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SASAMON HIRANRATANANAKIN : ORAL ROSELLE-ELECTROLYTE
POWDER FOR TREATMENT OF INFECTIOUS DIARRHEA. THESIS ADVISORS
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Diarrhea is a common illness that affects millions of people worldwide. The treatment of most causes of bacterial gastroenteritis is usually supportive, but the use and overuse of antibiotics may gradually result in the development of antibiotic resistance. It has been demonstrated that the water extract from roselle calyces possessed the antibacterial effect upon a number of diarrheagenic bacteria. Furthermore, the oral rehydration solution (ORS) has been accepted to be the replacement solution for fluid and electrolyte losses during diarrhea. In the present study, roselle and ORS were prepared in combination as granules and to be used for the treatment of diarrhea. This preparation was found to contain sodium, potassium, chloride, citrate and glucose in amounts nearly to those recommended by World Health Organization (WHO). Most importantly, Roselle-ORS showed the desired activity upon the diarrheagenic pathogens (75 strains were tested) *in vitro*. Roselle-ORS preparation was also tested for its antibacterial efficacy *in vivo*. This was performed in Wistar rats receiving *Vibrio cholerae* which was the chosen strain used in the test. The result revealed the preparation could reduce some numbers of *V. cholerae* in female rats in comparison to the non-treated control and the control treated with only ORS. However, such reduction was not statistically significant and it was not observed in treated male rats. Lastly, the packaging stability of this preparation was tested, and it was found that the keeping of the preparation in the aluminium foil pouch was much better than keeping it in the polyethylene pouch.