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# 조생흑찰의 용매별 추출물 항산화 검정

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# Analysis of Antioxidant activity of Josaengheugchal according to different solvent extracts

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## Objectives

These days, the needs of functional crop is on the increase rapidly and many functional rice varieties have been developed including colored rice. Among these, it is widely known that the black rice has many kinds of pigments that have various functional activities like antioxidant properties, reducing the risks of cardiovascular diseases and cancers and so on. So we used Josaengheugchal, black rice, that has anthocyanin as major pigment, and examined the antioxidant activity according to different solvent extracts.

## Materials and Methods

○ Materials

In this study, we used Josaengheugchal, blackish purple pigmented glutinous japonica rice cultivar. It was harvested in 2009 at Miryang (Department of Functional Crop, NICS, RDA). The 10kg of Josaengheugchal in condition of Brown rice was ground in size of 100mesh(approximately 254μm).

○ Methods

The Josaengheugchal powder was extracted and fractioned by four solvent, hexane, ethyl acetate, butanol and water. Then the extracts were filtered and concentrated using by rotary evaporator. After concentration, we used the extracts dissolved in DMSO(dimethylsulfoxide) for examination of antioxidant activity. The examinations of ABTS(2,2′-Azino-bis-3-ethylbenzo-thiazoline-6-sulfonic acid) and DPPH(1,1-diphenyl-2-picrylhydrazyl) radical scavenging activity were performed.

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## Results

The ABTS radical scavenging activity($IC_{50}$) of extracts of Josaengheugchal using by different solvents were haxane 59.2ppm, ethyl acetate 8.91ppm, butanol 60ppm and water 71ppm. The DPPH radical scavenging activity were haxane 174.2ppm, ethyl acetate 19ppm, butanol 131ppm, water 290ppm. What was shown the strongest radical scavenging activity in both ABTS, DPPH was the ethyl acetate extract, 8.91ppm, 19ppm, respectively. Josaengheugchal has glutinous and other functional characteristics, especially antioxidant in ethylacetate extract as you can see above, so it has possibility that it can use in eating as it is or processed food.