Antibacterial activity test of antplant stem tuber ethanol extract
(Myrmecodia pendens Merr. & L.M. Perry)
against Shigella dysentriae and Klebsiella pneumonia

Sulistyaningsih, Sri Agung Fitri Kusuma, Arif Satria Wira K.
Faculty of Pharmacy Padjadjaran University

Abstract
Antplant (Myrmecodia pendens Merr. & L.M. Perry) has empirically being used as a drug which has antibacterial activity. This research was conducted to know the antibacterial activity of antplant stem tuber (Myrmecodia pendens Merr. & L.M. Perry) against pathogenic bacteria such as Shigella dysentriae and Klebsiella pneumoniae, to determine the minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) range. Antibacterial activity test was done by using agar diffusion method and the determination of MIC and MBC range was done by using tube dilution method. The MIC - MBC range of antplant stem tuber ethanol extract (Myrmecodia pendens Merr. & L.M. Perry) against bacteria Shigella dysentriae lies between the extract concentration of 14 - 16% (w/v). Meanwhile The MIC - MBC range of antplant stem tuber ethanol extract (Myrmecodia pendens Merr. & L.M. Perry) against bacteria Klebsiella pneumoniae lies between the extract concentration of 2.5 - 5% (w/v). The result of phytochemistry screening indicates that the ethanol extract of antplant stem tuber (Myrmecodia pendens Merr. & L.M. Perry) consists of flavonoids, polifenols, saponins, and tannins.

Keywords: Myrmecodia pendens Merr. & L.M. Perry, antibacterial, Shigella dysentriae, Klebsiella pneumoniae

Introduction
S. dysentriae is a pathogenic bacteria that commonly causes dysentriae disease which could become epidemic disease in some tropical regions (Fajariah, 2009). As it is reported that from total 140 million malnutrition cases that happened, almost 600.000 of the deaths was caused by basiller dysentriae, a dysentriae because of S. dysentriae infections (Sutedjo, 2007). K. pneumoniae is a pathogenic bacteria that caused pneumonia to it’s host body. A person who suffer of pneumonia will undergo acute respiratory infection, and in the worst effect of this infection, is that this infection could make the person die if the infection is not treated well (Carpenter, 1990). Irrasional antibiotic using for the infection treatment, which was caused by these two species of bacteria, has made these two species of bacteria become resistence to some antibiotic groups such as kotrimoksazol, ampicillin, dan chloramphenicol (Health Technology Assessment Indonesia, 2005). With these resistance cases, the process to find new drugs that is safe for the patient need to be done as an alternative option. And the using of herbal medicines is one of the solution to this problem. So that is the reason why this research was established, to know the antibacteriull potention from the ethanol extract of antplant (Myrmecodia pendens Merr. & L.M Perry) against Shigella dysentriae and Klebsiella pneumoniae.

Identification
Based on the background as explained above, then the problems that could be identified are:
1. Does antplant stem tuber (Myrmecodia pendens Merr. & Perry) ethanol extract have antibacterial activity against Shigella dysentriae and Klebsiella pneumoniae?
2. Where do the Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC) range of antplant stem tuber (Myrmecodia pendens Merr. & Perry) ethanol extracts against Shigella dysentriae and Klebsiella pneumoniae lies?

Methods
1. Simplisia collecting and plants determination
2. Extraction of the antplants stem tuber (Myrmecodia pendens Merr. & L.M.Perry) by using maseration method
3. Phytochemistry screening
4. Thin layer chromatography test by using silica gel plate GF 254
5. Antibacterial activity test of the antplants stem tuber (Myrmecodia pendens Merr. & L.M.Perry) ethanol extract using agar diffusion method