



Determination of Proanthocyanidins in Grape Seed Extract by UV

I. Apparatus and Reagent:

Ultra-violet visible spectrophotometer

2% $\text{NH}_4\text{Fe}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$ of muriatic acid solution: Accurately weigh 17ml of concentrated HCL, add water to 100ml, then add 2g of $\text{NH}_4\text{Fe}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$, fully shake.

Acid nbutanol solution: Mix 95ml of nbutanol with concentrated HCL.

II. Preparation of solution

1. Preparation of sample solution: Accurately weigh 100g of grape seed P.E. into 50ml volumetric flask, dilute to volume with methanol. Accurately pipette 2ml of solution into 50ml volumetric flask, volume with methanol to calibrate as test solution. Accurately pipette 1ml of test solution into 10ml plug tube. Add 0.2ml of 2% $\text{NH}_4\text{Fe}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$ of 2N HCL solution. Add 6ml of acid nbutanol solution. Screw down the cover and fully shake, then loose the cover and put it into 95°C water bath to have reaction for 60min, then cool down in the icy water bath, cool at room temperature. Dilute to 10ml with acid nbutanol solution to obtain the standard solution.

2. Preparation of standard solution: Replace sample solution with standard solution. Make it in accordance with the method of sample solution to obtain the standard solution.

3. Preparation of blank solution: Replace sample solution with methanol to obtain the blank solution.

III. Content calculation:

Turn on the apparatus and heat for 20min. when the apparatus finishes self-check, using blank solution as blank at 288nm to determine the absorption value of the standard solution and sample solution.

IV. Result

$$C\% = \frac{A \times W_s \times S}{A_s \times W} \times 100$$

A: Absorption value of sample

W: Sample weight (mg)

As: Absorption value of standard

Ws: Standard weight (mg)

S: Purity of standard