DNA FACTSHEET

Concentration by absorbance

Spectrophotometry can be used to estimate DNA or RNA concentration and analyse the purity of the preparation.

For a 1cm pathlength:

- For double stranded DNA $1A_{260}$ = 50µg/mL
- For single stranded DNA $1A_{260}$ = 33µg/mL

Based on extinction coefficients of DNA in water
The OD does not give any indication of the size of the DNA

Purity by absorbance

- Pure DNA has an A260/A280 ratio ≥1.8
- An A260/A280 ratio <1.8 indicates contamination with proteins or aromatic substances
- An A260/A280 ratio >2.0 indicates possible contamination with RNA

Note a high A230 reading can also indicate contaminants in the sample

Mobility of different size DNA fragments on agarose gels

Agarose %	Effective resolution range of linear ds DNA fragments (kb)
0.5	30 to 1
0.7	12 to 0.8
1.0	10 to 0.5
1.2	7 to 0.4
1.5	3 to 0.2