

**Title** Sulphated modification of a polysaccharide obtained from fresh persimmon (*Diospyros kaki* L.) fruit and antioxidant activities of the sulphated derivatives

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#### **Abstract**

Free radicals and other reactive oxygen species (ROS) are believed to play significant roles in ageing as well as in a number of degenerative or pathological diseases. This paper reports the preparation, characterisation and potential antioxidant activity of a type of chemically sulphated polysaccharide isolated from fresh persimmon (*Diospyros kaki* L.) fruit. Three sulphated derivatives with variable degrees of substitution (0.8, 1.7 and 2.5) were obtained by the chlorosulphonic acid–pyridine method. The sulphated derivatives all showed dose-dependent reducing power and free radical scavenging effect of 1,1-diphenyl-2-picrylhydrazyl, superoxide anion and hydroxyl. Our results showed that the sulphated modification of polysaccharides significantly increased their antioxidant activities and may be an effective way to prepare these valuable derivatives.