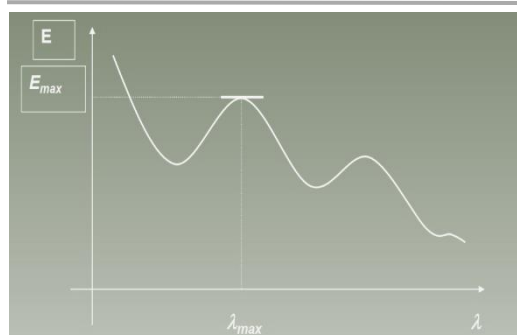# UV-Vis Spectrophotometer
# *Perkin Elmer Lambda 25*

Double-beam scanning UV-Vis Spectro-photometer, PC operated via UVWinLab software (manufacturer Perkin Elmer, 2006).

- Wavelength range: 190-1100 nm

- Wavelength precision: ±0.1 nm

- Lamp change: automatic at 326 nm

- The scanning speed: can vary from 7.5 to 2880 nm/min

- Photometric precision: Absorbance±0.003

It is used for the qualitative identification of a compound in a solution, as well as for the quantitative identification of a substance in a solution.

The principle of the UV-Vis spectroscopy is based on the Lambert-Beer Law, which states that there is a linear relationship between the concentration and the absorbance of the solution, which enables the concentration of a solution to be calculated by measuring its absorbance.

### LAMBERT-BEER LAW

T= transmission $\qquad T = \frac{I}{I_0} \times 100$

A= absorbance $\qquad A = \frac{I_0 - I}{I_0} \times 100$

E= extinction (molar absorptivity) $\quad E = log\frac{I}{I_0} = \varepsilon lc$

c = the concentration of the irradiated solution (mol/L)

l = length of light path (cm)

ε = molar absorptivity or  sau molar extinction coefficient

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