



## ORIGINAL ARTICLE

## Antibacterial and Antioxidant Properties of Colorant Extracted from Red Onion Skin

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(Received: 6 June 2019

Accepted: 4 September 2019)

**KEYWORDS**Red onion Skin;  
Natural Colorant;  
Antioxidant;  
Antibiotics;  
Antimicrobial

**ABSTRACT:** Due to the abundance and cheapness of red onion skin scrubs and its high consumption in Iran, we decided to evaluate its antioxidant and antimicrobial properties as a natural source of anthocyanin. The onion skin was collected from the Qazvin local market. Extraction was carried out using water and glycerol. The total anthocyanin concentration was determined by pH-differential method. MIC and MBC were determined using microdilution method and diameter of the bacteria inhibition zone by disc diffusion method on extracted color from Onion skin against *Staphylococcus aureus* and *Escherichia coli* strains. The antioxidant activity was determined by measuring the 2,2-diphenyl-1-picrylhydrazyl (DPPH) and total phenol content by the Folin Ciocalteu. The mean total anthocyanin concentration at 40°C was (60.67, 8.4) mg/g. The highest and the lowest mean diameter of the non-growth zones of the extracted colorant in *Staphylococcus aureus* was 0/83±0/14 and 0/4±0/17 and in the *E. coli* 0/9±0/22 and 0/5±0/20 respectively. Inhibitory concentration of 50% (IC50) in the extracted colorant was obtained at 14/718±0/20 mg / ml. The total phenolic content was obtained as an average of 114.326±2/36 mg/g of gallic acid per gram of onion powder. According to the results of the study and the high consumption of onions in various types of household foods and as a result of increasing their waste, antioxidant and antimicrobial properties, in addition to coloring, can be used as a cheap dye source in various food industries.

**INTRODUCTION**

Colors are important factors in human life and psychologically are very effective in emotional feelings and nerve stimulation. Man chooses many colors in an unconscious way, but the color of food is one of the first features to be taken into consideration and it has an intuitive

aspect. It is an important factor in accepting food. Color of food can also be associated with the quality and freshness of food.

Adding color to food is long lasting that was made by Egyptians in 1500 BC. The colors are added to the food, for

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DOI: 10.22034/jchr.2019.668188