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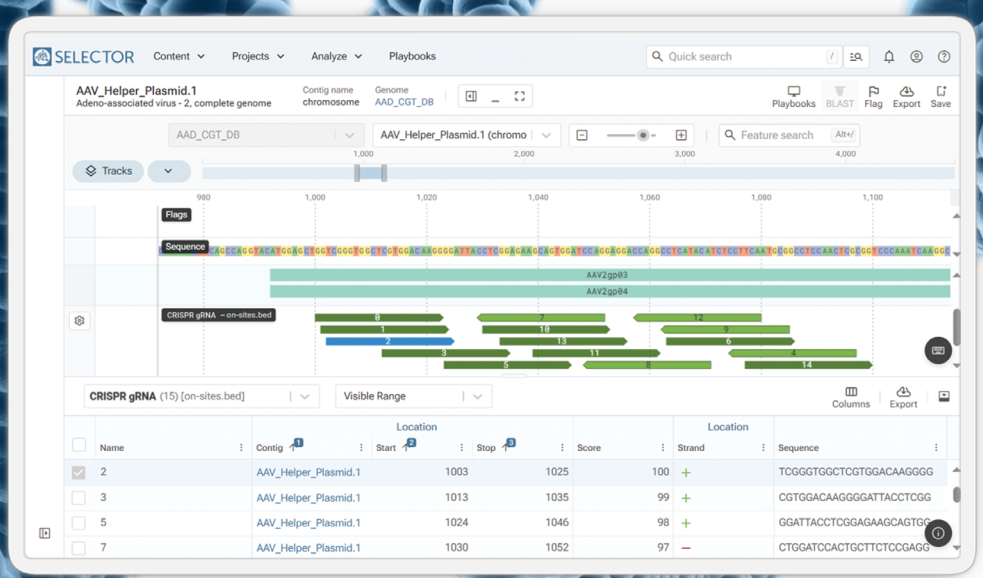
Genedata

A Single Solution for Precise CRISPR Genome Editing

SELECTOR



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Refined CRISPR Data Management and Analysis

The CRISPR system has revolutionized molecular biology by enabling precise DNA modification of any organism. When combined with Next-Generation Sequencing (NGS), it significantly enhances the efficiency of genome editing. A wide range of industries, including biopharmaceuticals, industrial biotech and agriscience, are utilizing CRISPR for its versatility, ease of use, and efficiency.

However, CRISPR generates a wealth of data that needs to be managed and integrated into a secure analysis system. Solutions for CRISPR analysis need to ensure data integrity, security, the use of correct reference genomes, and the ability to incorporate proprietary genomes into the analysis.

Genedata Selector® is an end-to-end enterprise software solution that addresses the challenges of complex CRISPR experiments and subsequent NGS data management. The platform provides a secure single source of truth for analyzing publicly available and proprietary sequenced genomes. Provided wizard-based workflows (Playbooks) allow the automation of time-consuming and routine tasks. These Playbooks enable rapid prediction of different Cas-specific guide RNAs (gRNAs) and potential off-targets on a selected region of the genome sequence of interest and decide between specificity. Playbooks can support NGS experimental analysis in addition to designing the optimal primers to test experiment success (Fig 1). Genedata Selector enables comprehensive CRISPR data analysis in just a few minutes (Fig 2).

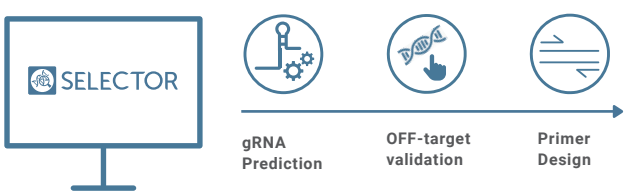
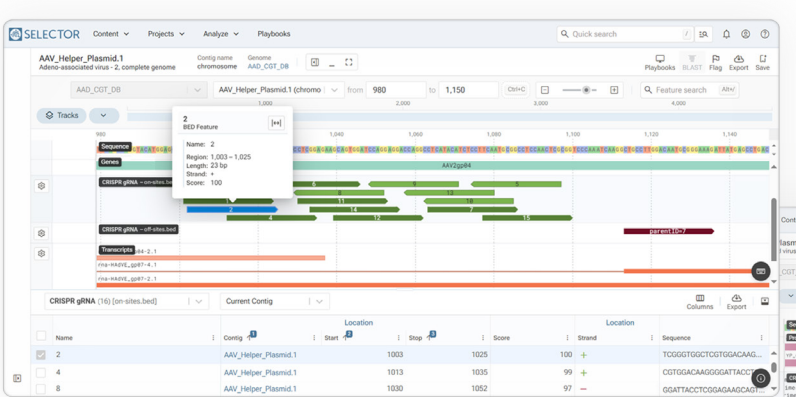
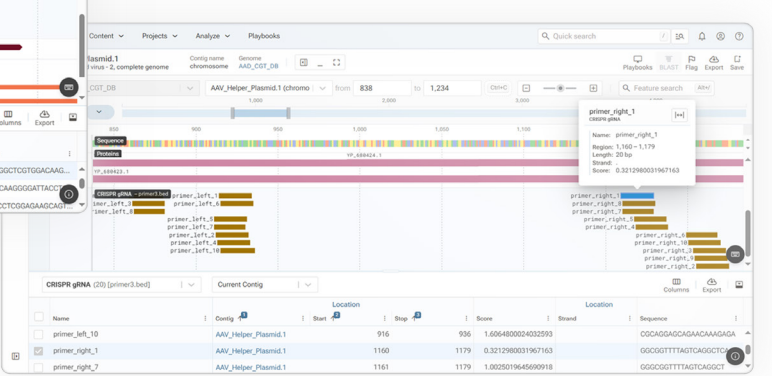


Figure 1 - Genedata Selector enables the generation of custom guide RNAs, the prediction of off-targets, and the design of optimal primers for validation.

Figure 2 - Genedata Selector supports complete NGS data analysis for CRISPR experiments, from sequence curation to standardized reports and beyond.



Screenshot 1 - The genome viewer within the software displays the number of gRNAs predicted for the selected region and off-targets. The underlying data, including exact position, sequence, and specificity, is indicated and readily available for the user.



Screenshot 2 - PCR primers for each predicted gRNA can be generated in few clicks. Users can investigate their position, sequence, and specificity.

In-House CRISPR Analysis

Genedata Selector empowers scientists to conduct CRISPR projects and data analysis in-house, eliminating the need to share confidential data such as proprietary genome information with third parties. Results can be investigated immediately, accelerating the analysis.

Automation of Workflows

Playbooks automate routine tasks, increasing standardization, transparency, and throughput from data entry and processing to report generation (Fig 3). This eliminates errors stemming from manual data handling. Playbooks can be customized and locked for standard use.

Intuitive Display of Result

Results can be viewed using embedded interactive tools. The intuitive interface of the Genome Viewer provides a visual representation of all NGS reads, generated gRNAs, off-targets, and primers. Views can be saved and shared internally facilitating knowledge exchange.

FAIRification of Data

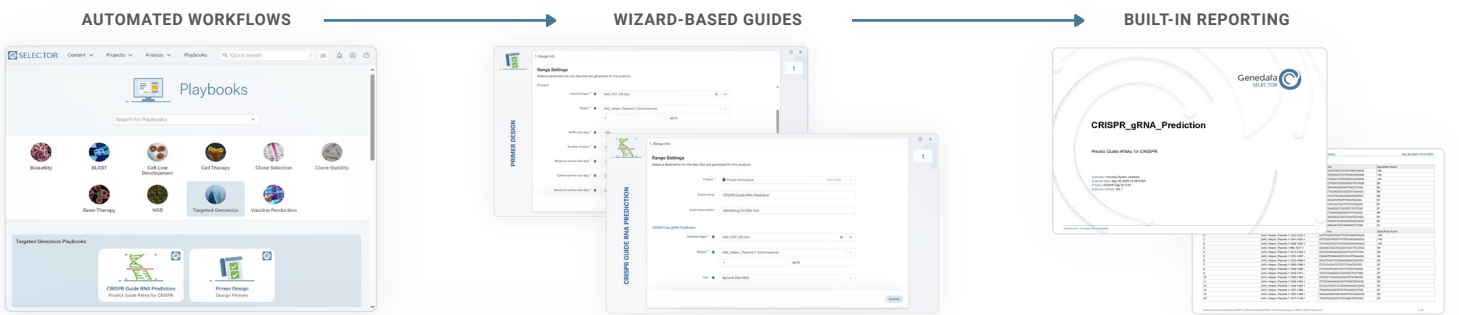
Genedata Selector is fully compliant with FAIR data principles. All generated results are easily accessible, monitored, and tracked. The platform promotes data democratization and collaboration, helping researchers in generating new insights and supporting agile decision-making.

Simplified Reporting

The platform provides comprehensive data traceability and transparency for all CRISPR experiments performed. Detailed reports are automatically generated throughout the experimental process and can be used for internal assessment or for submission to regulatory authorities.

GMP Compliance

Genedata Selector is deployed in R&D, but also in a GMP compliant environment if needed. It enables full 21 CFR Part 11-compliant documentation and supports efficient Computerized System Validation (CSV) projects by customizable validation support services.



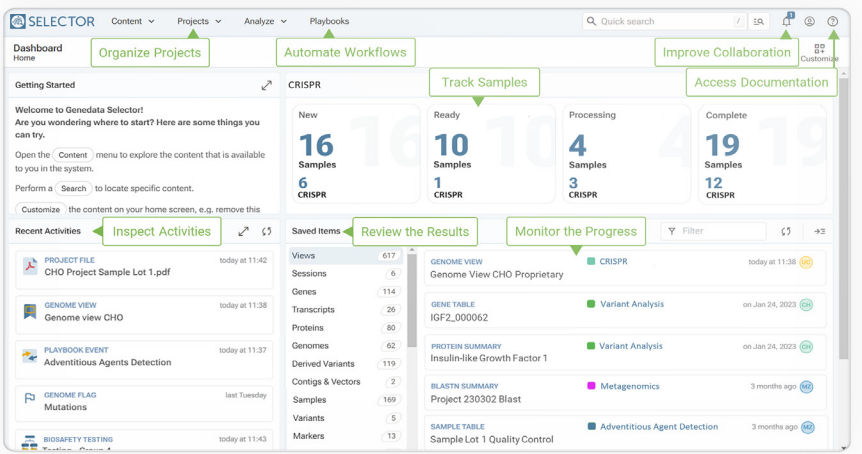


Figure 3 - Ready-to-use CRISPR Playbooks enable scientists to predict gRNAs, analyze data, visualize results, and generate automated reports.

Screenshot 3 - Genedata Selector is accessed through a web browser. The Homepage serves as a command center and a single source of truth for all assays and samples, and their corresponding results.

WATCH THE TUTORIAL

Summary

Genedata Selector supports efficient CRISPR-based gene and genome editing, and the automated processing of complex NGS-based assays. Integration of genomic data improves the success rate and phenotypic data integration provides an end-to-end solution. Embedded Playbooks streamline the different tasks throughout experimental design like gRNA prediction and selection throughout result validation by primer design and NGS data analysis.

Precise and limitless genome editing at your fingertips.

VISIT OUR
WEBSITE

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Genedata SELECTOR

Genedata Selector® captures data from all assays, regardless of therapeutic modality or area. It automates analysis of even the most complex assays, on a single platform and in a harmonized manner, to ensure high result quality and better decision-making. Copyright © 2024 Genedata AG.