Abstract

Clove (*Syzygium aromaticum* (L.) Merr. & Perry) is an essential herb with well-documented health benefits. Carbohydrates were detected in the ethanolic bud extract of *S. aromaticum*. Two antithrombotic polysaccharides were isolated from the flower buds of clove by anion-exchange chromatography, hydrophobic interaction column chromatography, and size exclusion chromatography with molecular weight ranging from ca. 34,000 to ca. 103,000 Da. Clove polysaccharides have the backbone of type I rhamnogalacturonan, and the side chain of arabinan with the sulfate is being positioned at 6 of 3-linked galactosyl residues. Although polysaccharides from cloves have an antithrombotic ability, their activities in vitro are lower than that of heparin. Sulfated polysaccharides from cloves show a slightly lower salt concentration due to their relatively low sulfate/sugar ratio, which gives distinctive structural characteristics compared to other polysaccharides such as algae polysaccharides. The anticoagulation action with no toxicity in vivo of low molecular weight sulfated polysaccharide may represent a valuable and safe antithrombotic agent. This chapter gives an overview of polysaccharides from *S. aromaticum*, their characteristics, and their potential applications.

Keywords

Antithrombotic, Anticoagulation, Carbohydrate, Applications, Sulfated polysaccharides; *Syzygium aromaticum*