



## Identification, Characterization of Prevalent Diarrheagenic Bacterial Pathogens from Regions of Himachal Pradesh

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**ABSTRACT:** Diarrhea ranks third among all causes of infectious disease deaths worldwide especially in children under five (2.2 million per year). Our study focuses on Himachal Pradesh region, since this area is least studied as compared to northern regions and till date there is no estimate of the diarrhea incidences and their causative agents. A total 263 stool samples of patients 01 month - 85 years were collected during April 2012 to June 2014. Samples were screened for major bacterial pathogens (*E. coli*, *Shigella*, *Salmonella* and *Vibrio*) on differential media and characterized by biochemical analysis. *E.coli* is further characterized for diarrheagenic pathotypes by targeting eight virulence genes through multiplex PCR. The confirmed *E. coli* samples were serotyped at National *Salmonella* and *Escherichia coli* centre, CRI Kasauli. Diarrhea incidences peaked during 2012-13 rainy seasons and 2013-14 winter seasons. Out of 263 samples only 234 samples were retrieved culture positive and yielded 58.2% *E.coli*, 22.7% *Shigella*, 9% *vibrio*, and 6% *Salmonella* and rest 4% of unknown etiology. Multiplex-PCR of *E. coli* confirms the higher number of ETEC 56% followed by EPEC 24.1% and EHEC 20%. Serotyping of *E.coli* reveal higher percentage of O2 serotype followed by O41, O1, O26, O20, O3, O124, O102, O21, O25, O68, O53, O82, and O97 which coincides with the studies from other Asian regions. This is the foremost three years study from Himachal Pradesh, presenting current estimates of the frequency and number of diarrheal incidences attributable to bacterial pathogens with highest proportion contributed by Enterotoxigenic *E. coli*. © 2014 iGlobal Research and Publishing Foundation. All rights reserved.

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