

# Sialic acid bioactive compound from Edible Bird Nest (EBN) extract as skin senescence therapy: Its Application as a Cosmeceutical Ingredient

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## ABSTRACT

Edible bird nest (EBN) refers to the nest produced by Swiftlet species and contains high nutritional content with therapeutic properties.

The biotechnology processed extract of EBN is composed of high nutritional composition and has been explored as potential active ingredient in cosmeceutical applications. This extract of EBN composes sialic acid content and high nutritional value, giving potent activity for skin aging therapies. This study reports the potential use of this EBN extract as an active ingredient in producing a skin care cosmeceutical product high in antioxidant, moisturizing and skin whitening properties. The product was formulated with the EBN extract and its stability was also established. The safety profile of the extract and the formula was also determined to ensure its compliances to ASEAN COSMETIC safety requirements as a safe cosmetic product. The study also covered the stability aspect of the extract and formulated product.

This safe, stable cosmetic product with therapeutic properties which enhances the moisturizing effect and has skin whitening effect would have a high potential for cosmeceutical product using Malaysian EBN sources. Further study is needed to know the mechanism of the extract in producing this activity.



EBN Cosmeceuticals Product Formulation

## OBJECTIVES

The aim of this study was to study the potential use of EBN extract as an active ingredient which has high nutritional value and sialic acid content in producing a quality skin care cosmeceutical product.

## METHODS AND MATERIALS

### EBN

- Clean EBN was analyzed for quality and safety analysis. It was then hydrolyzed to evaluate its sialic acid content. The clean EBN was then extracted, screened for antioxidant activity and formulated as skin care product.
- Stability and safety study of the skincare product was also performed.

## RESULT

### Raw Clean Edible Bird Nest (EBN) Extract

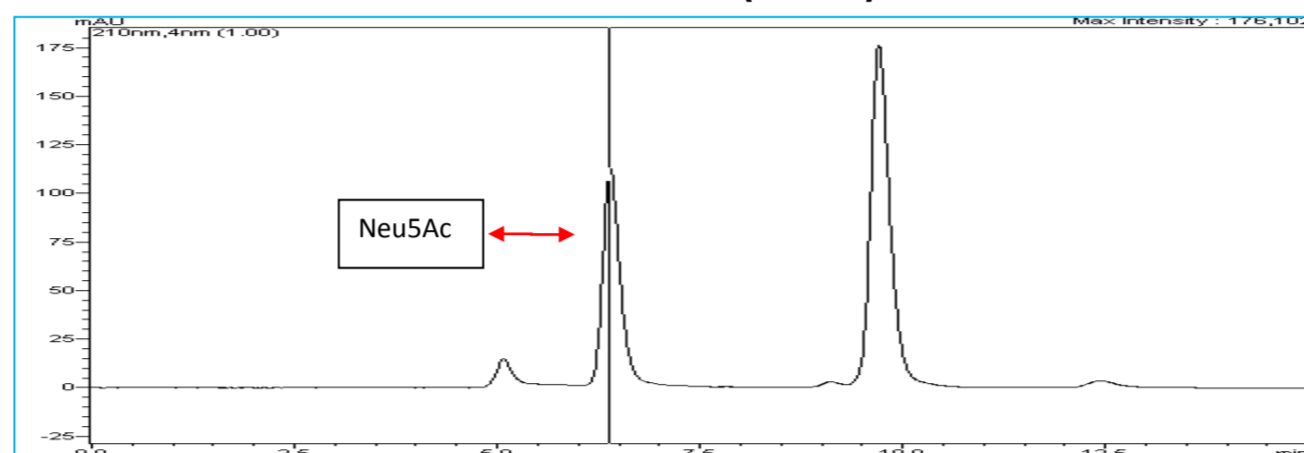


Figure 1 : HPLC chromatogram of EBN extract

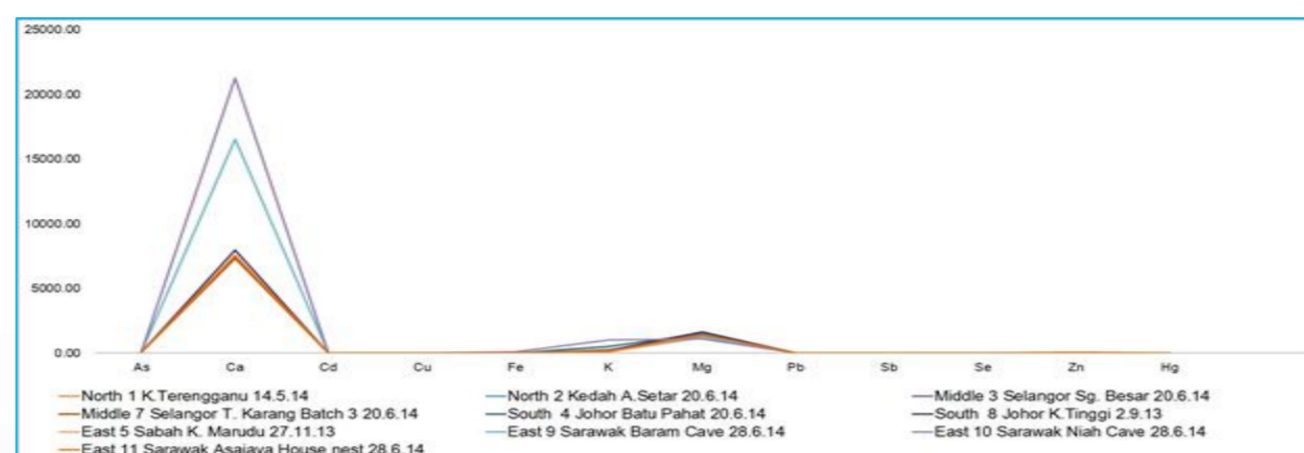


Figure 2: Mineral content profile of EBN from various location in Malaysia

### ABTS Free Radical Scavenging Activity of EBN

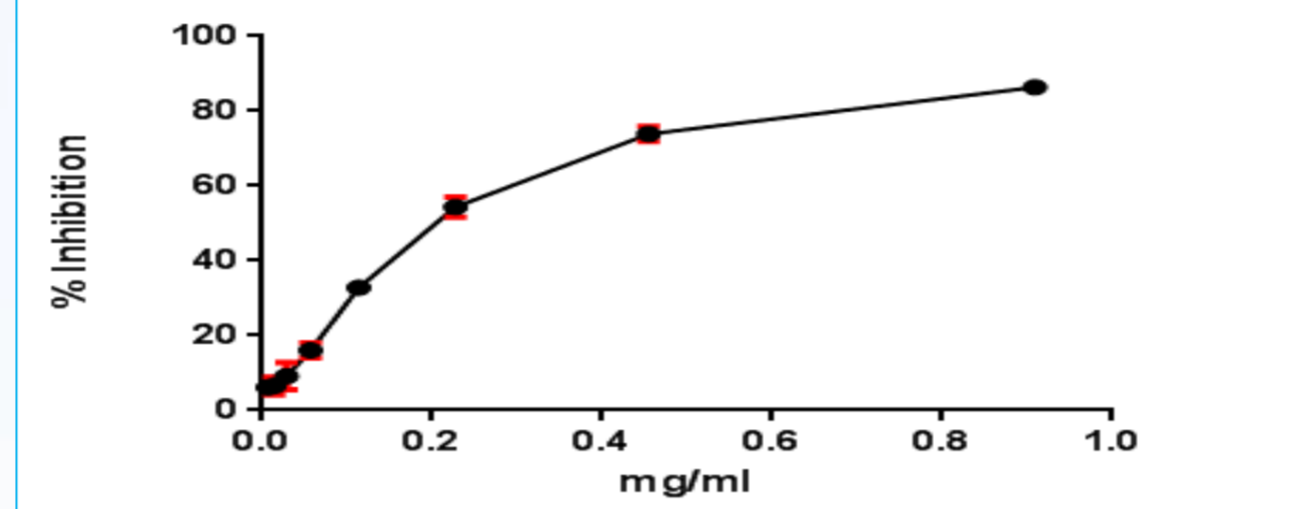


Figure 3: Antioxidant activity of EBN extract using ABTS assay

No	Type of Test	Results (ppm)	Max Permissible limit (ppm)
1.	Mercury (hg) mg/kg	0.03	0.5
2.	Lead (pb) mg/kg	0.04	10
3.	Arsenic (As) mg/kg	< 0.001	1

Table 1 : Heavy metal analysis of EBN Extract

### EBN Cosmeceutical : Moisturiser Product Stability Evaluation at various temperature (accordance to ASEAN Cosmetic Directive)

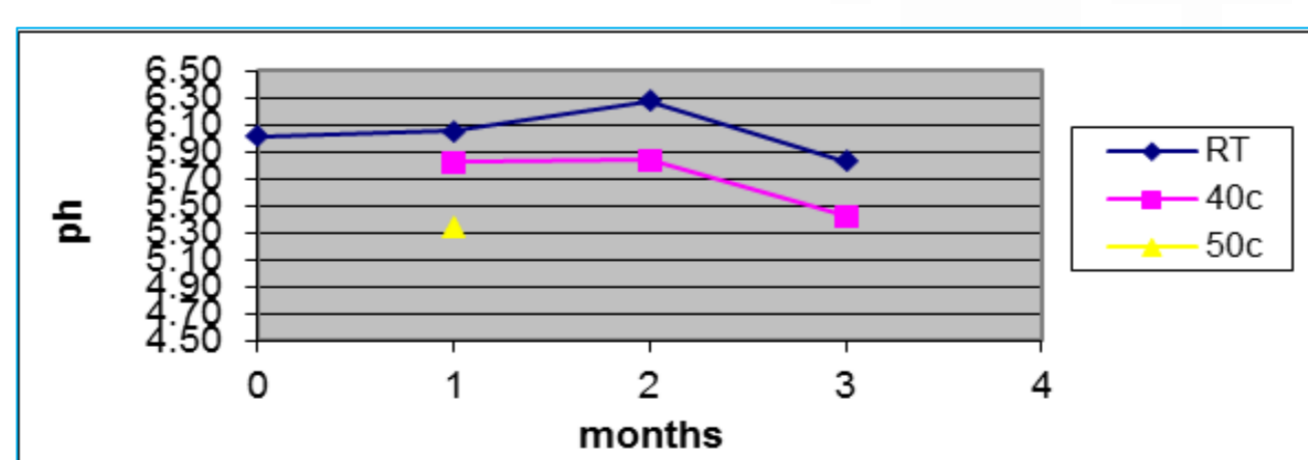


Figure 4: pH Test

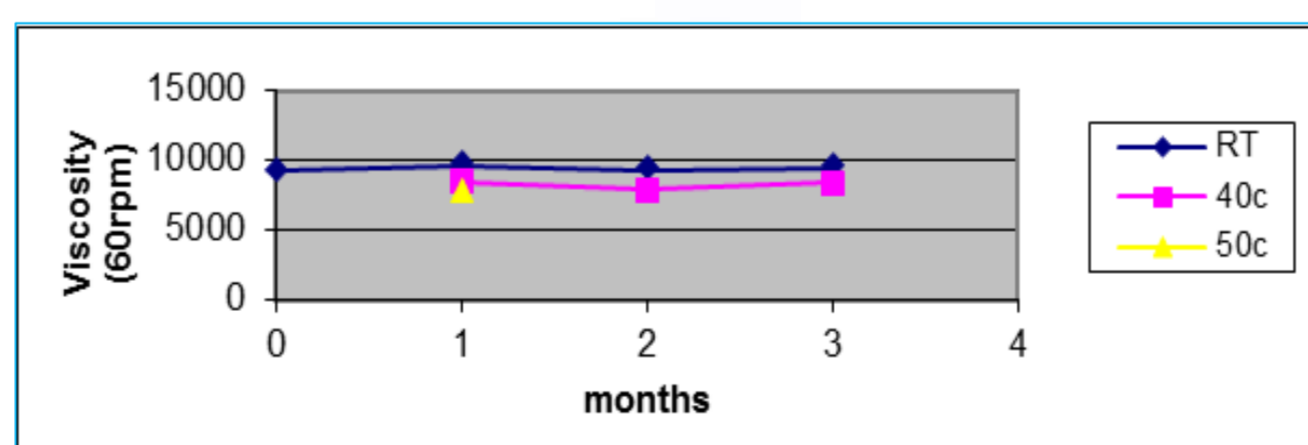


Figure 5: Viscosity Test 60 rpm

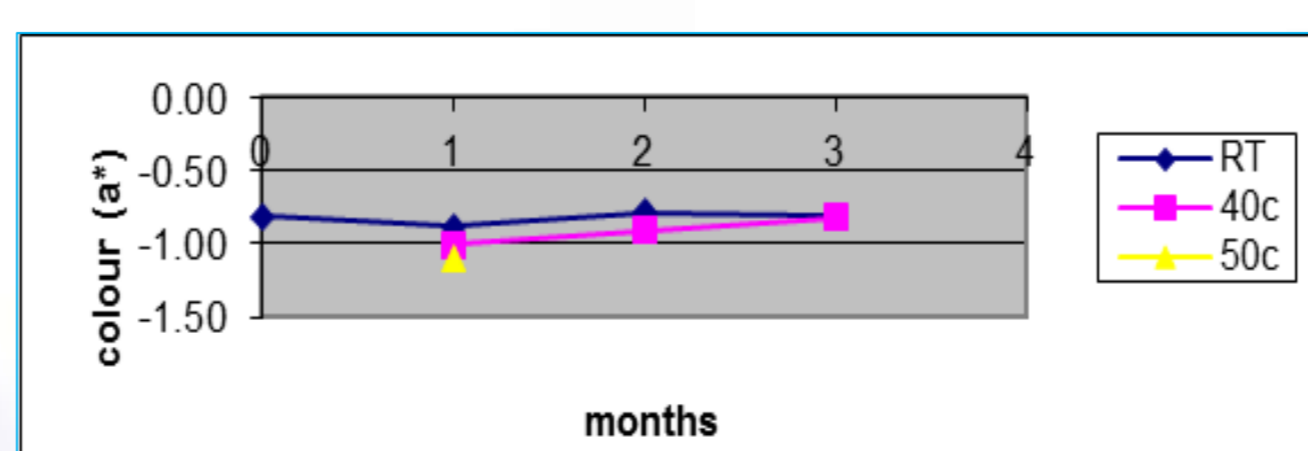


Figure 6: Colour Test

### Skin Hydration Effect of EBN Moisturizer for Six hours

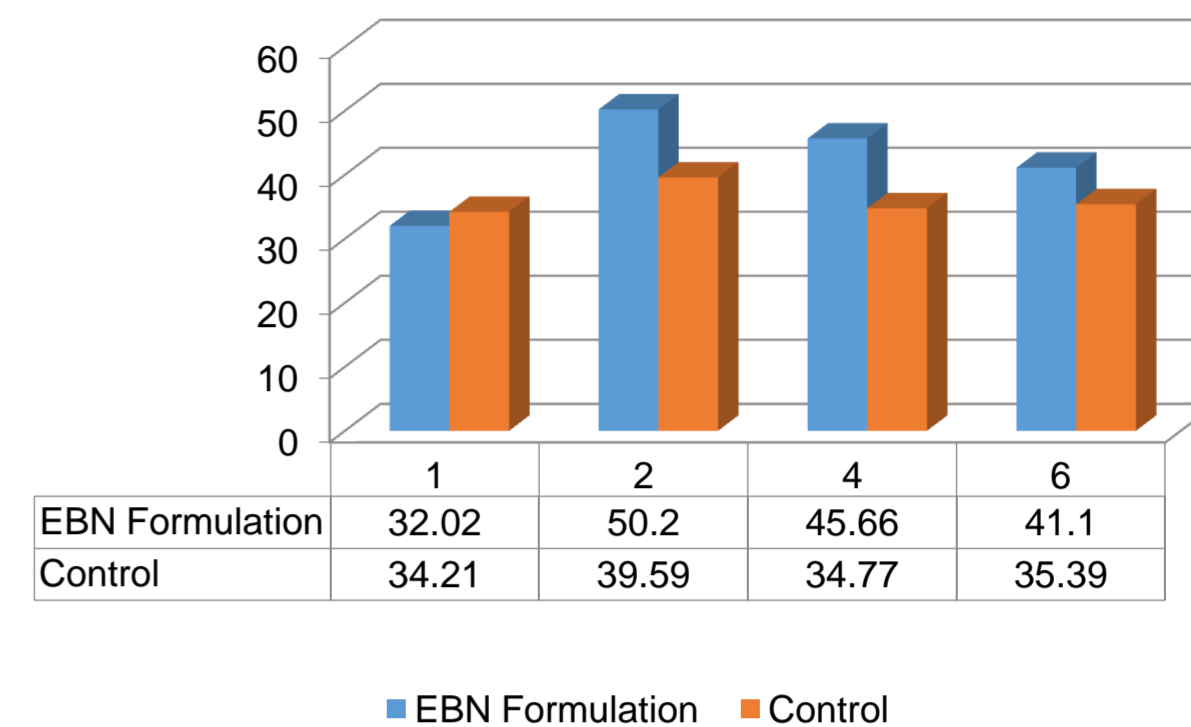


Figure 7: skin hydration on EBN extract formulation

## DISCUSSION

- The Raw clean EBN samples were sourced from Pahang Malaysia.
- The crude EBN was extracted and characterized for sialic acid content. It was analysed for antioxidant activity nutritional and heavy metal contaminant.
- The EBN extract which was not hydrolyzed did not detect any DPPH activity. The extract was then hydrolyzed to obtain the antioxidant activity.
- The standardized extract was then used to formulate cosmetic product which consist of serum, moisturizing cream and cleanser.
- These formulated product was then subjected to stability study inclusive of viscosity, pH and colour.
- The Skin hydration study was also conducted to show the EBN extract effectiveness ingredient in cosmeceutical application.

## CONCLUSION

In this study, EBN extract has been proven to have potential as an active ingredient in cosmeceutical application. However in depth study need to be perform further to explore on its reputable medicinal benefits for cosmeceutical application.

## ACKNOWLEDGEMENT



## REFERENCES

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2. Marcone, M.F. Characterization of the edible bird's nest the "Caviar of the East", Food Research International, 2005, 38, 1125-1134