

Quality Assurance

Quality control is the most fundamental part of our DNA/RNA synthesis service.

Our barcode driven LIMS system is able to detect any human based error sources over the whole manufacturing process.

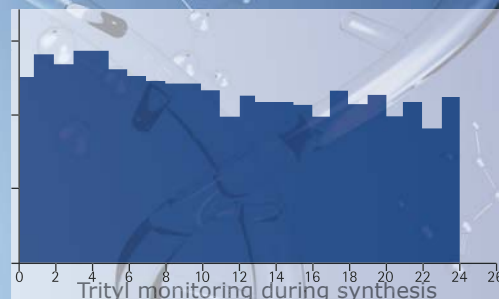
Oligonucleotide synthesis is controlled by continuous online trityl monitoring. The quality, quantity and identity of the end product is ensured by:

- OD measurement
- MALDI-TOF mass spectrometry or
- Capillary gel electrophoresis (CGE)

In addition, Isogen Life Science performs a continuous entry quality control of all chemical reagents, and is certified according to DIN EN ISO 9001:2000.

Trityl Monitoring

We use trityl monitoring to measure the coupling efficiency during oligonucleotide synthesis. This method involves measuring the absorbance of the trityl cation produced from the cleavage of the trityl moiety from a growing oligonucleotide chain. The trityl concentration is determined UV-spectrophotometrically by the absorbance of the trityl cation at 498 nm.

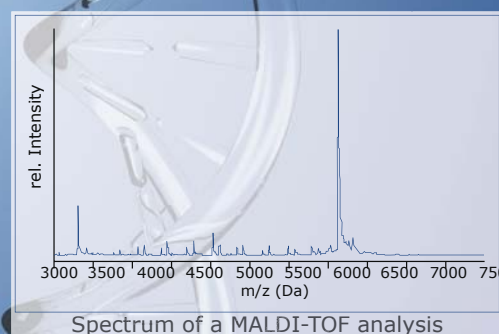


Measurement of Optical Density (OD)

One OD₂₆₀ (optical density) unit of DNA is the amount of DNA that gives an absorbance reading of 1.0 at a wavelength of 260 nm, for a sample dissolved in 1.0 ml total volume of ddH₂O, read in a 1 cm quartz cuvette. 1 OD₂₆₀ corresponds to approximately 33 µg/ml of single-stranded DNA, depending on the GC content.

MALDI-TOF Mass Spectroscopy

To ensure the identity and qualitative purity of each and every synthesised oligonucleotide, Isogen Life Science uses the latest generation of MALDI-TOF (Matrix Assisted Laser Desorption Ionisation – Time of Flight) mass spectrometers. This high grade of automation and the use of proprietary software to analyse the spectra, ensures the delivery of oligonucleotides of the highest quality.



Capillary Gel Electrophoresis (CGE)

CGE is an effective method for checking the quantitative purity of a synthesised oligonucleotide and an alternative solution to MALDI-TOF for analysing the quality of longer oligos.

At Isogen Life Science a capillary gel electrophoresis (CGE) analysis is performed for unmodified oligonucleotides longer than 60 bases purified by RP-HPLC or HYPUR®.

