

## PARACETAMOL TABLET

20 tablets, which reported as containing 300mg paracetamol in each one of them, are pulverized and mixed thoroughly. The tablet powder that equivalent to about 100mg of active substance is weighed. After hydrolysis with 50 ml of 10% HCl, it is diluted to 100 ml with distilled water and then 3 ml of this solution is taken and transferred to a 100 ml volumetric flask. 2 ml of 10% HCl and 3 ml of DAB solution (3% solution of p-dimethylaminobenzaldehyde in 95% ethanol) is added. After the mixture is shaken well, it is left to stand at room temperature for 20 minutes and is completed to 100 ml with distilled water and the absorbance is measured against the blank solution at 444 nm. As absorbance is found 0.51, the amount of active ingredient in the tablets and then in a tablet can be calculated.

**Plotting the standard curve:** A weighed fraction of about 100 mg of the reference standard is hydrolyzed as shown above and diluted to 100 ml. 0.5 ml, 1 ml, 2 ml, 3 ml and 4 ml portions are taken from this solution into 100 ml volumetric flask. 2 ml of 10% HCl and 3 ml of DAB solution are added. It is left to stand for 20 minutes and dilute to 100 ml with distilled water and the absorbances is measured against the blank solution at 444 nm. The standard curve is drawn on a millimeter paper by absorbances at y-axis, concentrations at x-axis. Concentrations are calculated mcg ( $\mu\text{g}$ , microgram) or mg in 1 ml and calculations are made for dilutions and amount in 1 ml of each dilution is found:

$$\frac{100 \text{ ml}}{1 \text{ ml}} = \frac{100 \text{ mg}}{x}$$

$x = 1 \text{ mg / ml (mother liquor)}$   
Stock solution

**1. dilution:** Take 0.5 ml from the stock solution and add the reagent, then complete to 100 ml with water:

$$0.5 \text{ mg in } 100 \text{ ml, } 0.005 \text{ mg in } 1 \text{ ml} = 5 \text{ mcg}$$

**2. dilution:** Take 1 ml from the stock solution and add the reagent, then complete to 100 ml with water:

$$1 \text{ mg in } 100 \text{ ml, } 0.010 \text{ mg in } 1 \text{ ml} = 10 \text{ mcg}$$

**3. dilution:** Take 2 ml from the stock solution and add the reagent, then complete to 100 ml with water:

$$2 \text{ mg in } 100 \text{ ml, } 0.02 \text{ mg in } 1 \text{ ml} = 20 \text{ mcg}$$

**4. dilution:** Take 3 ml from the stock solution and add the reagent, then complete to 100 ml with water and  $x = 30 \mu\text{g}$  (5., 6., and so on dilutions).

The following standard curve is drawn using the calculated concentrations and the corresponding absorbances at 444 nm:

C ( $\mu\text{g/ml}$ )	A
5.....	0.075
10.....	0.16
20.....	0.38
30.....	0.56
40.....	0.77

