Plasmid homogeneity by capillary gel electrophoresis

Plasmid DNA in supercoiled conformation (covalently closed circular DNA) is generally considered the desirable form in gene therapy. The proportion of supercoiled plasmid DNA can be easily addressed **at Solvias AG** by application of our in-house developed capillary gel electrophoresis (CGE) platform method. Other topoisomers as **linear (L)** and **open circular (OC)** are separated from the **supercoiled (SC)** form to reveal the **homogeneity/purity** of the plasmid DNA.

In this specific CGE method, the negatively charged DNA molecules migrate through a diluted polymer solution under an electric field. Separation is based on size and shape/compactness of the DNA molecule. The detection can be performed at 254 nm using UV detector or, when sensitivity is an issue, with laser induced fluorescence (LIF) detection at 520 nm after DNA labelling.

In the example below, the CGE method applied can not only separate two plasmids (1 and 2) of 4 and 5 kb, respectively, mixed at a ratio of 1:2, but also their different topologies (supercoiled, linear, open circular, and possible multimeric forms) without comigration.

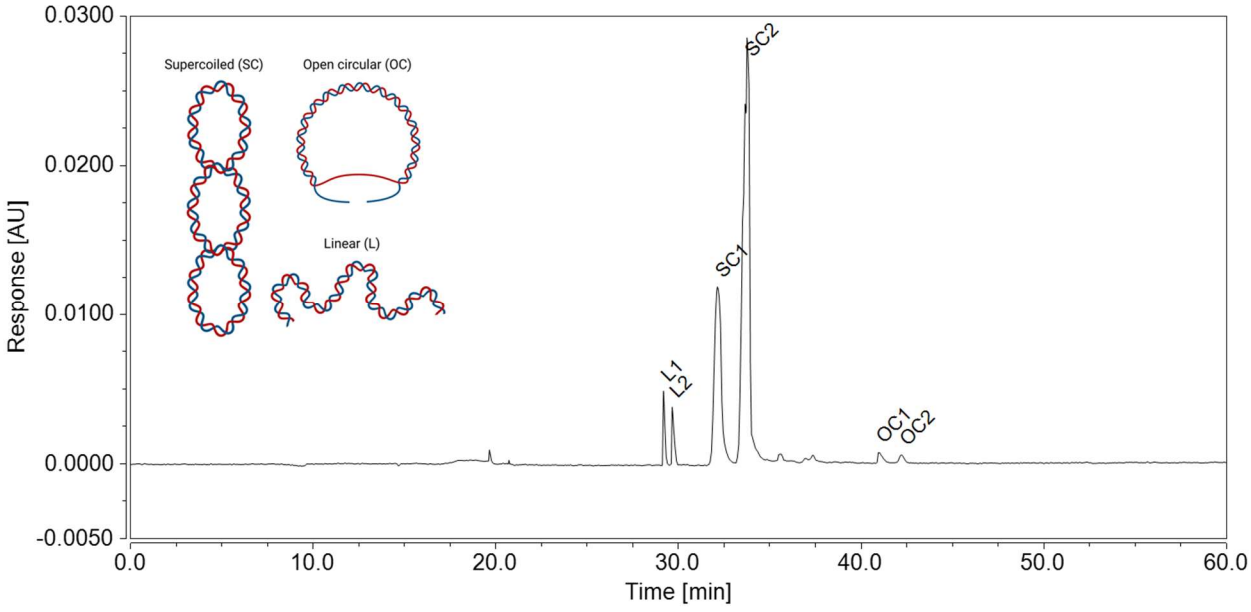

Figure 1: Analytical separation of supercoiled (SC), linear (L) and open circular (OC) plasmid DNA by capillary gel electrophoresis

Solvias AG offers the profound know-how and expertise in the field of capillary electrophoresis which is needed to fully exploit this separation technique.

For additional information please contact: *info@solvias.com*