

Development of Vi Polysaccharide Purification Technique as Component of Typhoid Vaccine: Effect of Ethanol Washing to Impurity and Vi Polysaccharide

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Typhoid fever is a disease caused by infection from the bacteria *Salmonella enterica* serovar Typhi (*Salmonella typhi*). One way to overcome this infectious disease is to immunize using a vaccine-based Vi polysaccharide. Method of purifying Vi polysaccharide to remove nucleic acid and endotoxin impurities to meet the defined acceptance criteria has been developed by Kothari et al. (2013). However based on the method used, high impurities in Vi polysaccharide were still found and there is the dangerous use of absolute ethanol in large quantities. Based on this, Vi polysaccharide purification technique is developed with focus on effect of ethanol washing to impurities and Vi polysaccharide components. Washing results of crude Vi polysaccharide with 20% ethanol solution followed by 30% ethanol gave loss percentage of nucleic acid at 96,33%, nucleic acid value of 60% fraction at 0,243 mg/mL, loss percentage of endotoxin at 17,58% and endotoxin value of 60% fraction at 261,7 EU/mL. Washing results of crude Vi polysaccharide with three times 30% ethanol gave nucleic acid value of 60% fraction at 0,193 mg/mL and endotoxin value of 60% fraction at 102,5 EU/mL. One time additional washing with 30% ethanol and three times repeated washing using 30% ethanol did not reduce gain of Vi polysaccharide. Based on the research data, washing of crude Vi polysaccharide with ethanol removes nucleic acid effectively but not effectively remove endotoxin and also washing with 30% ethanol does not reduce the gain of Vi polysaccharide.

Keywords :

[Salmonella typhi](#), Vi polysaccharide, purification, [ethanol precipitation](#).

Biography:

Dea Marsendah was studied in School of [Life Sciences and Technology](#) in the institute of Bandung Institute of Technology in Indonesia. Her research interested areas are [Salmonella typhi](#), Vi polysaccharide, purification, ethanol precipitation.

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