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Where data means more

CASE STUDY

How the BioVisualizer Platform Accelerates Preclinical Data Analysis

Client's Challenge

A medical technology company focused on developing advanced drug-delivery devices and immune-oncology therapeutics faced challenges managing and analyzing preclinical data across diverse datasets. With ongoing studies producing large amounts of varied data, the client needed a centralized, intuitive platform to enable efficient data exploration and analysis.

They required a platform to visualize sample measurements, create interactive tables, and generate customizable plots, particularly time series analysis for biomarker tracking. Longitudinal data visualizations were essential for tracking biomarker changes and treatment effects over time, helping the client capture trends critical to understanding disease progression and therapeutic responses.

The client also needed statistical tools like Student's t-test and PCA for general data exploration, along with specialized capabilities for bulk transcriptomics analysis to compare gene expression levels across conditions.

Client's Challenge

To meet the client's specific preclinical data analysis needs, Excelra adapted its BioVisualizer platform into a solution uniquely suited to their requirements. Starting with **BioVisualizer's** robust capabilities, we worked closely with the client to adjust the tool according to their workflows, branding, and specific analysis goals.

Through an iterative feedback cycle, the client was involved in testing and refining the tool as new features were added. Excelra also provided training to ensure they could confidently manage and analyze their data.

Our Solution

The resulting data visualization software solution allowed the client to independently manage and analyze their clinical data, with features such as:

Interactive data exploration: with sample selection by criteria (experimental groups, time points…) and filtering of low-quality data points via parameters that could be dynamically updated.

Visualization modules: offering a range of plot types, such as box plots, bar charts, heatmaps, and PCA plots. A particular focus was to add a time series visualization module for the analysis of clinical data over time.

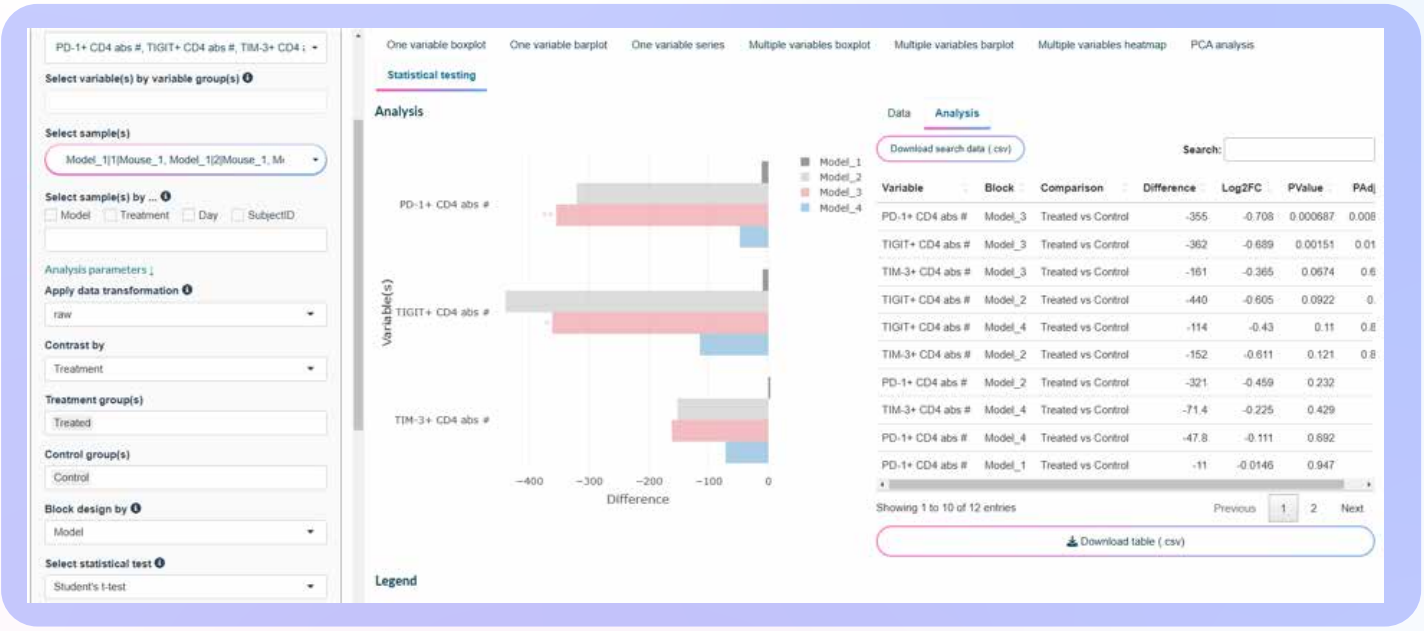
Statistical analysis: including statistical tests like Student's t-test, ANOVA, and Mann-Whitney U test.

Data management: ensuring scalable and secure data storage through Excelra's Cloud Solution.

Data integration: with a fully configurable selection of datasets to include and their linkage to sample and subject metadata.User interface and branding: customized interface to match the client's brand and preferences.

A differential expression analysis to identify differentially expressed genes between a treatment and a control patient group.

A time series analysis tracking a biomarker change over time.
The changes of expression levels for the gene CD274 are shown forboth control and treatment groups.



The statistical analysis module allows users to compare groups
and perform statistical tests such as Student's t-test.

Conclusion

The data visualization software solution proved an essential tool for the client, simplifying data management, analysis and visualization of complex clinical data, especially for biomarker tracking.

With its intuitive design, real-time statistical capabilities, and secure cloud storage, this tool has helped our client accelerate their R&D, saving valuable time and resources, and supports their ongoing work in innovative cancer immunotherapy treatments.