# 美白效能檢測證書/

# WHITENING EFFICACY TEST CERTIFICATE

**送檢公司 /** SAMPLE SUBMITTED BY：**東原秘境農場/ Tung Yuan Organic Farm**

**檢測項目 /** TEST ITEMS：**美白效能 /** WHITENING EFFICACY

**送檢樣品 /** SAMPLE DESCRIPTION：**玫瑰花萃取純露 / Rose Flower Extract Hydrosol**

**送檢批號 /** INSPECTION BATCH NO.：Rose.Ext.-202409 (總量/ Total：250ml/毫升)

**收樣日期 /** SAMPLING DATE：2024.11.05

**檢測證明單號 /**TEST CERTIFICATE NO.：W.E.C.20241216

## 一、實驗方法：

**1.美白效能：L-DOPA 清除能力** $EC_{50}$(50%清除率)**測定**，依據 Lee KT, Lee KS, Jeong JH, Jo BK, Heo MY, Kim HP. Inhibitory effects of Ramulus mori extracts on melanogenesis. *J Cosmet Sci* 2003.54(2)：133-142

**2.反應試藥：L-DOPA** (純度 99.9%以上，Sigma-Aldirich T3824)

**3.比對樣品：**紅藜蘆醇/ Resveratrol (純度 99.9%以上，Sigma-Aldirich)

**4.偵測方式：**採用**分光光度計在 450 nm** 下偵測吸收光(機型：HITACHI Spectrophotometer U-1100)。

**5.操作方式：操作比例如下表 1 所示，每個樣本皆利用不含受質的當作背景值扣除。所有反應在 37°C 反應 40 分鐘。**

**表 1：各項試劑操作比例**

| 試　劑 | 體積 (µl) |
|---|---|
| L-DOPA (0.2 mg/ml) | 500 |
| 1X PBS | 489 |
| Inhibitor or test sample | 10 |
| Tyrosinase (5 units/µl) | 1 |

**6.樣品濃度：**直接將樣本溶液以滅菌水，分別配製成如下表 1(table 1)的濃度，再直接吸取樣本液到無菌針管內，經 0.22 µm 孔徑之無菌過濾膜處理後，再分別以與 **L-DOPA** 之反應溶液進行分析，結果見下表 2 與圖 1 所示。


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# 二、實驗結果：

## 1.本樣品與比對樣品紅藜蘆醇(Resveratrol)對 L-DOPA 清除能力測定結果如下表 1：

Table 1. Effects of different samples on mushroom-derived tyrosinase activity

| | Water | 1/64 Rose hydrosol | 1/32 Rose hydrosol | 1/16 Rose hydrosol | 1/8 Rose hydrosol | 1/2 Rose hydrosol |
|---|---|---|---|---|---|---|
| Absorbance at 450 nm$ | 0.181 ± 0.001 | 0.195 ± 0.001 | 0.185 ± 0.001 | 0.183 ± 0.002 | 0.179 ± 0.002 | 0.176 ± 0.001 |
| Absorbance at 450 nm# | 0.045 ± 0.006 | 0.004 ± 0.001 | 0.041 ± 0.001 | 0.041 ± 0.002 | 0.040 ± 0.001 | 0.042 ± 0.001 |
| Relative activity (%) | 100.00 ± 0.42 | 113.94 ± 0.42 | 105.38 ± 0.42 | 104.16 ± 1.53 | 102.44 ± 1.12 | 98.04 ± 0.85 |
| Inhibition rate (%) | 0.00 ± 0.42 | -13.94 ± 0.42 | -5.38 ± 0.42 | -4.16 ± 1.53 | -2.44 ± 1.12 | 1.96 ± 0.85 |

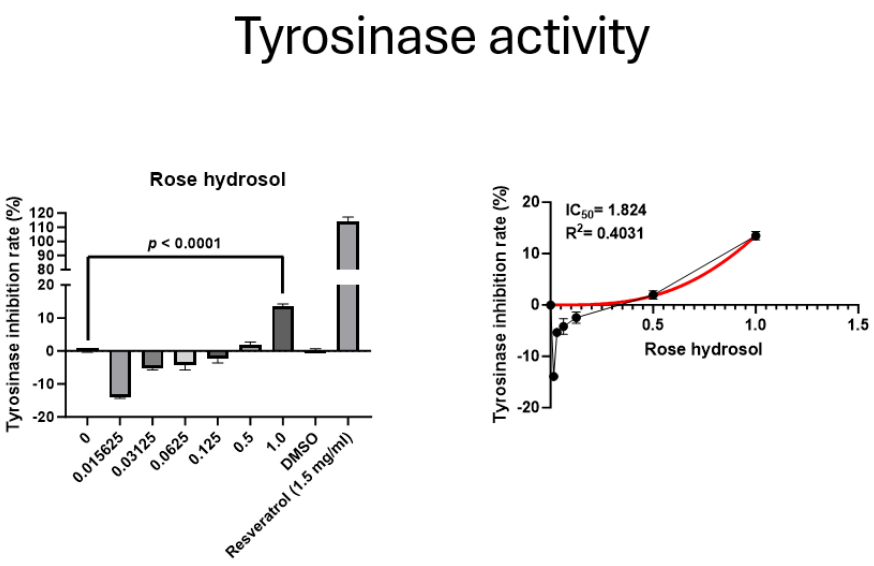
| | Original Rose hydrosol | DMSO | Resveratrol 1.5 mg/ml | | | |
|---|---|---|---|---|---|---|
| Absorbance at 450 nm$ | 0.158 ± 0.001 | 0.226 ± 0.001 | 0.106 ± 0.006 | | | |
| Absorbance at 450 nm# | 0.040 ± 0.001 | 0.044 ± 0.003 | 0.131 ± 0.001 | | | |
| Relative activity (%) | 86.55 ± 0.85 | 100.00 ± 0.64 | -14.13 ± 3.03 | | | |
| Inhibition rate (%) | 13.45 ± 0.85* | 0.00 ± 0.64 | 114.13 ± 3.03* | | | |

$ The absorbance values were derived from samples and L-DOPA solution (0.2 mg/ml in phosphate buffer solution).

# The absorbance values were derived from samples and blank solvent (phosphate buffer solution), used as absorbance calibration.

* The asterisk symbols represent the difference between the control group and the sample group with statistical significance.

## 2.本樣品與比對樣品紅藜蘆醇(Resveratrol)對 L-DOPA 清除能力測定結果以圖表示如下：




**圖：玫瑰花露對 L-DOPA 之 $EC_{50}$(或 $IC_{50}$)**

**3.最終說明：**根據上表 2 之實驗所得數據，本樣品在以原液作為試劑下，其最終清除率(或美白效果)約為對照試藥-**紅藜蘆醇(Resveratrol)**在 1.5mg/ml 之下 **11.78%的效果**。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# 樣品照片/SAMPLE PHOTO

## W.E.C.20241216


~~報告結束/END OF REPORT~~

Sign on behalf of HGGD and QA manager
代表 HGGD 和 QA 經理簽字

CERTIFICATION TAIWAN HGD Huang Gang Green Detection LTD

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