

8 Studies on Other Bacterial Enteropathogens

Section highlights

- Purified *Yersinia enterocolitica* heat stable enterotoxin (YSTa) was found to stimulate intracellular calcium level in isolated rat enterocytes.
- In a study for better visualization of *Helicobacter pylori* in gastric mucosa modified Gemsa, Giemenez stains and a special stain Alpas were evaluated in addition to Haematoxylene and Eosine stain.
- One hundred and fifty strains of *Salmonella enterica* serotype Typhi isolated from clinical cases by examine for antimicrobial susceptibility testing. Most (84%) isolates were still resistant to chlorophenicol, ampicillin, tetracycline and co-trimoxazole.



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8.1 Mode of action of *Yersinia enterocolitica* heat stable enterotoxin (YSTa) in rat intestinal epithelial cell

Investigator :

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Yersinia enterocolitica, one of the aetiological agents of human gastroenteritis particularly in children in developed countries, is known to secrete a heat-stable enterotoxin (ST) called Y-ST that is similar to other methanol-soluble STs and the biological expression of which can be detected by the suckling mice assay.

Although lots of studies have been made regarding the genetic and chemical characteristics of Y-STs, and the amino acid sequence homology have been elucidated among different subtypes of Y-STs but no emphasis have been made regarding the functional aspects of Y-STs. Among the different types of Y-STs, the Y-STa have been postulated to be involved in the cyclic GMP-mediated signal transduction resulting in the stimulation of chloride secretion and/or inhibit absorption and thus promote intestinal fluid secretion, since studies indicate that Y-STa increases cyclic GMP- levels in mouse intestine and cultured cell lines. However, no work has yet been made to evaluate the involvement of other signal transduction molecules, besides cyclic GMP, as the second messenger in the mechanism of action of Y-STa. Therefore, it would be interesting to find out the involvement of other signal transduction molecules such as IP_3 , DG and Ca^{2+} in the mechanism of action of Y-STa.

The principal objective of this study was to evaluate the mechanism of action of heat stable enterotoxin secreted by *Yersinia enterocolitica*. At the initial stage of this study



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