

CHAPTER 5

CONCLUSIONS

The objective of this experiment was to select acid and bile tolerant Lactic Acid Bacteria of human origin. Microorganisms isolated from healthy infant feces would be likely to colonize in human intestine. The results of isolation and selection of acid and bile tolerant lactic acid bacteria indicated that 79 isolates from 55 samples showed the yellow colony of acid production on MRS agar plus bromocresol purple as indicator. So, these isolates can presumptive the acid producing bacteria. Sixty-four isolates showed the clear zone of acid production on MRS agar plus CaCO₃. Thirty-nine isolates are acid-tolerant LAB that survived at pH 2, 3 and 4: 18, 10 and 11 isolates, respectively. Sixteen isolates are acid and bile tolerant lactic acid bacteria that survived in 0.15% and 0.3% bile salts. Six isolates of acid-bile tolerant LAB were identified to genus level following the criteria of Axelsson (1993) and identified at the species level using 16S rRNA gene sequence analysis (Anderson and McKay, 1983). Only isolate S2/1 was *Enterococcus hirae* but 5 isolates (F14/2, S1, S5, F5 and F31) were *Pediococcus acidilactici*.

In conclusion, among the 64 isolates investigated from infant fecal matter, 6 isolates of acid and bile tolerant LAB were selected from their resistance to high acid and bile conditions. These isolates were characterized using phenotypic and genotypic methodologies as *Enterococcus hirae* and *Pediococcus acidilactici* and may be regarded as potentially probiotic. They are being further investigated in laboratory for other probiotics characteristics and *in vivo* effects including health benefits in human.