
- Ceccarelli D, Spagnoletti M, Bacciu D, Danin-Poleg Y, Mendiratta DK, Kashi Y *et al.* (2011). ICEVchInd5 is prevalent in epidemic *Vibrio cholerae* O1 El Tor strains isolated in India. *Int J Med Microbiol.* 301 (4); 318-24. 10.1016/j.ijmm.2010.11.005.
- Ceccarelli D, Salvia AM, Sami J, Cappuccinelli P, Colombo MM. (2006). New cluster of plasmid-located class 1 integrons in *Vibrio cholerae* O1 and a *dfrA15* cassette-containing integron in *Vibrio parahaemolyticus* isolated in Angola. *Antimicrob Agents Chemother.* 50 (7); 2493-9. 10.1128/AAC.01310-05.
- Chang CY, Lu PL, Lin CC, Lee TM, Tsai MY, Chang LL. (2011). Integron types, gene cassettes, antimicrobial resistance genes and plasmids of *Shigella sonnei* isolates from outbreaks and sporadic cases in Taiwan. *J Med Microbiol.* 60 (2); 197-204. 10.1099/jmm.0.022517-0.
- Chakraborty R, Chakraborty S, De K, Sinha S, Mukhopadhyay AK, Khanam J *et al.* (2005). Cytotoxic and cell vacuolating activity of *Vibrio fluvialis* isolated from paediatric patients with diarrhoea. *J Med Microbiol.* 54 (Pt 8); 707-16. 10.1099/jmm.0.45820-0.
- Chen CY, Wu KM, Chang YC, Chang CH, Tsai HC, Liao TL *et al.* (2003). Comparative genome analysis of *Vibrio vulnificus*, a marine pathogen. *Genome research.* 13 (12); 2577-87. 10.1101/gr.1295503.
- Chowdhury G, Pazhani GP, Dutta D, Guin S, Dutta S, Ghosh S *et al.* (2012). *Vibrio fluvialis* in patients with diarrhoea, Kolkata, India. *Emerg Infect Dis.* 18 (11); 1868-71. 10.3201/eid1811.120520.
- Chowdhury G, Pazhani GP, Nair GB, Ghosh A, Ramamurthy T. (2011). Transferable plasmid-mediated quinolone resistance in association with extended-spectrum beta-lactamases and fluoroquinolone-acetylating aminoglycoside-6'-n-

References

- acetyltransferase in clinical isolates of *Vibrio fluvialis*. *Int J Antimicrob Agents*. 38 (2); 169-73. 10.1016/j.ijantimicag.2011.04.013.
- Chowdhury G, Pazhani GP, Sarkar A, Rajendran K, Mukhopadhyay AK, Bhattacharya MK *et al.* (2016). Carbapenem resistance in clonally distinct clinical strains of *Vibrio fluvialis* isolated from diarrhoeal samples. *Emerg Infect Dis*. 22 (10); 1754-61. 10.3201/eid2210.151612.
- Chowdhury G, Sarkar A, Pazhani GP, Mukhopadhyay AK, Bhattacharya MK, Ramamurthy T. (2013). An outbreak of foodborne gastroenteritis caused by dual pathogens, *Salmonella enterica* serovar weltevreden and *Vibrio fluvialis* in Kolkata, India. *Foodborne Pathog Dis*. 10 (10); 904-6. 10.1089/fpd.2013.1491.
- Christensen-Dalsgaard M, Gerdes K. (2006). Two higba loci in the *Vibrio cholerae* superintegron encode mRNA cleaving enzymes and can stabilize plasmids. *Mole Microbiol*. 62 (2); 397-411. 10.1111/j.1365-2958.2006.05385.x.
- Ciesielczuk H, Hornsey M, Choi V, Woodford N, Wareham DW (2013). Development and evaluation of a multiplex pcr for eight plasmid-mediated quinolone-resistance determinants. *J Med Microbiol*. 62 (Pt 12); 1823-7. 10.1099/jmm.0.064428-0.
- Clinical and Laboratory Standards Institute (2010). Performance standards of antimicrobial disk susceptibility tests, *CLSI* ; 30 (1).
- Clinical and Laboratory Standards Institute (2015). Performance standards of antimicrobial disk susceptibility tests, *CLSI*; M02-A12.
- Clark CA, Purins L, Kaewrakon P, Focareta T, Manning PA. (2000). The *Vibrio cholerae* O1 chromosomal integron. *Microbiol*. 146 (Pt 10) 2605-12. 10.1099/00221287-146-10-2605.
- Connor TR, Barker CR, Baker KS, Weill FX, Talukder KA, Smith AM *et al.* (2015). Species-wide whole genome sequencing reveals historical global spread and recent local persistence in *Shigella flexneri*. *Elife*. 4 e07335. 10.7554/eLife.07335.
- Coetzee JN, Datta N, Hedges RW. (1972). R factors from *Proteus rettgeri*. *J Gen Microbiol*. 72 (3); 543-52. 10.1099/00221287-72-3-543.

References

- Collis CM, Hall RM. (1995). Expression of antibiotic resistance genes in the integrated cassettes of integrons. *Antimicrob Agents Chemother.* 39 (1); 155-62.
- Collis CM, Hall RM. (2004). Comparison of the structure-activity relationships of the integron-associated recombination sites attI3 and attI1 reveals common features. *Microbiol.* 150 (Pt 5); 1591-601. 10.1099/mic.0.26596-0.
- Collis CM, Kim MJ, Stokes HW, Hall RM. (2002a). Integron-encoded IntI integrases preferentially recognize the adjacent cognate attI site in recombination with a 59-be site. *Mol Microbiol.* 46 (5); 1415-27.
- Collis CM, Kim MJ, Partridge SR, Stokes HW, Hall RM. (2002b). Characterization of the class 3 integron and the site-specific recombination system it determines. *J Bacteriol.* 184 (11); 3017-26.
- Collis CM, Kim MJ, Stokes HW, Hall RM. (1998). Binding of the purified integron DNA integrase IntI1 to integron- and cassette-associated recombination sites. *Mol Microbiol.* 29 (2); 477-90.
- Correia M, Boavida F, Grosso F, Salgado MJ, Lito LM, Cristino JM *et al.* (2003). Molecular characterization of a new class 3 integron in *Klebsiella pneumoniae*. *Antimicrob Agents Chemother.* 47 (9); 2838-43.
- Couturier M, Bex F, Bergquist PL, Maas WK. (1988). Identification and classification of bacterial plasmids. *Microbiol Rev.* 52 (3); 375-95.
- Cui X, Yang C, Wang J, Liang B, Yi S, Li H *et al.* (2015). Antimicrobial resistance of *Shigella flexneri* serotype 1b isolates in China. *PLoS One.* 10 (6); e0129009. 10.1371/journal.pone.0129009.
- da Fonseca EL, Vicente AC. (2012). Functional characterization of a Cassette-specific promoter in the class 1 integron-associated qnrVC1 gene. *Antimicrob Agents Chemother.* 56 (6); 3392-4. 10.1128/AAC.00113-12.
- da Fonseca EL, Santos Freitas FD, Vicente APC. (2011). Pc promoter from class 2 integrons and the cassette transcription pattern it evokes. *J Antimicrob Chemother.* 66(4); 797–801. <https://doi.org/10.1093/jac/dkr011>
- Dalsgaard A, Forslund A, Sandvang D, Arntzen L, Keddy K. (2001). *Vibrio cholerae* O1 outbreak isolates in Mozambique and South Africa in 1998 are multiple-

- drug resistant, contain the SXT element and the *aadA2* gene located on class 1 integrons. *J Antimicrob Chemother.* 48 (6); 827-38.
- Dalsgaard A, Forslund A, Petersen A, Brown DJ, Dias F, Monteiro S *et al.* (2000). 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 (10); 3774-9.
- Demarre G, Frumerie C, Gopaul DN, Mazel D. (2007). Identification of key structural determinants of the *IntI1* integron integrase that influence *attC* x *attI1* recombination efficiency. *Nucleic Acids Res.* 35 (19); 6475-89. 10.1093/nar/gkm709.
- Di Conza J, Ayala JA, Porto A, Mollerach M, Gutkind G. (2005). Molecular characterization of *InJR06*, a class 1 integron located in a conjugative plasmid of *Salmonella enterica* ser. Typhimurium. *Int Microbiol.* 8 (4); 287-90.
- Drouin F, Melancon J, Roy PH. (2002). The *IntI*-like tyrosine recombinase of *Shewanella oneidensis* is active as an integron integrase. *J Bacteriol.* 184 (6); 1811-5.
- Dubois V, Parizano MP, Arpin C, Coulange L, Beziau MC, Quentin C. (2007). High genetic stability of integrons in clinical isolates of *Shigella* spp. of worldwide origin. *Antimicrob Agents Chemother.* 51 (4); 1333-40. 10.1128/AAC.01109-06.
- Dutta S, Kawamura Y, Ezaki T, Nair GB, Iida K, Yoshida S (2005). Alteration in the *gyra* subunit of DNA gyrase and the *parc* subunit of topoisomerase iv in quinolone-resistant *Shigella dysenteriae* serotype 1 clinical isolates from Kolkata, India. *Antimicrob Agents Chemother.* 49 (4); 1660-1. 10.1128/AAC.49.4.1660-1661.2005.
- Eftekhari N, Bakhshi B, Pourshafie MR, Zarbakhsh B, Rahbar M, Hajia M *et al.* (2013). Genetic diversity of *Shigella* spp. and their integron content. *Foodborne Pathog Dis.* 10 (3); 237-42. 10.1089/fpd.2012.1250.
- Esposito D, Scocca JJ. (1997). The integrase family of tyrosine recombinases: evolution of a conserved active site domain. *Nucleic Acids Res.* 25 (18); 3605-14.

References

- Faruque SM, Albert MJ, Mekalanos JJ. (1998). Epidemiology, genetics, and ecology of toxigenic *Vibrio cholerae*. *Microbiol Mol Biol Rev.* 62 (4); 1301-14.
- Faruque SM and Nair GB. (2008). *Vibrio cholerae*: Genomics and Molecular Biology. Caister. Academic press. ISBN:9781904455332.
- Fluit AC, Schmitz FJ. (2004). Resistance integrons and super-integrons. *Clinic Microbiol Infect.* 10 (4); 272-88. 10.1111/j.1198-743X.2004.00858.x.
- Folster JP, Katz L, McCullough A, Parsons MB, Knipe K, Sammons SA *et al.* (2014). Multidrug-resistant IncA/C plasmid in *Vibrio cholerae* from Haiti. *Emerg Infect Dis.* 20 (11); 1951-3. 10.3201/eid2011.140889.
- Folster JP, Pecic G, Bowen A, Rickert R, Carattoli A, Whichard JM. (2011). Decreased susceptibility to ciprofloxacin among *Shigella* isolates in the United States, 2006 to 2009. *Antimicrob Agents Chemother.* 55 (4); 1758-60. 10.1128/AAC.01463-10.
- Fonseca EL, Dos Santos Freitas F, Vieira VV, Vicente AC. (2008). New *qnr* gene cassettes associated with superintegron repeats in *Vibrio cholerae* O1. *Emerg Infect Dis.* 14 (7); 1129-31. 10.3201/eid1407.080132.
- Fonseca EL, Vicente AC. (2013). Epidemiology of *qnrVC* alleles and emergence out of the *Vibrionaceae* family. *J Med Microbiol.* 62 (Pt 10); 1628-30. 10.1099/jmm.0.062661-0.
- Furniss AL, Lee JV, Donovan TJ. (1977). Group F a new *Vibrio*? *Lancet.* 2 (8037); 565-6.
- Gassama Sow A, Aidara-Kane A, Barraud O, Gatet M, Denis F, Ploy MC. (2010). High prevalence of trimethoprim-resistance cassettes in class 1 and 2 integrons in senegalese *Shigella* spp isolates. *J Infect Dev Ctries.* 4 (4); 207-12.
- Gassama Sow A, Diallo MH, Gatet M, Denis F, Aidara-Kane A, Ploy MC. (2008). Description of an unusual class 2 integron in *Shigella sonnei* isolates in Senegal (sub-saharan Africa). *J Antimicrob Chemother.* 62 (4); 843-4. 10.1093/jac/dkn264.
- Gassama-Sow A, Diallo MH, Boye CS, Garin B, Sire JM, Sow AI *et al.* (2006). Class 2 integron-associated antibiotic resistance in *Shigella sonnei* isolates in Dakar, Senegal. *Int J Antimicrob Agents.* 27 (3); 267-70. 10.1016/j.ijantimicag.2005.10.016.

References

- Gerdes K, Gultyaev AP, Franch T, Pedersen K, Mikkelsen ND. (1997). Antisense RNA-regulated programmed cell death. *Ann Rev Genet.* 31 1-31. 10.1146/annurev.genet.31.1.1.
- Ghosh A, Ramamurthy T. (2011). Antimicrobials & cholera: Are we stranded? *Indian J Med Res.* 133 225-31.
- Ghosh S, Pazhani GP, Chowdhury G, Guin S, Dutta S, Rajendran K *et al.* (2011). Genetic characteristics and changing antimicrobial resistance among *Shigella* spp. isolated from hospitalized diarrhoeal patients in Kolkata, India. *J Med Microbiol.* 60 (Pt 10); 1460-6. 10.1099/jmm.0.032920-0.
- Ghosh A, Saha DR, Hoque KM, Asakuna M, Yamasaki S, Koley H *et al.* (2006). Enterotoxigenicity of mature 45-kilodalton and processed 35-kilodalton forms of hemagglutinin protease purified from a cholera toxin gene-negative *Vibrio cholerae* non-O1, non-O139 strain. *Infect Immun.* 74 (5); 2937-46. 10.1128/IAI.74.5.2937-2946.2006.
- Ghosh S, Pazhani GP, Niyogi SK, Nataro JP, Ramamurthy T. (2014). Genetic characterization of *Shigella* spp. isolated from diarrhoeal and asymptomatic children. *J Med Microbiol.* 63 (Pt 7); 903-10. 10.1099/jmm.0.070912-0.
- Glass RI, Huq MI, Lee JV, Threlfall EJ, Khan MR, Alim AR *et al.* (1983). Plasmid-borne multiple drug resistance in *Vibrio cholerae* serogroup O1, biotype El Tor: Evidence for a point-source outbreak in Bangladesh. *J Infect Dis.* 147 (2); 204-9.
- Goel AK, Jiang SC. (2010). Genetic determinants of virulence, antibiogram and altered biotype among the *Vibrio cholerae* O1 isolates from different cholera outbreaks in India. *Infect Genet Evol.* 10 (6); 815-9. 10.1016/j.meegid.2009.06.022.
- Goldstein C, Lee MD, Sanchez S, Hudson C, Phillips B, Register B *et al.* (2001). Incidence of class 1 and 2 integrases in clinical and commensal bacteria from livestock, companion animals, and exotics. *Antimicrob Agents Chemother.* 45 (3); 723-6. 10.1128/AAC.45.3.723-726.2001.
- Gould IM, Bal AM. (2013). New antibiotic agents in the pipeline and how they can help overcome microbial resistance. *Virulence* 4; 185-91.

- Gravel A, Fournier B, Roy PH. (1998). DNA complexes obtained with the integron integrase IntI1 at the attI1 site. *Nucleic Acids Res.* 26 (19); 4347-55.
- Guerineau F, Brooks L, Mullineaux P. (1990). Expression of the sulfonamide resistance gene from plasmid R46. *Plasmid.* 23 (1); 35-41.
- Gu B, Cao Y, Pan S, Zhuang L, Yu R, Peng Z *et al.* (2012). Comparison of the prevalence and changing resistance to nalidixic acid and ciprofloxacin of *Shigella* between Europe-America and Asia-Africa from 1998 to 2009. *Int J Antimicrob Agents.* 40 (1); 9-17. 10.1016/j.ijantimicag.2012.02.005.
- Gu B, Pan S, Wang T, Zhao W, Mei Y, Huang P *et al.* (2008). Novel cassette arrays of integrons in clinical strains of enterobacteriaceae in China. *Int J Antimicrob Agents.* 32 (6); 529-33. 10.1016/j.ijantimicag.2008.06.019.
- Gu B, Zhou M, Ke X, Pan S, Cao Y, Huang Y *et al.* (2015). Comparison of resistance to third-generation cephalosporins in *Shigella* between Europe-America and Asia-Africa from 1998 to 2012. *Epidemiol Infect.* 143 (13); 2687-99. 10.1017/S0950268814003446.
- Hansson K, Sundstrom L, Pelletier A, Roy PH. (2002). IntI2 integron integrase in Tn7. *J Bacteriol.* 184 (6); 1712-21.
- Harada S, Ishii Y, Saga T, Tateda K, Yamaguchi K. (2010). Chromosomally encoded blaCMY-2 located on a novel SXT/R391-related integrating conjugative element in a *Proteus mirabilis* clinical isolate. *Antimicrob Agents Chemother.* 54 (9); 3545-50. 10.1128/AAC.00111-10.
- Hassing RJ, Melles DC, Goessens WH, Rijnders BJ. (2014). Case of *Shigella flexneri* infection with treatment failure due to azithromycin resistance in an HIV-positive patient. *Infect.* 42 (4); 789-90. 10.1007/s15010-014-0594-4.
- Hayes F. (2003). Toxins-antitoxins: plasmid maintenance, programmed cell death, and cell cycle arrest. *Science.* 301 (5639); 1496-9. 10.1126/science.1088157.
- Hazen TH, Wu D, Eisen JA, Sobecky PA. (2007). Sequence characterization and comparative analysis of three plasmids isolated from environmental *Vibrio* spp. *Appl Environ Microbiol.* 73 (23); 7703-10. 10.1128/AEM.01577-07.
- Heddle J, Maxwell A. (2002). Quinolone-binding pocket of DNA gyrase: role of GyrB. *Antimicrob Agents Chemother.* 46; 1805-15.

References

- Heidelberg JF, Eisen JA, Nelson WC, Clayton RA, Gwinn ML, Dodson RJ *et al.* (2000). DNA sequence of both chromosomes of the cholera pathogen *Vibrio cholerae*. *Nature*. 406 (6795); 477-83. 10.1038/35020000.
- Heiman KE, Karlsson M, Grass J, Howie B, Kirkcaldy RD, Mahon B *et al.* (2014). Notes from the field: *Shigella* with decreased susceptibility to azithromycin among men who have sex with men - United States, 2002-2013. *Morb Mortal Wkly Rep*. 63 (6); 132-3.
- Hochhut B, Beaber JW, Woodgate R, Waldor MK. (2001b). Formation of chromosomal tandem arrays of the SXT element and R391, two conjugative chromosomally integrating elements that share an attachment site. *J Bacteriol*. 183 (4); 1124-32. 10.1128/JB.183.4.1124-1132.2001.
- Hochhut B, Lotfi Y, Mazel D, Faruque SM, Woodgate R, Waldor MK. (2001a). Molecular analysis of antibiotic resistance gene clusters in *Vibrio cholerae* O139 and O1 SXT constins. *Antimicrob Agents Chemother*. 45 (11); 2991-3000. 10.1128/AAC.45.11.2991-3000.2001.
- Hochhut B, Waldor MK. (1999). Site-specific integration of the conjugal *Vibrio cholerae* SXT element into *prfC*. *Mol Microbiol*. 32 (1); 99-110.
- Hodge TW, Levy CS, Smith MA. (1995). Diarrhoea associated with *Vibrio fluvialis* infection in a patient with AIDS. *Clin Infect Dis*. 21 (1); 237-8.
- Holt KE, Baker S, Weill FX, Holmes EC, Kitchen A, Yu J *et al.* (2012). *Shigella sonnei* genome sequencing and phylogenetic analysis indicate recent global dissemination from Europe. *Nat Genet*. 44 (9); 1056-9. 10.1038/ng.2369.
- Howie RL, Folster JP, Bowen A, Barzilay EJ, Whichard JM. (2010). Reduced azithromycin susceptibility in *Shigella sonnei*, United States. *Microb Drug Resist*. 16 (4); 245-8. 10.1089/mdr.2010.0028.
- Huang KC, Hsu RW. (2005). *Vibrio fluvialis* hemorrhagic cellulitis and cerebritis. *Clin Infect Dis*. 40 (9); e75-7. 10.1086/429328.
- Hunter, SB, Vauterin, P, Lambert-Fair MA, Van Duyne MS, Kubota, K, Graves L, *et al.* (2005). Establishment of a universal size standard strain for use with the pulsenet standardized pulsed-field gel electrophoresis protocols: Converting the national databases to the new size standard. *J Clin Microbiol*. 43 (3); 1045-50. 10.1128/JCM.43.3.1045-1050.2005.

- Huq MI, Alam AK, Brenner DJ, Morris GK. (1980). Isolation of *Vibrio*-like group, EF-6, from patients with diarrhoea. *J Clin Microbiol.* 11 (6); 621-4.
- Iqbal MS, Rahman M, Islam R, Banik A, Amin MB, Akter F *et al.* (2014). Plasmid-mediated sulfamethoxazole resistance encoded by the *sul2* gene in the multidrug-resistant *Shigella flexneri* 2a isolated from patients with acute diarrhoea in Dhaka, Bangladesh. *PLoS One.* 9 (1); e85338. 10.1371/journal.pone.0085338.
- Jain M, Kumar P, Goel AK, Kamboj DV, Singh L. (2008). Class 1 integrons and *sxt* elements conferring multidrug resistance in *Vibrio cholerae* O1 strains associated with a recent large cholera outbreak in Orissa, eastern India. *Int J Antimicrob Agents.* 32 (5); 459-60. 10.1016/j.ijantimicag.2008.05.003.
- Jin YH, Oh YH, Jung JH, Kim SJ, Kim JA, Han KY *et al.* (2010). Antimicrobial resistance patterns and characterization of integrons of *Shigella sonnei* isolates in Seoul, 1999-2008. *J Microbiol.* 48 (2); 236-42. 10.1007/s12275-010-9220-z.
- Jove T, Da Re S, Denis F, Mazel D, Ploy MC. (2010). Inverse correlation between promoter strength and excision activity in class 1 integrons. *PLoS genet.* 6 (1); e1000793. 10.1371/journal.pgen.1000793.
- Kabir I, Khan WA, Haider R, Mitra AK, Alam AN. (1996). Erythromycin and trimethoprim-sulphamethoxazole in the treatment of cholera in children. *J Diarrhoeal Dis Res.* 14(4); 243-7.
- Kakinuma Y, Maeda Y, Mason C, *et al.* (2012). Molecular characterisation of the quinolone resistance-determining regions (QRDR) including *gyrA*, *gyrB*, *parC* and *parE* genes in *Streptococcus pneumoniae*. *Br J Biomed Sci.* 69: 123-5.
- Kanungo S, Sah BK, Lopez AL, Sung JS, Paisley AM, Sur D *et al.* (2010). Cholera in India: An analysis of reports, 1997-2006. *Bull World Health Organ.* 88 (3); 185-91. 10.2471/BLT.09.073460.
- Keusch GT. (1998). The rediscovery of shiga toxin and its role in clinical disease. *Jpn J Med Sci Biol.* 51 Suppl S5-22.
- Khan WA, Bennish ML, Seas C, Khan EH, Ronan A, Dhar U, *et al.* (1996). Randomised controlled comparison of single-dose ciprofloxacin and doxycycline for cholera caused by *Vibrio cholerae* O1 or O139. *Lancet.* 348(9023); 296-300.

References

- Khurana S, Taneja N, Thapar R, Sharma M, Malla N. (2008). Intestinal bacterial and parasitic infections among food handlers in a tertiary care hospital of North India. *Trop Gastroenterol.* 29 (4); 207-9.
- Kim HB, Wang M, Ahmed S, Park CH, LaRocque RC, Faruque AS *et al.* (2010). Transferable quinolone resistance in *Vibrio cholerae*. *Antimicrob Agents Chemother.* 54 (2); 799-803. 10.1128/AAC.01045-09.
- Kim JY, Kim SH, Jeon SM, Park MS, Rhie HG, Lee BK (2008). Resistance to fluoroquinolones by the combination of target site mutations and enhanced expression of genes for efflux pumps in *Shigella flexneri* and *Shigella sonnei* strains isolated in Korea. *Clin Microbiol Infect.* 14 (8); 760-5. 10.1111/j.1469-0691.2008.02033.x.
- Kitaoka M, Miyata ST, Unterweger D, Pukatzki S. (2011). Antibiotic resistance mechanisms of *Vibrio cholerae*. *J Med Microbiol.* 60 (4); 397-407. 10.1099/jmm.0.023051-0.
- Klontz KC, Singh N. (2015). Treatment of drug-resistant Shigella infections. *Expert Rev Anti Infect Ther.* 13(1):69-80. 10.1586/14787210.2015.983902
- Kobayashi I. (2001). Behavior of restriction-modification systems as selfish mobile elements and their impact on genome evolution. *Nucleic Acids res.* 29 (18); 3742-56.
- Kotloff KL, Winickoff JP, Ivanoff B, Clemens JD, Swerdlow DL, Sansonetti PJ *et al.* (1999). Global burden of *Shigella* infections: Implications for vaccine development and implementation of control strategies. *Bull World Health Organ.* 77 (8); 651-66.
- Kolb EA, Eppes SC, Klein JD. (1997). *Vibrio fluvialis*: an underrecognized enteric pathogen in infants? *South Med J.* 90 (5); 544-5.
- Kollek R, Oertel W, Goebel W. (1978). Isolation and characterization of the minimal fragment required for autonomous replication ("basic replicon") of a copy mutant (pKN102) of the antibiotic resistance factor R1. *Mol Gen Genet.* 162 (1); 51-7.
- Koonin EV, Makarova KS, Aravind L. (2001). Horizontal gene transfer in prokaryotes: quantification and classification. *Annu Rev Microbiol.* 55 709-42. 10.1146/annurev.micro.55.1.709.

- Kumar P, Thomas S. (2009). Presence of *dfr6* gene cassette in superintegron of non-O1/non-O139 strain of *Vibrio cholerae*. *Antimicrob Agents Chemother.* 53 (11); 4959-60. 10.1128/AAC.00540-09.
- Kumar P, Thomas S. (2011). Presence of *qnrVC3* gene cassette in SXT and class 1 integrons of *Vibrio cholerae*. *Int J Antimicrob Agents.* 37 (3); 280-1. 10.1016/j.ijantimicag.2010.12.006.
- Kutar BM, Rajpara N, Upadhyay H, Ramamurthy T, Bhardwaj AK. (2013). Clinical isolates of *Vibrio cholerae* O1 El Tor ogawa of 2009 from Kolkata, India: Preponderance of SXT element and presence of haitian *ctxB* variant. *PLoS One.* 8 (2); e56477. 10.1371/journal.pone.0056477.
- Labbate M, Case RJ, Stokes HW. (2009). The integron/gene cassette system: An active player in bacterial adaptation. *Method Mole Biol.* 532 103-25. 10.1007/978-1-60327-853-9_6.
- Lagana P, Caruso G, Minutoli E, Zaccone R, Santi D. (2011). Susceptibility to antibiotics of *Vibrio* spp. and *Photobacterium damsela* sp. Piscicida strains isolated from Italian aquaculture farms. *New Microbiol.* 34 (1); 53-63.
- Lee JV, Shread P, Furniss AL, Bryant TN. (1981). Taxonomy and description of *Vibrio fluvialis* sp. nov. (synonym group F *Vibrios*, group EF6). *J Appl Bacteriol.* 50 (1); 73-94.
- Lee W, Chung HS, Lee H, Yum JH, Yong D, Jeong SH *et al.* (2013). Ctx-m-55-type extended-spectrum beta-lactamase-producing *Shigella sonnei* isolated from a Korean patient who had travelled to China. *Ann Lab Med.* 33 (2); 141-4. 10.3343/alm.2013.33.2.141.
- Le Roux F, Zouine M, Chakroun N, Binesse J, Saulnier D, Bouchier C *et al.* (2009). Genome sequence of *Vibrio splendidus*: an abundant planctonic marine species with a large genotypic diversity. *Environ Microbiol.* 11 (8); 1959-70. 10.1111/j.1462-2920.2009.01918.x.
- Levesque C, Brassard S, Lapointe J, Roy PH. (1994). Diversity and relative strength of tandem promoters for the antibiotic-resistance genes of several integrons. *Gene.* 142 (1); 49-54.
- Liebert CA, Hall RM, Summers AO. (1999). Transposon Tn21, flagship of the floating genome. *Microbiol Mol Biol Rev.* 63 (3); 507-22.

References

- Levine MM, Kotloff KL, Barry EM, Pasetti MF, Sztein MB. (2007). Clinical trials of *Shigella* vaccines: Two steps forward and one step back on a long, hard road. *Nat Rev Microbiol.* 5 (7); 540-53. 10.1038/nrmicrO1662.
- Levine WC, Griffin PM. (1993). *Vibrio* infections on the gulf coast: Results of first year of regional surveillance. Gulf coast *Vibrio* working group. *J Infect Dis.* 167 (2); 479-83.
- Li R, Wong MH, Zhou Y, Chan EW, Chen S. (2015a). Complete nucleotide sequence of a conjugative plasmid carrying *bla*(per-1). *Antimicrob Agents Chemother.* 59 (6); 3582-4. 10.1128/AAC.00518-15.
- Li R, Lin D, Chen K, Wong MH, Chen S. (2015b). First detection of AmpC beta-lactamase *bla*(cmy-2) on a conjugative IncA/C plasmid in a *Vibrio parahaemolyticus* isolate of food origin. *Antimicrob Agents Chemother.* 59 (7); 4106-11. 10.1128/AAC.05008-14.
- Liang P, Cui X, Du X, Kan B, Liang W. (2013). The virulence phenotypes and molecular epidemiological characteristics of *Vibrio fluvialis* in China. *Gut Pathog.* 5 (1); 6. 10.1186/1757-4749-5-6.
- Liu L, Johnson HL, Cousens S, Perin J, Scott S, Lawn JE *et al.* (2012). Global, regional, and national causes of child mortality: An updated systematic analysis for 2010 with time trends since 2000. *Lancet.* 379 (9832); 2151-61. 10.1016/S0140-6736(12)60560-1.
- Liu M, Wong MH, Chen S. (2013a). Molecular characterisation of a multidrug resistance conjugative plasmid from *Vibrio parahaemolyticus*. *Int J Antimicrob Agents.* 42 (6); 575-9. 10.1016/j.ijantimicag.2013.08.014.
- Liu M, Chen S. (2013b). Draft Genome Sequence of *Vibrio parahaemolyticus* V110, Isolated from Shrimp in Hong Kong. *Genome announcements.* 1 (3); 10.1128/genomeA.00300-13.
- Livio S, Strockbine NA, Panchalingam S, Tennant SM, Barry EM, Marohn ME *et al.* (2014). *Shigella* isolates from the global enteric multicenter study inform vaccine development. *Clin Infect Dis.* 59 (7); 933-41. 10.1093/cid/ciu468.
- Lu X, Liang W, Wang Y, Xu J, Zhu J, Kan B. (2014). Identification of genetic bases of *Vibrio fluvialis* species-specific biochemical pathways and potential

References

- virulence factors by comparative genomic analysis. *Appl Environ Microbiol.* 80 (6); 2029-37. 10.1128/AEM.03588-13.
- Luck SN, Turner SA, Rajakumar K, Sakellaris H, Adler B. (2001). Ferric dicitrate transport system (*fec*) of *Shigella flexneri* 2a YSH6000 is encoded on a novel pathogenicity island carrying multiple antibiotic resistance genes. *Infect Immun.* 69 (10); 6012-21. 10.1128/IAI.69.10.6012-6021.2001.
- Lunguya O, Lejon V, Phoba M-F, *et al.*, (2012). *Salmonella typhi* in the Democratic Republic of the Congo: fluoroquinolone decreased susceptibility on the rise. *Plos Negl Trop Dis.* 6(11): e1921.
- Ma Q, Liu Y, Liu J, Yao M, Yuan G. (2015). Analysis of the drug resistance and the integron resistance gene cassette's characteristics of *Shigella flexneri*. *Zhonghua Er Ke Za Zhi.* 53 (10); 765-70.
- Maguire AJ, Brown DF, Gray JJ, Desselberger U (2001). Rapid screening technique for class 1 integrons in enterobacteriaceae and nonfermenting gram-negative bacteria and its use in molecular epidemiology. *Antimicrob Agents Chemother.* 45 (4); 1022-9. 10.1128/AAC.45.4.1022-1029.2001.
- Magnuson RD. (2007). Hypothetical functions of toxin-antitoxin systems. *J Bacteriol.* 189 (17); 6089-92. 10.1128/JB.00958-07.
- Mandal S, Mandal MD, Pal NK. (2011). Cholera: A great global concern. *Asian Pac J Trop Med.* 4 (7); 573-80. 10.1016/S1995-7645(11)60149-1.
- Mandal J, Ganesh V, Emelda J, Mahadevan S, Parija SC. (2012). The Recent Trends of Shigellosis: A JIPMER Perspective. *J Clinic Diagnos Res.* 6 (9); 1474-7. 10.7860/JCDR/2012/4157.2536.
- Marquez C, Labbate M, Ingold AJ, Roy Chowdhury P, Ramirez MS, Centron D *et al.* (2008). Recovery of a functional class 2 integron from an *Escherichia coli* strain mediating a urinary tract infection. *Antimicrob Agents Chemother.* 52 (11); 4153-4. 10.1128/AAC.00710-08.
- Martin C, Timm J, Rauzier J, Gomez-Lus R, Davies J, Gicquel B. (1990). Transposition of an antibiotic resistance element in mycobacteria. *Nature.* 345 (6277); 739-43. 10.1038/345739a0.
- Matar GM, Jaafar R, Sabra A, Hart CA, Corkill JE, Dbaibo GS *et al.* (2007). First detection and sequence analysis of the *bla*-ctx-m-15 gene in lebanese isolates

- of extended-spectrum-beta-lactamase-producing *Shigella sonnei*. *Ann Trop Med Parasitol*. 101 (6); 511-7. 10.1179/136485907X193860.
- Mazel D. (2006). Integrons: Agents of bacterial evolution. *Nature rev Microbiol*. 4 (8); 608-20. 10.1038/nrmicro1462.
- Mazel D, Dychinco B, Webb VA, Davies J. (1998). A distinctive class of integron in the *Vibrio cholerae* genome. *Science*. 280 (5363); 605-8.
- Melano R, Petroni A, Garutti A, Saka HA, Mange L, Pasteran F *et al.* (2002). New carbenicillin-hydrolyzing beta-lactamase (CARB-7) from *Vibrio cholerae* non-O1, non-O139 strains encoded by the VCR region of the *V. cholerae* genome. *Antimicrob Agents Chemother*. 46 (7); 2162-8.
- Messier N, Roy PH. (2001). Integron integrases possess a unique additional domain necessary for activity. *J Bacteriol*. 183 (22); 6699-706. 10.1128/JB.183.22.6699-6706.2001.
- Mitsuhashi S, Harada K, Hashimoto H, Egawa R. (1961). On the drug-resistance of enteric bacteria. 4. Drug-resistance of *Shigella* prevalent in Japan. *Jpn J Exp Med*. 31 47-52.
- Mohapatra H, Mohapatra SS, Mantri CK, Colwell RR, Singh DV. (2008). *Vibrio cholerae* non-O1, non-O139 strains isolated before 1992 from Varanasi, India are multiple drug resistant, contain *intsxt*, *dfr18* and *aadA5* genes. *Environ Microbiol*. 10 (4); 866-73. 10.1111/j.1462-2920.2007.01502.x.
- Mutreja A, Kim DW, Thomson NR, Connor TR, Lee JH, Kariuki S *et al.* (2011). Evidence for several waves of global transmission in the seventh cholera pandemic. *Nature*. 477 (7365); 462-5. 10.1038/nature10392.
- Murray MG, Thompson WF. (1980). Rapid isolation of high molecular weight plant DNA. *Nucleic Acids Res*. 8 (19); 4321-5.
- Nandi S, Maurer JJ, Hofacre C, Summers AO. (2004). Gram-positive bacteria are a major reservoir of class 1 antibiotic resistance integrons in poultry litter. *PNAS*. 101 (18); 7118-22. 10.1073/pnas.0306466101.
- Nelson EJ, Harris JB, Morris JG, Calderwood SB, Camilli A. (2009). Cholera transmission: The host, pathogen and bacteriophage dynamic. *Nat Rev Microbiol*. 7 (10); 693-702. 10.1038/nrmicro2204.

References

- Nesvera J, Hochmannova J, Patek M. (1998). An integron of class 1 is present on the plasmid *pcg4* from gram-positive bacterium *Corynebacterium glutamicum*. *FEMS microbiol let.* 169 (2); 391-5.
- Nguyen NT, Ha V, Tran NV, Stabler R, Pham DT, Le TM *et al.* (2010). The sudden dominance of *bla*CTX-M harbouring plasmids in *Shigella* spp. circulating in southern Vietnam. *PLoS Negl Trop Dis.* 4 (6); e702. 10.1371/journal.pntd.0000702.
- Nield BS, Willows RD, Torda AE, Gillings MR, Holmes AJ, Nevalainen KM *et al.* (2004). New enzymes from environmental cassette arrays: functional attributes of a phosphotransferase and an RNA-methyltransferase. *Protein Sci.* 13 (6); 1651-9. 10.1110/ps.04638704.
- Niyogi SK. (2005). Shigellosis. *J Microbiol.* 43 (2); 133-43.
- Nogrady N, Kiraly M, Borbas K, Toth A, Paszti J, Toth I. (2013). Antimicrobial resistance and genetic characteristics of integron-carrier *Shigellae* isolated in Hungary (1998-2008). *J Med Microbiol.* 62 (Pt 10); 1545-51. 10.1099/jmm.0.058917-0.
- Nordstrom K. (2006). Plasmid R1--replication and its control. *Plasmid.* 55 (1); 1-26. 10.1016/j.plasmid.2005.07.002.
- Novick RP. (1987). Plasmid incompatibility. *Microbiol Rev.* 51 (4); 381-95.
- Nunes-Duby SE, Kwon HJ, Tirumalai RS, Ellenberger T, Landy A. (1998). Similarities and differences among 105 members of the Int family of site-specific recombinases. *Nucleic Acids Res.* 26 (2); 391-406.
- Oh JY, Yu HS, Kim SK, Seol SY, Cho DT, Lee JC. (2003). Changes in patterns of antimicrobial susceptibility and integron carriage among *Shigella sonnei* isolates from southwestern Korea during epidemic periods. *J Clin Microbiol.* 41 (1); 421-3.
- Opintan JA, Newman MJ, Nsiah-Poodoh OA, Okeke IN. (2008). *Vibrio cholerae* O1 from Accra, Ghana carrying a class 2 integron and the SXT element. *J Antimicrob Chemother.* 62 (5); 929-33. 10.1093/jac/dkn334.
- Osorio CR, Marrero J, Wozniak RA, Lemos ML, Burrus V, Waldor MK. (2008). Genomic and functional analysis of ICEPdaSpa1, a fish-pathogen-derived

References

- SXT-related integrating conjugative element that can mobilize a virulence plasmid. *J Bacteriol.* 190 (9); 3353-61. 10.1128/JB.00109-08.
- Pan JC, Ye R, Meng DM, Zhang W, Wang HQ, Liu KZ. (2006). Molecular characteristics of class 1 and class 2 integrons and their relationships to antibiotic resistance in clinical isolates of *Shigella sonnei* and *Shigella flexneri*. *J Antimicrob Chemother.* 58 (2); 288-96. 10.1093/jac/dkl228.
- Pan JC, Ye R, Wang HQ, Xiang HQ, Zhang W, Yu XF *et al.* (2008). *Vibrio cholerae* O139 multiple-drug resistance mediated by *Yersinia pestis* pip1202-like conjugative plasmids. *Antimicrob Agents Chemother.* 52 (11); 3829-36. 10.1128/AAC.00375-08.
- Pande K, Mendiratta DK, Vijayashri D, Thamke DC, Narang P. (2012). SXT constin among *Vibrio cholerae* isolates from a tertiary care hospital. *Indian J Med Res.* 135 346-50.
- Pandey DP, Gerdes K. (2005). Toxin-antitoxin loci are highly abundant in free-living but lost from host-associated prokaryotes. *Nucleic acids res.* 33 (3); 966-76. 10.1093/nar/gki201.
- Parsons MB, Cooper KL, Kubota KA, Puhr N, Simington S, Calimlim PS *et al.* (2007). Pulsenet USA standardized pulsed-field gel electrophoresis protocol for subtyping of *Vibrio parahaemolyticus*. *Foodborne Pathog Dis.* 4 (3); 285-92. 10.1089/fpd.2007.0089.
- Park BH, Hendricks M, Malamy MH, Tally FP, Levy SB. (1987). Cryptic tetracycline resistance determinant (class F) from *Bacteroides fragilis* mediates resistance in *Escherichia coli* by actively reducing tetracycline accumulation. *Antimicrob Agents Chemother.* 31 (11); 1739-43.
- Partridge SR, Tsafnat G, Coiera E, Iredell JR. (2009). Gene cassettes and cassette arrays in mobile resistance integrons. *FEMS Microbiol Rev.* 33 (4); 757-84. 10.1111/j.1574-6976.2009.00175.x.
- Pazhani GP, Niyogi SK, Singh AK, Sen B, Taneja N, Kundu M *et al.* (2008). Molecular characterization of multidrug-resistant *Shigella* species isolated from epidemic and endemic cases of shigellosis in India. *J Med Microbiol.* 57 (Pt 7); 856-63. 10.1099/jmm.0.2008/000521-0.

- Pazhani GP, Chakraborty S, Fujihara K, Yamasaki S, Ghosh A, Nair GB *et al.* (2011). QRDR mutations, efflux system & antimicrobial resistance genes in enterotoxigenic *Escherichia coli* isolated from an outbreak of diarrhoea in Ahmedabad, India. *Indian J Med Res.* 134; 214-23.
- Pazhani GP, Ramamurthy T, Mitra U, Bhattacharya SK, Niyogi SK. (2005). Species diversity and antimicrobial resistance of *Shigella* spp. isolated between 2001 and 2004 from hospitalized children with diarrhoea in Kolkata (Calcutta), India. *Epidemiol Infect.* 133 (6); 1089-95. 10.1017/S0950268805004498.
- Pembroke JT, MacMahon C, McGrath B. (2002). The role of conjugative transposons in the *Enterobacteriaceae*. *Cell Mol Life Sci.* 59 (12); 2055-64.
- Penland RL, Boniuk M, Wilhelmus KR. (2000). *Vibrio* ocular infections on the U.S. Gulf Coast. *Cornea.* 19 (1); 26-9.
- Perichon B, Courvalin P, Galimand M. (2007). Transferable resistance to aminoglycosides by methylation of G1405 in 16S rRNA and to hydrophilic fluoroquinolones by QepA-mediated efflux in *Escherichia coli*. *Antimicrob Agents Chemother.* 51: 2464-9.
- Petroni A, Melano RG, Saka HA, Garutti A, Mange L, Pasteran F *et al.* (2004). CARB-9, a carbenicillinase encoded in the VCR region of *Vibrio cholerae* non-O1, non-O139 belongs to a family of cassette-encoded beta-lactamases. *Antimicrob Agents Chemother.* 48 (10); 4042-6. 10.1128/AAC.48.10.4042-4046.2004.
- Ploy MC, Denis F, Courvalin P, Lambert T. (2000). Molecular characterization of integrons in *Acinetobacter baumannii*: Description of a hybrid class 2 integron. *Antimicrob Agents Chemother.* 44 (10); 2684-8.
- Po KH, Wong MH, Chen S. (2015). Identification and characterisation of a novel plasmid-mediated quinolone resistance gene, *qnrVC7*, in *Vibrio cholerae* of seafood origin. *Int J Antimicrob Agents.* 45 (6); 667-8. 10.1016/j.ijantimicag.2015.02.002.
- Pu XY, Pan JC, Gu YM, Zheng W, Li J, Yu H. (2016). Complete sequences and characterization of two novel plasmids carrying *aac(6)-ib-cr* and *qnrS* gene in *Shigella flexneri*. *Microb Drug Resist.* 22 (2); 115-22. 10.1089/mdr.2015.0082.

References

- Pu XY, Pan JC, Zhang W, Zheng W, Wang HQ, Gu YM. (2015). Quinolone resistance-determining region mutations and the plasmid-mediated quinolone resistance gene *qnrS* played important roles in decreased susceptibility to fluoroquinolones among *Shigella* isolates in southeast China between 1998 and 2013. *Int J Antimicrob Agents*. 45 (4); 438-9. 10.1016/j.ijantimicag.2014.12.004.
- Pugliese N, Maimone F, Scrascia M, Materu SF, Pazzani C. (2009). SXT-related integrating conjugative element and IncC plasmids in *Vibrio cholerae* O1 strains in eastern Africa. *J Antimicrob Chemother*. 63 (3); 438-42. 10.1093/jac/dkn542.
- Rahman M, Shoma S, Rashid H, El Arifeen S, Baqui AH, Siddique AK *et al.* (2007). Increasing spectrum in antimicrobial resistance of *Shigella* isolates in Bangladesh: Resistance to azithromycin and ceftriaxone and decreased susceptibility to ciprofloxacin. *J Health Popul Nutr*. 25 (2); 158-67.
- Rahmani F, Fooladi AA, Marashi SM, Nourani MR. (2012). Drug resistance in *Vibrio cholerae* strains isolated from clinical specimens. *Acta Microbiol Immunol Hung*. 59 (1); 77-84. 10.1556/AMicr.59.2012.1.8.
- Rajpara N, Patel A, Tiwari N, Bahuguna J, Antony A, Choudhury I *et al.* (2009). Mechanism of drug resistance in a clinical isolate of *Vibrio fluvialis*: involvement of multiple plasmids and integrons. *Int J Antimicrob Agents*. 34 (3); 220-5. 10.1016/j.ijantimicag.2009.03.020.
- Rajpara N, Kutar BM, Sinha R, Nag D, Koley H, Ramamurthy T *et al.* (2015). Role of integrons, plasmids and SXT elements in multidrug resistance of *Vibrio cholerae* and *Providencia vermicola* obtained from a clinical isolate of diarrhoea. *Front Microbiol*. 6 57. 10.3389/fmicb.2015.00057.
- Rajpara N, Vinothkumar K, Mohanty P, Singh AK, Singh R, Sinha R *et al.* (2013). Synergistic effect of various virulence factors leading to high toxicity of environmental *V. cholerae* non-O1/ non-O139 isolates lacking ctx gene : Comparative study with clinical strains. *PLoS One*. 8 (9); e76200. 10.1371/journal.pone.0076200.
- Ram PK, Crump JA, Gupta SK, Miller MA, Mintz ED. (2008). Part ii. Analysis of data gaps pertaining to *Shigella* infections in low and medium human

- development index countries, 1984-2005. *Epidemiol Infect.* 136 (5); 577-603. 10.1017/S0950268807009351.
- Ramamurthy T, Chowdhury G, Pazhani GP, Shinoda S. (2014). *Vibrio fluvialis*: An emerging human pathogen. *Front Microbiol.* 5; 91. 10.3389/fmicb.2014.00091.
- Rapoport M, Monzani V, Pasteran F, Morvay L, Faccone D, Petroni A *et al.* (2008). Cmy-2-type plasmid-mediated ampc beta-lactamase finally emerging in Argentina. *Int J Antimicrob Agents.* 31 (4); 385-7. 10.1016/j.ijantimicag.2007.11.016.
- Ratnaraja N, Blackmore T, Byrne J, Shi S. (2005). *Vibrio fluvialis* peritonitis in a patient receiving continuous ambulatory peritoneal dialysis. *J Clin Microbiol.* 43 (1); 514-5. 10.1128/JCM.43.1.514-515.2005.
- Recchia GD, Hall RM. (1995). Gene cassettes: A new class of mobile element. *Microbiol.* 141 (Pt 12) 3015-27.
- Ribot EM, Fair MA, Gautom R, Cameron DN, Hunter SB, Swaminathan B *et al.* (2006). Standardization of pulsed-field gel electrophoresis protocols for the subtyping of *Escherichia coli* o157:H7, *Salmonella*, and *Shigella* for pulsenet. *Foodborne Pathog Dis.* 3 (1); 59-67. 10.1089/fpd.2006.3.59.
- Ries AA, Wells JG, Olivola D, Ntakibirora M, Nyandwi S, Ntibakivayo M *et al.* (1994). Epidemic *Shigella dysenteriae* type 1 in Burundi: Panresistance and implications for prevention. *J Infect Dis.* 169 (5); 1035-41.
- Robinson A, Wu PS, Harrop SJ, Schaeffer PM, Dosztanyi Z, Gillings MR *et al.* (2005). Integron-associated mobile gene cassettes code for folded proteins: the structure of Bal32a, a new member of the adaptable alpha+beta barrel family. *J Mol Biol.* 346 (5); 1229-41. 10.1016/j.jmb.2004.12.035.
- Robicsek A, Strahilevitz J, Jacoby GA, *et al.* (2006). Fluoroquinolone-modifying enzyme: a new adaptation of a common aminoglycoside acetyltransferase. *Nat Med.* 12: 83-8.
- Rouch DA, Cram DS, DiBerardino D, Littlejohn TG, Skurray RA. (1990). Efflux-mediated antiseptic resistance gene qacA from *Staphylococcus aureus*: common ancestry with tetracycline- and sugar-transport proteins. *Mol Microbiol.* 4 (12); 2051-62.

- Rowe-Magnus DA, Mazel D. (1999). Resistance gene capture. *Curr Opin Microbiol.* 2 (5); 483-8.
- Rowe-Magnus DA, Guerout AM, Mazel D. (2002). Bacterial resistance evolution by recruitment of super-integron gene cassettes. *Mol Microbiol.* 43 (6); 1657-69.
- Rowe-Magnus DA, Guerout AM, Biskri L, Bouige P, Mazel D. (2003). Comparative analysis of superintegrons: Engineering extensive genetic diversity in the *Vibrionaceae*. *Genome res.* 13 (3); 428-42. 10.1101/gr.617103.
- Roy A, Kucukural A, Zhang Y. (2010). I-TASSER: a unified platform for automated protein structure and function prediction. *Nature protocols.* 5 (4); 725-38. 10.1038/nprot.2010.5.
- Ruekit S, Wangchuk S, Dorji T, Tshering KP, Pootong P, Nobthai P *et al.* (2014). Molecular characterization and pcr-based replicon typing of multidrug resistant *Shigella sonnei* isolates from an outbreak in Thimphu, Bhutan. *BMC Res Notes.* 7 95. 10.1186/1756-0500-7-95.
- Sa LL, Fonseca EL, Pellegrini M, Freitas F, Loureiro EC, Vicente AC. (2010). Occurrence and composition of class 1 and class 2 integrons in clinical and environmental O1 and non-O1/non-O139 *Vibrio cholerae* strains from the Brazilian Amazon. *Mem Inst Oswaldo Cruz.* 105 (2); 229-32.
- Sack DA, Sack RB, Chaignat CL. (2006). Getting serious about cholera. *N Engl J Med.* 355 (7); 649-51. 10.1056/NEJMp068144.
- Sack DA, Lyke C, McLaughlin C, *et al.* (2001) Antimicrobial resistance in shigellosis, cholera and campylobacteriosis. *World Health Organization* 2001; 1-20.
- Saha D, Karim MM, Khan WA, Ahmed S, Salam MA, Bennish ML. (2006). Single-dose azithromycin for the treatment of cholera in adults. *N Engl J Med.* 354:2452-62. 10.1056/NEJMoa054493.
- Sakharkar KR, Chow VT. (2008). Microbial genomics: rhetoric or reality? *Indian J Microbiol.* 48 (2); 156-62. 10.1007/s12088-008-0025-2.
- Salyers AA, Whitt DD. (2002) Bacterial pathogenesis: a molecular approach. 2nd ed., ASM Press 2002; 168-84.

References

- Scallan E, Hoekstra RM, Angulo FJ, Tauxe RV, Widdowson MA, Roy SL *et al.* (2011). Foodborne illness acquired in the United States--major pathogens. *Emerg Infect Dis.* 17 (1); 7-15. 10.3201/eid1701.P11101.
- Schubert S, Dufke S, Sorsa J, Heesemann J. (2004). A novel integrative and conjugative element (ICE) of *Escherichia coli*: the putative progenitor of the Yersinia high-pathogenicity island. *Mol Microbiol.* 51 (3); 837-48.
- Schaumburg F, Alabi AS, Kaba H, Lell B, Becker K, Grobusch MP *et al.* (2015). Molecular characterization of *Shigella* spp. from patients in Gabon 2011-2013. *Trans R Soc Trop Med Hyg.* 109 (4); 275-9. 10.1093/trstmh/tru175.
- Seidler RJ, Allen DA, Colwell RR, Joseph SW, Daily OP. (1980). Biochemical characteristics and virulence of environmental group F bacteria isolated in the United States. *Appl Environ Microbiol.* 40 (4); 715-20.
- Shaw KS, Rosenberg Goldstein RE, He X, Jacobs JM, Crump BC, Sapkota AR. (2014). Antimicrobial susceptibility of *Vibrio vulnificus* and *Vibrio parahaemolyticus* recovered from recreational and commercial areas of Chesapeake Bay and Maryland coastal bays. *PLoS One.* 9 (2); e89616. 10.1371/journal.pone.0089616.
- Shi L, Zheng M, Xiao Z, Asakura M, Su J, Li L *et al.* (2006). Unnoticed spread of class 1 integrons in gram-positive clinical strains isolated in Guangzhou, China. *Microbiol Immun.* 50 (6); 463-7.
- Shiferaw B, Solghan S, Palmer A, Joyce K, Barzilay EJ, Krueger A *et al.* (2012). Antimicrobial susceptibility patterns of *Shigella* isolates in foodborne diseases active surveillance network (foodnet) sites, 2000-2010. *Clin Infect Dis.* 54 Suppl 5 S458-63. 10.1093/cid/cis230.
- Singh R, Rajpara N, Tak J, Patel A, Mohanty P, Vinothkumar K *et al.* (2012). Clinical isolates of *Vibrio fluvialis* from Kolkata, India, obtained during 2006: plasmids, the qnr gene and a mutation in gyrase A as mechanisms of multidrug resistance. *J Med Microbiol.* 61 (Pt 3); 369-74. 10.1099/jmm.0.037226-0.
- Sjolund Karlsson M, Bowen A, Reporter R, Folster JP, Grass JE, Howie RL *et al.* (2013). Outbreak of infections caused by *Shigella sonnei* with reduced susceptibility to azithromycin in the United States. *Antimicrob Agents Chemother.* 57 (3); 1559-60. 10.1128/AAC.02360-12.

References

- Smith AB, Siebeling RJ. (2003). Identification of genetic loci required for capsular expression in *Vibrio vulnificus*. *Infect Immun.* 71 (3); 1091-7.
- Srinivasan VB, Virk RK, Kaundal A, Chakraborty R, Datta B, Ramamurthy T *et al.* (2006). Mechanism of drug resistance in clonally related clinical isolates of *Vibrio fluvialis* isolated in Kolkata, India. *Antimicrob Agents Chemother.* 50 (7); 2428-32. 10.1128/AAC.01561-05.
- Stokes HW, Hall RM. (1989). A novel family of potentially mobile DNA elements encoding site-specific gene-integration functions: integrons. *Mol Microbiol.* 3 (12); 1669-83.
- Stokes HW, Hall RM. (1991). Sequence analysis of the inducible chloramphenicol resistance determinant in the Tn1696 integron suggests regulation by translational attenuation. *Plasmid.* 26 (1); 10-9.
- Stokes HW, Nesbo CL, Holley M, Bahl MI, Gillings MR, Boucher Y. (2006). Class 1 integrons potentially predating the association with tn402-like transposition genes are present in a sediment microbial community. *J Bacteriol.* 188 (16); 5722-30. 10.1128/JB.01950-05.
- Stokes HW, O'Gorman DB, Recchia GD, Parsekhian M, Hall RM. (1997). Structure and function of 59-base element recombination sites associated with mobile gene cassettes. *Mol Microbiol.* 26 (4); 731-45.
- Sun J, Zhou M, Wu Q, Ni Y. (2010). Characterization of two novel gene cassettes, *dfrA27* and *aadA16*, in a non-O1, non-O139 *Vibrio cholerae* isolate from China. *Clin Microbiol Infect.* 16 (8); 1125-9. 10.1111/j.1469-0691.2009.03060.x.
- Syngkon A, Elluri S, Koley H, Rompikuntal PK, Saha DR, Chakrabarti MK *et al.* (2010). Studies on a novel serine protease of a Δ hapA Δ prtV *Vibrio cholerae* O1 strain and its role in hemorrhagic response in the rabbit ileal loop model. *PLoS One.* 5 (9); 10.1371/journal.pone.0013122.
- Szekeres S, Dauti M, Wilde C, Mazel D, Rowe-Magnus DA. (2007). Chromosomal toxin-antitoxin loci can diminish large-scale genome reductions in the absence of selection. *Mol Microbiol.* 63 (6); 1588-605. 10.1111/j.1365-2958.2007.05613.x.

- Talukder KA, Khajanchi BK, Islam MA, Dutta DK, Islam Z, Khan SI *et al.* (2006). The emerging strains of *Shigella dysenteriae* type 2 in Bangladesh are clonal. *Epidemiol Infect.* 134 (6); 1249-56. 10.1017/S0950268806006029.
- Taneja, N. (2007). Changing epidemiology of shigellosis and emergence of ciprofloxacin-resistant Shigellae in India. *J Clin Microbiol.* 45(2); 678–9.
- Taneja N, Mewara A. (2016). Shigellosis: Epidemiology in India. *Indian J Med Res.* 143 (5); 565-76. 10.4103/0971-5916.187104.
- Taneja N, Mishra A, Kumar A, Verma G, Sharma M (2015). Enhanced resistance to fluoroquinolones in laboratory-grown mutants & clinical isolates of shigella due to synergism between efflux pump expression & mutations in quinolone resistance determining region. *Indian J Med Res.* 141 (1); 81-9.
- Tamilselvan S, Srikanth P, Balaji TM, Vijayalakshmi T, Suresh R. (2004). Isolation of rare species *Vibrio fluvialis* in dental plaque. *Indian J Pathol Microbiol.* 47 (3); 448-9.
- Taylor, R. G., Walker, D. C. and McInnes, R. R. (1993). *E. coli* host strains significantly affect the quality of small scale plasmid DNA preparations used for sequencing. *Nucleic Acids Res.* 21, 1677-8.
- Thomas CM, Nielsen KM. (2005). Mechanisms of, and barriers to, horizontal gene transfer between bacteria. *Nat Rev Microbiol.* 3 (9); 711-21. 10.1038/nrmicro 1234.
- Thungapathra M, Amita, Sinha KK, Chaudhuri SR, Garg P, Ramamurthy T *et al.* (2002). Occurrence of antibiotic resistance gene cassettes aac(6')-ib, dfra5, dfra12, and era2 in class i integrons in non-o1, non-o139 *Vibrio cholerae* strains in India. *Antimicrob Agents Chemother.* 46 (9); 2948-55.
- Tra VT, Meng L, Pichpol D, Pham NH, Baumann M, Alter T *et al.* (2016). Prevalence and antimicrobial resistance of *Vibrio* spp. In retail shrimps in Vietnam. *Berl Munch Tierarztl Wochenschr.* 129 (1-2); 48-51.
- Turner SA, Luck SN, Sakellaris H, Rajakumar K, Adler B. (2003). Molecular epidemiology of the SRL pathogenicity island. *Antimicrob Agents Chemother.* 47 (2); 727-34.
- Ud-Din AI, Wahid SU, Latif HA, Shahnaij M, Akter M, Azmi IJ *et al.* (2013). Changing trends in the prevalence of *Shigella* species: Emergence of multi-

References

- drug resistant *Shigella sonnei* biotype g in Bangladesh. *PLoS One*. 8 (12); e82601. 10.1371/journal.pone.0082601.
- Unterholzner SJ, Poppenberger B, Rozhon W. (2013). Toxin-antitoxin systems: Biology, identification, and application. *Mobile genet elements*. 3(5); e26219. 10.4161/mge. 26219.
- Uyaguari MI, Scott GI, Norman RS. (2013). Abundance of class 1-3 integrons in South Carolina estuarine ecosystems under high and low levels of anthropogenic influence. *Mar Pollut Bull*. 76 (1-2); 77-84. 10.1016/j.marpolbul.2013.09.027.
- Vaisvila R, Morgan RD, Posfai J, Raleigh EA. (2001). Discovery and distribution of super-integrations among pseudomonads. *Mole Microbiol*. 42 (3); 587-601.
- Van Melderen L, Saavedra De Bast M. (2009). Bacterial toxin-antitoxin systems: More than selfish entities? *PLoS genet*. 5 (3); e1000437. 10.1371/journal.pgen.1000437.
- Vinothkumar K, Kumar GN, Bhardwaj AK. (2016). Characterization of *Vibrio fluvialis qnrVC5* Gene in Native and Heterologous Hosts: Synergy of *qnrVC5* with other Determinants in Conferring Quinolone Resistance. *Front Microbiol*. 7 146. 10.3389/fmicb.2016.00146.
- Waldor MK, Tschape H, Mekalanos JJ. (1996). A new type of conjugative transposon encodes resistance to sulfamethoxazole, trimethoprim, and streptomycin in *Vibrio cholerae* O139. *J Bacteriol*. 178 (14); 4157-65.
- Wang J, Liang F, Wu XM, Qi W. (2014). Transfer patterns of integron-associated and antibiotic resistance genes in *S. flexneri* during different time intervals in Tianjin, China. *Indian J Med Microbiol*. 32 (3); 256-60. 10.4103/0255-0857.136556.
- Wang R, Yu D, Zhu L, Li J, Yue J, Kan B. (2015). Inca/c plasmids harboured in serious multidrug-resistant *Vibrio cholerae* serogroup O139 strains in China. *Int J Antimicrob Agents*. 45 (3); 249-54. 10.1016/j.ijantimicag.2014.10.021.
- Wang Y, Song C, Duan G, Zhu J, Yang H, Xi Y *et al*. (2013). Transposition of *iseCp1* modulates *bla*CTX-M-55-mediated *Shigella flexneri* resistance to cefalothin. *Int J Antimicrob Agents*. 42 (6); 507-12. 10.1016/j.ijantimicag. 2013.08.009.

References

- Wei Q, Hu Q, Li S, Lu H, Chen G, Shen B *et al.* (2014). A novel functional class 2 integron in clinical *Proteus mirabilis* isolates. *J Antimicrob Chemother.* 69 (4); 973-6. 10.1093/jac/dkt456.
- WER. (2016). The weekly epidemiological record: Cholera annual report 2015. 91(38); 433–40.
- WGO. (2008). World gastroenterology organization practice guidelines.
- WHO. (2005). Guidelines for the control of Shigellosis, including epidemics due to *Shigella dysenteriae* type 1. 2005. ISBN: 9241592330.
- WHO. (2009). Diarrhoea: Why children are still dying and what can be done.
- WHO. (2014). Antimicrobial resistance: global report on surveillance 2014. ISBN: 978 92 4 156474 8.
- WHO. (2017). Global priority list of antibiotic-resistant bacteria to guide research, discovery, and development of new antibiotics.
- Willey JM, Sherwood L, Woolverton CJ, *et al.*, (2008). 7th. Prescott, Harley, and Klein's microbiology. McGraw-Hill Higher Education; 835-58.
- Wozniak RA, Fouts DE, Spagnoletti M, Colombo MM, Ceccarelli D, Garriss G *et al.* (2009). Comparative ICE genomics: insights into the evolution of the SXT/R391 family of ICEs. *PLoS Genet.* 5 (12); e1000786. 10.1371/journal.pgen.1000786.
- Wozniak RA, Waldor MK. (2010). Integrative and conjugative elements: mosaic mobile genetic elements enabling dynamic lateral gene flow. *Nat Rev Microbiol.* 8 (8); 552-63. 10.1038/nrmicro2382.
- Xu X, Cheng J, Wu Q, Zhang J, Xie T. (2016a). Prevalence, characterization, and antibiotic susceptibility of *Vibrio parahaemolyticus* isolated from retail aquatic products in north China. *BMC Microbiol.* 16 32. 10.1186/s12866-016-0650-6.
- Xu Y, Zhuang L, Kang H, Ma P, Xu T, Pan S *et al.* (2016b). Prevalence, resistance patterns, and characterization of integrons of *Shigella flexneri* isolated from Jiangsu province in China, 2001-2011. *Eur J Clin Microbiol Infect Dis.* 35 (8); 1347-53. 10.1007/s10096-016-2671-3.
- Yamane K, Wachino J, Suzuki S, *et al.* (2007). New plasmid-mediated fluoroquinolone efflux pump, QepA, found in an *Escherichia coli* clinical isolate. *Antimicrob Agents Chemother.* 51: 3354-60.

- Yang H, Duan G, Zhu J, Zhang W, Xi Y, Fan Q. **(2013a)**. Prevalence and characterisation of plasmid-mediated quinolone resistance and mutations in the gyrase and topoisomerase iv genes among *Shigella* isolates from Henan, China, between 2001 and 2008. *Int J Antimicrob Agents*. 42 (2); 173-7. 10.1016/j.ijantimicag.2013.04.026.
- Yang J, Roy A, Zhang Y. **(2013b)**. Protein-ligand binding site recognition using complementary binding-specific substructure comparison and sequence profile alignment. *Bioinfo*. 29 (20); 2588-95. 10.1093/bioinformatics/btt447.
- Yang H, Pan Y, Hu L, Liu Y, Ye Y, Cheng J *et al.* **(2014)**. Antimicrobial resistance patterns and characterization of integrons in clinical isolates of *Shigella* from China. *Can J Microbiol*. 60 (4); 237-42. 10.1139/cjm-2013-0893.
- Yi H, Cho YJ, Yong D, Chun J. **(2012)**. Genome Sequence of *Escherichia coli* J53, a Reference Strain for Genetic Studies. *J Bacteriol*. 194(14); 3742–3. 10.1128/JB.00641-12
- You KG, Bong CW, Lee CW. **(2016)**. Antibiotic resistance and plasmid profiling of *Vibrio* spp. In tropical waters of peninsular Malaysia. *Environ Monit Assess*. 188 (3); 171. 10.1007/s10661-016-5163-0.
- Yu L, Zhou Y, Wang R, Lou J, Zhang L, Li J *et al.* **(2012)**. Multiple antibiotic resistance of *Vibrio cholerae* serogroup O139 in China from 1993 to 2009. *PLoS One*. 7 (6); e38633. 10.1371/journal.pone.0038633.
- Zhang Y. **(2008)**. I-TASSER server for protein 3D structure prediction. *BMC bioinfo*. 9 40. 10.1186/1471-2105-9-40.
- Zhao S, White DG, Ge B, Ayers S, Friedman S, English L *et al.* **(2001)**. Identification and characterization of integron-mediated antibiotic resistance among Shiga toxin-producing *Escherichia coli* isolates. *Appl Environ Microbiol*. 67 (4); 1558-64. 10.1128/AEM.67.4.1558-1564.2001
- Zhu JY, Duan GC, Yang HY, Fan QT, Xi YL. **(2011a)**. Atypical class 1 integron coexists with class 1 and class 2 integrons in multi-drug resistant *Shigella flexneri* isolates from China. *Curr Microbiol*. 62 (3); 802-6. 10.1007/s00284-010-9790-3.

References

Zhu J, Duan G, Yang H, Fan Q, Xi Y. (2011b). Multi-drug resistance and characteristic of integrons in *Shigella* spp. isolated from China. *Biomed Environ Sci.* 24 (1); 56-61. 10.3967/0895-3988.2011.01.007.