



## Genome sequencing: work of new laboratory from Tec and FEMSA

Tec de Monterrey and FEMSA unveiled their Tec BASE Genome Sequencing Laboratory during the 51st Research and Development Conference.

This space seeks to help with genome sequencing projects for academic and research institutions, as well as for private industry.

*“In the laboratory, there are resources to sequence DNA fragments, such as proteins of interest to the pharmaceutical industry to complete genomes on a mass scale,”* shared Rocío Chávez Santoscoy, Tec BASE leader.

One of the center’s main objectives is to support sequencing, from complex organisms to microscopic organisms such as the SARS-CoV-2 virus that causes COVID-19.

*“We’re in the genomic era, in which genetics is a major tool in biomedical research and has been essential in the fight against COVID-19,”* added Lorena Guillen, director of the FEMSA Foundation.



## A Mexican space dedicated to the genome

The laboratory is located inside the **FEMSA Biotechnology Center** on the **Tec's Monterrey Campus**, which is part of the **Tec's School of Engineering and Sciences**.

**Tec BASE** has a **team that is specialized in genome sequencing** from American company **Illumina**, one of the most prominent in the field.

Rocío Chávez tells us that the laboratory has **4 sequencing machines**, including a **NovaSeq** machine, which is **only the third in Latin America**.

*"Our vision is for **Tec BASE** to become a genome sequencing center of **excellence**,"* Chávez added.

In addition, she says that the laboratory works in a **multidisciplinary way**, so there's an environment where **not only is the genome sequenced**, but **quick solutions** can be given to various areas with the **data**.

Some of the projects that can be carried out are in the areas of **public health**; diagnosis and **new treatments**; **Industrial production** innovation; and **ecosystem** generation; as well as **food preservation** and design.



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## **The importance of a sequencing laboratory in Mexico**

What is a **sequencing laboratory** used for, and **why is it necessary**?

**Guillermo Torre**, Vice-President of Research and Rector of **TecSalud**, assures us that the biggest **example** of the **importance** of these spaces is the COVID-19 **pandemic**.

*“The **success we have** today that **we’ve enjoyed** with the **vaccine** is due to advances in **genomics**,”* he said.

Torre states that if we’d faced a pandemic without knowledge of the genome, **it wouldn’t have been possible to create vaccines against COVID-19** as quickly as they were created.

He also says that sequencing laboratories will allow us to understand **other variants** and **other viruses** at a **faster speed**, and to be **prepared** to face them.

*“The ability to sequence gives us the opportunity to create **vaccines for the future**,”* he added.



Other **applications** that the doctor notes are in **areas** such as **nutrition**, the **development of “super” products**, and the analysis of **new plants** that could be **more resistant to the environment**.

He also highlighted the importance of **Tec LABS** having an **ecosystem** that not only collects information, but that also has the **ability to analyze** and **interpret the data**.

*“Opening this **sequencing laboratory** today is **a dream come true** for many.*

*“It’s also a **commitment** to focus our efforts on this intersection of major disciplines,” he said.*

For his part, Manuel Zertuche, Dean of the Tec’s School of Engineering and Sciences, highlighted the importance of providing a space **to decipher the code of life: the code to the genetic makeup of all living beings**.

*“**Genome sequencing** opens up the possibility of understanding, preventing, and even predicting the manifestations of disease; safe formulas and food security; or rational use of various natural resources,” he illustrated.*

## Projects from Day 1

Tec BASE leader Rocío Chávez says that even **before** its **opening**, they'd already worked on **projects** and forged **partnerships** with other organizations.

*“We’re currently working on **projects** with **Tec Salud**, the **Mexican Social Security Institute**, the **Federico Gómez Children’s Hospital of Mexico**, and the **Autonomous University of Baja California**,”she said.*

*“Having all this equipment in the country allows us to carry out **suitable sequencing**, and also do it at a **lower cost**,” added Sánchez.*



Similarly, **David Garza Salazar**, Tec de Monterrey’s Rector and Executive President, assured us that this laboratory is **one more step** toward **researchadvances** in Mexico.

*“In the context of our country, we focus on what we don’t have, or what we lack, but I think it’s important to see other aspects.*

*“We have a **committed company** like **FEMSA** and a **committed institution** like the **Tec** with this capacity for execution. These are difficult things, but at the end of the day, someone has to start,”* underlined Garza.

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