

# Life Sciences Review


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**GENOMICS**

EDITION



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**GENE THERAPY CLEARLY  
COMMUNICATED:**

**THE IMPORTANCE OF PATIENT-CENTRICITY, AN AN  
OMNICHANNEL APPROACH, AND HEALTH LITERACY**

\$15





I D E A S   B E C O M E   L I F E



**CENTER FOR ADVANCED STUDIES, RESEARCH  
AND DEVELOPMENT IN SARDINIA  
[WWW.CRS4.IT](http://WWW.CRS4.IT)**

## Center for Advanced Studies, Research and Development in Sardinia (CRS4) Offering Innovative Genomics Solutions

**C**enter for Advanced Studies, Research and Development in Sardinia (CRS4), an interdisciplinary research center, promotes innovative solutions to problems stemming from natural, social, and industrial environments. The company carries out research activities and develops services in various fields, emphasizing genomics.

“Our mission is to help researchers and clinicians in their studies with the awareness that the seriousness and precision of our actions is the basis of the quality and reliability of the data we produce,” says Giacomo Cao, CRS4’s CEO.

CRS4 has developed a state-of-the-art NGS platform, NEXT, allowing high-throughput experiments combined with large computing capabilities (more than 8500 HPC cores Cluster with 5PB storage capacity). This infrastructure is designed to support data processing, reproducibility, traceability, and storage for large-scale biology.

The center has pioneered the development of a secure, web-accessible database with tiered access levels. It enables public access, facilitating the retrieval of aggregate data derived from services performed while adhering to the requisite customer permissions and regulatory compliance. This database seamlessly integrates with key industry databases. Individual users are empowered to conduct comprehensive analyses of results obtained from their sequencing experiments. This enables them to delve deeply into data by selecting specific bioinformatic tasks, enhancing their research capabilities.

Its recent technological upgrade marks a groundbreaking milestone in Italy as it acquires the cutting-edge Illumina sequencer, NovaSeq X Plus, renowned for its impressive production capacity of 120 terabytes per month. This acquisition is complemented by the inclusion of a Hamilton NGS-Star liquid handler for meticulous sample preparation, an Agilent Fragment Analyzer 5300 for precision analysis, and a Tecan Infinite 200 Pro Plate Reader for rigorous quality control and precise fluorescence quantification of nucleic materials. This comprehensive overhaul empowers CRS4 to significantly cut down sequencing expenses while elevating the precision, dependability, and efficiency of data processing.




Giacomo Cao,  
CRS4’s CEO

The tool will allow users to filter and annotate the results based on multiple parameters (data reliability, genetic inheritance, clinical relevance, allele frequencies, and more), giving them a detailed report of the results.

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*Our mission is to help researchers and clinicians in their studies with the awareness that the seriousness and precision of our actions is the basis of the quality and reliability of the data we produce*

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One of the important features of the genomic service CRS4 provides is the strict connection between the sequencing platform represented above and the computing capabilities available. Regarding the latter initiatives, CRS4, renowned for the high-performance computing prowess that forms its backbone, is vigorously pursuing the acquisition of Italy’s inaugural quantum computer. This cutting-edge technology will not only expedite intricate data processing but bolster the security of internal communications and enable access to connected devices within the sequencing services space. 

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E D I T I O N



**TOP  
GENOMICS  
SOLUTIONS  
PROVIDER  
IN EUROPE  
2023**

**Center for Advanced Studies,  
Research and Development  
in Sardinia (CRS4)**

**AWARDED BY  
Life Sciences  
Review**



# Center for Advanced Studies, Research and Development in Sardinia (CRS4)



*The annual listing of 10 companies in Europe that are at the forefront of providing Genomics solutions and impacting the industry in the region*