



# **SUSTAINABILITY IS IN OUR DNA:**

**Environmentally Friendly Molecular Biology**



**The Nucleic Acid Experts.**



Ecological, economical, and social responsibility have been a focus of BioEcho Life Sciences since the moment of our foundation in 2016. The EchoLUTION technology drastically reduces the amount of plastic waste and hazardous reagents produced during nucleic acid extraction, and sustainable management has also always been a core value at BioEcho. That is why we see ourselves as a pioneer company to introduce sustainability into modern molecular biology.

## Our green mission

**Our green mission is to help scientists become more sustainable in the laboratory and to push ourselves to become as green as possible as a company.**

This means we see sustainability as a holistic approach, not only offering greener products, but also living sustainability in every aspect of our business.

**We are only at the beginning of our journey:**

We need to acquire knowledge, overcome current limitations, and learn from others, but we are ready and excited to do so. Find out more about our approaches in the following sections.

I enjoy ordering products much more when the company cares about our environment. So, I was very pleased to learn that BioEcho reduces product packaging and uses sustainable materials wherever possible.



*Evelina Lesch,  
Molecular Biologist, Klinikum Fürth, Germany*

# Content



## Products

Discover what makes our extraction kits sustainable



## Business practices

See how each department contributes to our green mission



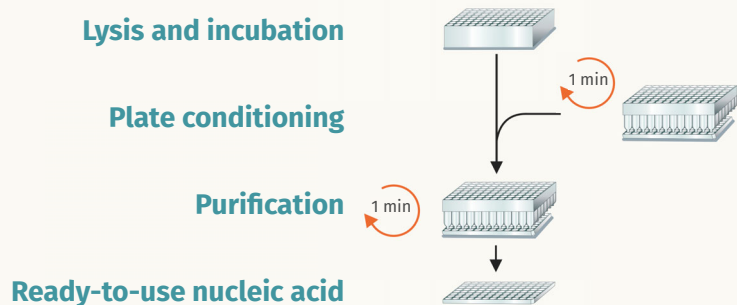
## Company initiatives

Get inspired by our actions and commitments and find out more about our company culture



The **EchoLUTION technology** consists in two simple steps. First, a gentle lysis is performed in aqueous and less-hazardous buffers. Once the cleared lysate is transferred onto the spin column or plate, nucleic acids pass through the purification matrix without interaction, while impurities are held back and completely removed. The result is a ready-to-use nucleic acid for reliable downstream applications.

### The EchoLUTION technology



### Bind-wash-elute method



Only two centrifugation steps of 1 minute each

70 % less plastic waste

Less hazardous reagents



### Silica-based DNA extraction kit



### EchoLUTION DNA extraction kit



“ The simplicity of the process directly implies that less plastic is used.

*Dr. Frank Schäfer  
Co-founder of BioEcho*

### Plastic waste comparison

The plastic waste and liquid waste of an EchoLUTION DNA extraction kit (right) and a corresponding silica-based kit (left) were collected for comparison. 50 DNA extractions each were performed according to the supplier's protocols. Using the BioEcho EchoLUTION kit results in up to 70 % less plastic waste when compared with the silica-based bind-wash-elute kit (depending on the used kit). In addition, fewer toxic reagents are included in the BioEcho DNA extraction kits.



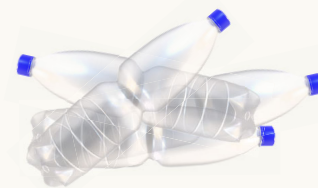
The EchoLUTION technology has clearly a positive impact on the environment by significantly reducing the plastic waste amount produced during nucleic acid extraction.

**~ 1.5 tons of plastic**

saved with EchoLUTION vs. magnetic bead method for SARS-CoV-2 test in 2021



**51,559**



The plastic waste reduction has been measured by the number of EchoLUTION Viral RNA/DNA Swab Kit Plus sold in 2021. The difference in the weight of plastic waste compared to a standard magnetic bead-based method was used to calculate the actual savings.



**Laboratories produce 5.5 billion tons of plastic every year<sup>1</sup> and consume enormous amounts of energy. One deep freezer (-80 °C), for example, requires as much energy as a family household!**

This demonstrates the magnitude of the impact laboratories have on the environment and that, by addressing these issues, scientists and companies can make a big contribution to climate protection and sustainability. And we want to prove that modern molecular biology can be both sustainable and innovative! How our **EchoLUTION technology** for nucleic acid extraction is a sustainable choice is explained by the 3 Rs: **Reduce – Reuse – Recycle**



<sup>1</sup>Urbina, M. A., Watts, A. J. R., & Reardon, E. E. (2015). Labs should cut plastic waste too. *Nature*, 528(7583), 479–479. doi:10.1038/528479c





## We see sustainability as a holistic approach.

Every department at BioECHO fulfills different roles and tasks, but each one contributes to our green mission.

### Marketing and Sales

- Fewer printed marketing materials
- Sustainable print materials with 100 % recycled paper and plant-based ink
- User manuals and instructions for use as online version only



- Water-based ink on carton boxes and labels



- Reusable trade-show booths



- Green website hosting





## Research and Development (R&D)

- Replaces toxic reagents with environmentally friendly alternatives



## Supply Chain management

- Chooses best suitable supplier in terms of distance, fairness, social responsibility, and reliability
- Prefers suppliers from Germany and Europe to reduce the carbon footprint
- Replaces plastic bedding with paper-based bedding



## Manufacturing

- Reusable kit components (such as the conditioning plate) can be purchased separately to reduce unnecessary waste



## Purchasing

- Collective purchasing of consumables
- Suppliers requested to reduce unnecessary packaging materials
- Batch orders preferred
- Energy-efficient instruments



## Integrating sustainability into our daily lives has become normal, but why has not it in the business environment?

The impact we have as companies, employees, PIs or scientists is much bigger compared to our private lives. So we at BioEcho decided “Let’s change this now, let’s make a difference!”

### Get inspired by our actions



Contact: [mona.al-maarri@bioecho.de](mailto:mona.al-maarri@bioecho.de)



Even small changes can have an immense impact – and not only for the environment. Switching to greener products can streamline protocols, improve quality and safety, and save time and money.

*Dr. Mona Al-Maarri,  
Sustainability Manager at BioEcho*



#### Sustainability team

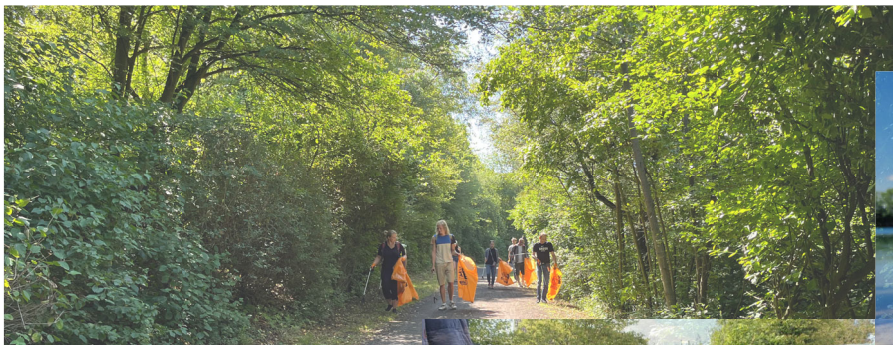
**We started 2022 with an internal sustainability kick-off meeting to brainstorm how we can become greener in various areas, such as the office, supply chain management and our laboratories.**

As a result, we have formed a sustainability team that will decide which ideas to implement first and which will be the driving force to implement the changes. Every employee is welcome to join the team or to suggest new ideas and initiatives.



## Action-day for employees

As part of our corporate social responsibility (CSR) and at the initiative by one of our employees, our management encourages to use one day per year for a good cause or social activity. This could be participating in Fridays for Future demonstrations, picking up trash in the park, organizing gifts for the elderly or children, and much more.



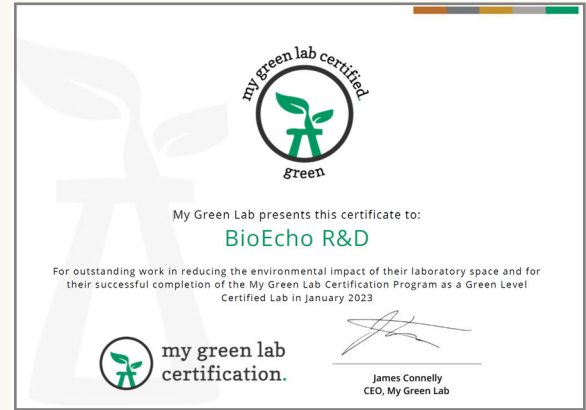
## My Green Lab®

My Green Lab comprises a global community aiming to transform the scientific industry and build a global culture of sustainability in science. At the beginning of 2023, our laboratories in Cologne (Germany) have successfully completed the **My Green Lab Certification Program** as a **Green Level Certified Lab**, which is the highest possible level.



The program is considered as the gold standard in laboratory sustainability best practices and recognized by the United Nations Race to Zero campaign as a key measure of progress towards a zero-carbon future.

For outstanding work in reducing the environmental impact of their laboratory space and for their successful completion of the My Green Lab Certification Program as a Green Level Certified Lab in January 2023



BioEcho is very excited to be part of the My Green Lab community!



We are also in the process to label our extraction kits with the **ACT® Environmental Impact Factor Label**. By emphasizing Accountability, Consistency, and Transparency (ACT), the label process entails third-party verification of the sustainable impacts of a product, its operations, and its end of life.



## Charity

Approximately 40,000 Euros of our revenues were donated to different environmental NGOs in 2021.

BioEcho employees can suggest organizations they would like to support with this money. In 2021 we donated to Ocean Conservancy and NABU, among others.



## Der Grüne Punkt

Germans love to recycle and so do we.

We participate in the European packaging waste management system. Therefore, we contribute to a closed-cycle economy by participating in the dual system of the Green Dot (Der Grüne Punkt).





At BioEcho, we hire humans not robots. Providing our employees the best working environment and benefits are part of our corporate social responsibilities (CSR). To learn more about what you can expect in our company, visit our [Career](#) webpage.

## Employee benefits



Discounted job tickets to allow sustainable transportation by public transport



Weekly sports program and monthly massages for free



Regular social events like online cooking or summer parties



Free water, coffee, tea, and regional fruits

## We want to do everything we can to become as sustainable as possible



We know this is an ambitious goal and we will need to keep changing and improving, but we believe that this is the only way to slow down climate change and contribute to the 1.5 °C goal set by the **Paris agreement**. We also think that sustainability is a topic, where everyone should stand together and share knowledge wherever possible. If you have any suggestions or comments, feel free to reach out.



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