

## ABSTRACT

### **In Vitro Antibacterial Potency Comparison of Branded and Generic Amoxicillin (Product Used in Primary Health Care and General Hospital of Bangka Tengah District)**

**Background:** Antimicrobial resistance is caused by overuse and underuse of antimicrobial. Substandard medicine is one of factor leading to underused antimicrobial. Amoxicillin was one of many substandard medicine found. As the most used antibiotic in primary health care, generic and branded amoxicillin quality should be proven. This study aims to evaluate and compare in vitro antibacterial potency of different generic and branded amoxicillin that are available in Indonesian market, especially that used in government owned health care facility in Bangka Tengah distric.

**Method:** Microbiological assay for five sample of amoxicillin tablet containing 500 mg amoxicillin which are available in Indonesia were determined using a method from Indonesia Pharmacopeia. Samples were coded Product A to E. The assay was by measure diameter of inhibition zones in plate agar incubated with *E. coli* ATCC 25922 and *S. aureus* ATCC 25923. The obtained data were evaluated to determine sample potency if compared to amoxicillin reference standard. Minimum inhibitory concentration of tested product were measured to support the result.

**Result:** No statistically difference ( $p > 0.05$ ) were found in diameter of inhibition zones. Ratio potency measured both in *E. coli* and *S. aureus* were all in between compendial requirement (95% - 105%). This result supported by MIC data, all product successfully pass MIC requirement, 2-4 ppm for *E. coli* and 0.25-0.5 ppm for *S. aureus*.

**Conclusion:** All five samples were in the range of acceptance criteria both for potency and MIC. Therefore, from microbiological assay, all products tested ware have equivalence quality and can be interchangeable.

**Keywords:** Amoxicillin, Microbiological Assay, Generic substitution, Bangka Tengah District