Potential of Butterfly Pea Flower (*Clitoria ternatea*) Extract Shampoo as Anti *Malassezia* sp

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Background:

Dandruff is a scalp symptom characterized by the presence of flakes on the skin and scalp hair, accompanied by dryness and itching. It can affect anyone and have an impact aesthetically potentially affecting the quality of life in socio-economically or psychologically. Until now, many studies have been conducted to understand the pathogenesis of dandruff, especially the effect of treatment on the elimination of *Malassezia restricta* and *Malassezia globosa*, that play the most important role in the pathogenesis of dandruff. The increasing antimicrobial resistance exhibited by infectious microorganisms in dandruff has led to extensive research. This research focuses on the therapeutic potential of anti-dandruff herbs.

Methods:

A quasi-experimental study, 37 dandruff scalp patients were treated with *Clitorea ternatea* shampoo 20 %. Real-Time PCR method used to evaluate *Malassezia sp* DNA expression before and 4 weeks after use shampoo.

Result:

Mean *Malasezia sp* DNA expression before using shampoo *Clitoria ternatea* was 21.54 ct and Mean *Malassezia sp* DNA expression after using shampoo for 4 weeks (3 times a week) was 23.36 ct. The difference was statistically significant p=0.003 (t-dependent test).

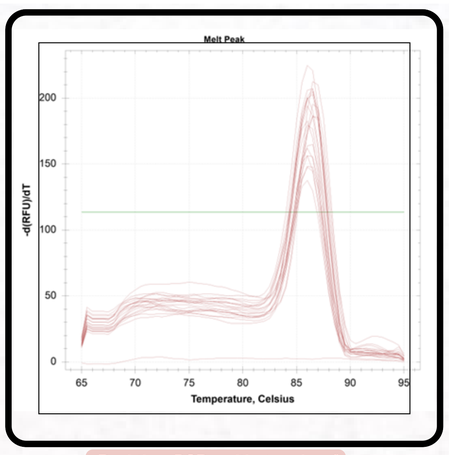
Tabel 1 Mean Quantification cycle (Cq) Values of *Malassezia sp* DNA expression before and after 4 weeks use CT shampoo

Before	Uji T- dependen p value	After
21.54	0,003	23.36

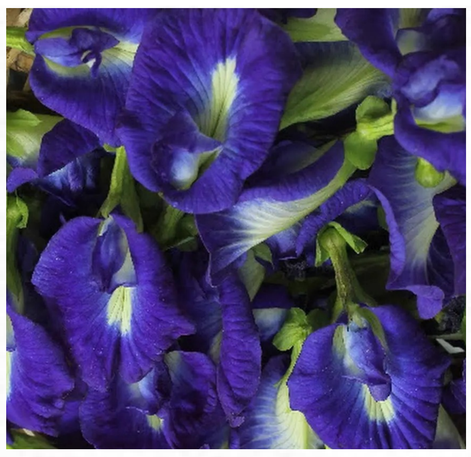
*significance at 0,05 level

qPCR using reagen SensiFAST™ SYBR No-ROX Kit (No Katalog : BIO-98005) and instrument Real Time PCR Biorad CFX-96. Primer used in PCR:

Malassezia (26s)	TAA CAA GGA TTC CCC TAG TA (Reverse)	ATT ACG CCA GCA TCC TAA G (Forward)



Real-time PCR melting peaks of Malazzesia



Clitoria ternatea

Conclusion:

Clitoria ternatea extract shampoo has anti *Malassezia sp* properties, as proven by the decrease in *Malassezia sp* DNA expression on the scalp of dandruff patient after use 4 weeks *Clitoria ternatea* extract shampoo.

Keywords:

***Malassezia sp.*, anti-fungal, butterfly pea flower, RT PCR, dandruff**

Objective:

To investigate the potential of butterfly pea flower extract (*Clitoria ternatea*) shampoo as anti-*Malassezia sp.*

BEFORE TREATMENT

AFTER 4 WEEK TREATMENT

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