OPTIMUM GROWTH TEMPERATURE FOR THE ISOLATION OF *PLESIOMONAS SHIGELLOIDES* USING IBB, PDA AND MSS AGARS

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A good satisfactory growth medium for *Plesiomonas shigelloides* is not known as yet. Their identification from a culture plate has always been a problem in presence of other organisms particularly when *Aeromonas* spp. are present. To overcome this problem we investigated various media, such as inositol brilliant green bile salt agar (IBB), Plesiomonas differential agar (PDA) and modified Salmonella and Shigella (MSS) agar, in attempting best recovery of these organisms through laboratory experiments. Several strains of clinical and environmental origin of *P. shigelloides* were employed in the investigation. Overnight broth cultures were prepared and plated onto the above mentioned culture media including a few other non-selective plates and incubated at 37, 42 and 44°C. Highest numbers of colony forming units were observed on PDA plates at 42°C, while large and best colonies morphologically were found on the same plates but at 44°C. At 44°C temperature on PDA plates *Aeromonas hydrophila* was found to be completely inhibited followed by *A. caviae* and then *A. sobria*, compared to the growth at 42°C. Also, we observed that colonies of *P. shigelloides* could be recognized after 24 hours of incubation at 42 and 44°C. From this study we conclude that for optimal isolation of *P. shigelloides* PDA medium is the best, and not at 37°C but at 42°C, with reduction of the incubation temperature to 24 hours from the recommended 48 hours.

THE SUICIDE PHENOMENON IN *AEROMONAS* SPECIES AS A CORRELATE TO UNDERSTANDING CONCEPTS OF VIRULENCE AND ENTEROPATHOGENICITY

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Certain strains of mesophilic aeromonads (*Aeromonas hydrophila, A. sobria, A. caviae*) when grown in broth containing 0.5% glucose undergo growth inhibition concomitant with acetate accumulation. As these strains are non-viable after 24 h, this phenomenon is termed suicide.

We investigated suicidal strains of *Aeromonas* as a correlate to understanding animal virulence and enteropathogenicity. To assess virulence, batches of 5 white mice were inoculated intraperitoneally with washed 10^7 cells of suicidal and non-suicidal strains of *A. hydrophila* and *A. sobria*, and suicidal strains of *A. caviae*. The three non-suicidal strains of *A. sobria* tested showed lethality as early as 12 h and were uniformly fatal within 36 h post-inoculation. After 36 h the 3 suicidal strains killed only 1 of 15 mice inoculated. Four *A. hydrophila* strains tested which show the suicide phenomenon at 37°C were variably lethal (40-100%). None of 5 suicidal strains of *A. caviae* were lethal. Enteropathogenicity was studied by orally inoculating 3 white mice each with the same *Aeromonas* strains (10^8 in skim milk), and assessing diarrhoea and intestinal fluid accumulation. Diarrhoea and fluid accumulation were present in all mice inoculated with two non-suicidal *A. sobria*, and in 2/12 mice given four suicidal *A. hydrophila*. Two suicidal strains each of *A. sobria* and *A. caviae* failed to elicit any gastrointestinal disturbances. These data suggest that the suicide phenomenon may explain strain-specific (*A. sobria, A. hydrophila*) and species-specific (*A. caviae*) virulence and enteropathogenicity.