

## NEWS RELEASE

# Cell & Gene Therapy: Helium's Expanding Role in Next-Gen Med-Tech

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## Critical Materials & Resource Dependency

Cell and gene therapies offer a transformative approach to treating disease by targeting root causes rather than just managing symptoms. Already proving effective in genetic disorders, cancers, and chronic illnesses, these therapies are now showing promise in conditions once considered untreatable. As cell and gene therapies (CGTs) shift from experimental to mainstream medicine, the infrastructure required to support them is expanding rapidly - reliant on a growing list of raw materials, some critical, some non-substitutable. Among them: helium.

This week, **UK-based biotechnology company Minaris Advanced Therapies announced the launch of a new GMP facility** in Munich, Germany - a move that further expands its global CGT manufacturing network. Minaris, a leading contract development and manufacturing organization (CDMO), plays a key role in scaling access to advanced therapies.

Global demand for CGT-enabling infrastructure is growing. According to recent analysis, the market for automated and closed cell therapy processing systems is projected to grow from US\$1.5 billion in 2024 to more than US\$9 billion by 2034 (Source: [market.us](#)). A wave of derived demand for the critical materials that make this growth possible - including helium - is expected to follow.



## The invisible backbone of CGT

Helium plays a vital role across multiple technologies that underpin CGT development, delivery, and diagnostics - even though it is not directly involved in gene editing itself.

One example is the 'Gene Gun', which uses pressurised helium gas to propel microscopic, DNA-coated particles directly into target cells. As CGT companies scale their platforms for increasingly precise, personalized therapies, helium's role in these non-invasive delivery systems is quietly expanding.

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Elsewhere, MRI and NMR machines - essential to CGT research, imaging, and patient diagnostics - rely on superconducting magnets that must be cooled to near absolute zero. Only helium, with the lowest boiling point of any element, can maintain the cryogenic temperatures required to keep these systems operational.

As CGT products are stored and transported, helium's cryogenic properties come into play once again. While liquid nitrogen is commonly used in cryopreservation, liquid helium is sometimes used in ultra-low temperature applications, to cool biological material to temperatures where cellular activity effectively halts - preserving stem cells, reproductive cells, and other biological samples critical to CGT workflows. Specifically, it enables vitrification: a rapid cooling process that avoids damaging ice crystal formation.

In addition, helium is increasingly used in Cold Atmospheric Plasma (CAP) devices - a rapidly emerging class of medical technology with growing overlap in the CGT and regenerative medicine sectors. As recently documented in **Cold Plasma's Expanding Role in Healthcare Sparks a New Growth Catalyst for Helium**, these systems rely on helium as a stable carrier gas to generate low-temperature plasma for therapeutic applications.

This is a clear example of derived demand: helium isn't part of the therapy, but it's essential to the platforms that make cell and gene therapies possible, scalable, and safe. Its role across delivery, diagnostics, and preservation highlights how it quietly underpins the CGT value chain. This pressure is amplified by rising competition from AI, quantum, clean energy, and defence - all drawing from the same limited global supply.

The rise of CGT reflects a broader shift in healthcare - faster, more targeted, and increasingly technology-driven. The materials supporting this transformation, helium among them, are now deeply strategic. As the medical sector joins AI, energy, and defence in the race for helium, competition is set to intensify. Securing the therapies of tomorrow means securing the materials that make them possible - and those already aligned with this reality are well positioned to benefit.

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