Case Study: Optimized Sample Analysis Set-up

Need

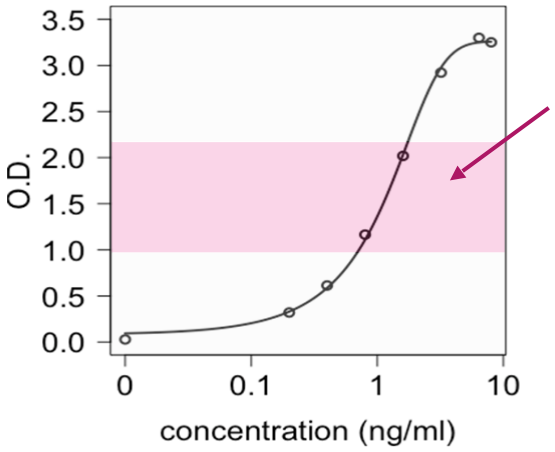
- Sponsor required a high statistical power in comparing originator and biosimilar
- Two-period, two-stage study design with approx.
  - 170 subjects in Stage 1
  - 100 subjects in Stage 2

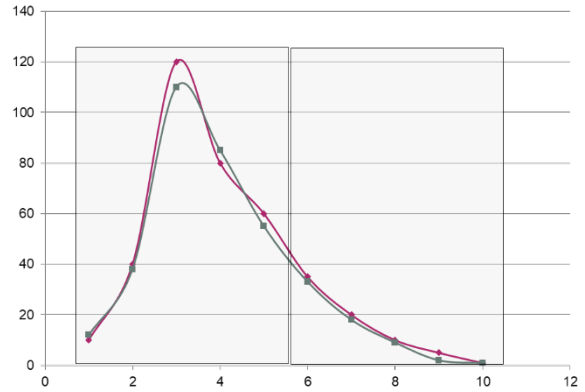
Celerion's Approach

- Celerion scientists developed a robust assay and performed sample analysis with minimal inter-compound variability

Analytical Set-Up

- Analyzed samples from both periods per subject in one analytical run
- Adjusted dilution schemes for both periods to determine concentrations within a small range of calibration curve





Benefit

- Sponsor could meet all statistical endpoints in Stage 1 and was able to forgo the second stage
- Sponsor was able to avoid over 2 Million EUR in additional cost and 5 months of delay

Case Study: Sensitivity of Neutralizing Antibody Assay

Need

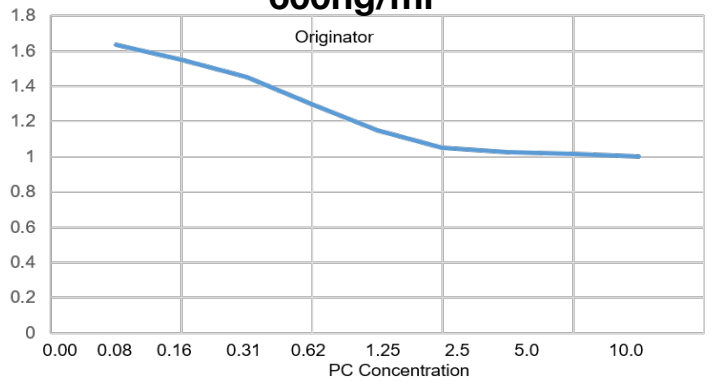
- Neutralizing antibody (nAb) assay sensitivity should be as close as possible to the anti-drug antibody assay sensitivity to detect crucial neutralizing antibodies

Celerion's Approach

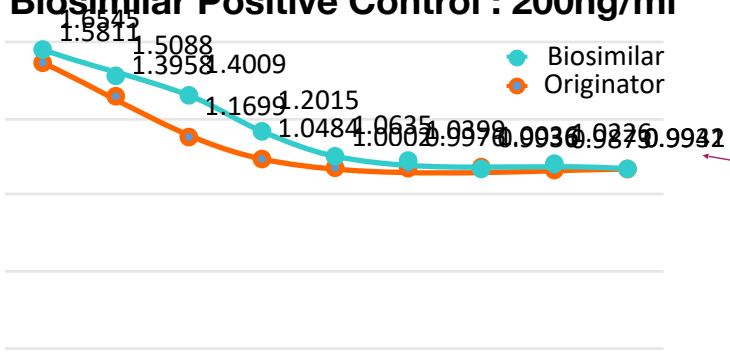
- Based on Celerion's experience, positive controls (PC) raised against the Biosimilar led to a good sensitivity of the neutralizing assay as compared to the nAb using a commercial positive controls

Analytical Set-Up

Sensitivity of a CBA nAb with a the best commercial anti-Originator Positive Control : 600ng/ml



Sensitivity of a CBA nAb with anti-Biosimilar Positive Control : 200ng/ml



Benefit

- Improved assay sensitivity achieved using a specific generated anti-biosimilar positive control
- Further, comparing sensitivity of both positive controls can be regarded as an additional proof of principle of "Biosimilarity" for the neutralizing assay

Sensitivity increase by a factor of 3 if the positive controls are raised against both compounds