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FROM SCIENTIFIC CURIOSITY TO GLOBAL INNOVATION

*How M. Chandramohan
Is Building a New Paradigm in
Evidence-Based Healthcare*

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COVER STORY

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In an era when the nutraceutical industry is becoming increasingly crowded with products making similar promises, scientific credibility has emerged as one of the most important differentiators. Consumers, healthcare professionals, and industry partners are demanding more than ingredient lists and marketing claims they are looking for clinically validated solutions, measurable outcomes, regulatory compliance, and a clear understanding of how a bioactive actually works.

At the intersection of these demands stands **M. Chandramohan, CMD of Microcore Research Labs India Pvt. Ltd.**, a biotechnology entrepreneur whose more than 25 years of experience across microbiology, bioprocess engineering, biomaterials, nutraceutical innovation, and clinical research have culminated in an ambitious vision: to develop globally credible healthcare innovations that are not merely manufactured in India, but genuinely **born, developed, validated, and commercialized from India.**

A Foundation Built on Scientific Curiosity

Chandramohan's journey into biotechnology was shaped by an early fascination with the science hidden within everyday life. During his academic years, his curiosity led him to investigate traditional Indian fermentation practices, particularly foods such as idli. Rather than viewing these traditions simply as culinary processes, he recognized them as sophisticated examples of applied microbiology.

His investigations into microbial dynamics during traditional hand-mediated fermentation explored the role of commensal microbial reservoirs, including *Leuconostoc mesenteroides*, in batter aeration, texture, and fermentation quality. His work also highlighted how excessive antimicrobial hygiene could interfere with fermentation efficiency.

This scientific curiosity eventually brought him to **Biocon Ltd.**, where he joined as a Trainee Scientist. There, he developed expertise in microbial morphology and industrial bioprocess engineering, studying how microbial behavior could be aligned with engineering parameters to improve productivity.

His work progressed from shake-flask experiments to laboratory fermenters of 5, 25, and 50 liters and

ultimately to industrial-scale capacities reaching up to 125 KL. He also investigated the influence of shear forces in submerged fermentation on microbial morphology and metabolic pathways. These experiences gave Chandramohan something that would become central to his entrepreneurial philosophy: the ability to connect scientific discovery with scalable industrial implementation.

Learning from More Than 500 Companies

After his experience at Biocon, Chandramohan embarked on an extensive consulting journey, working with more than 500 companies across diverse sectors, including starch processing, poultry, dairy, textiles, leather, sugar, paper, effluent treatment, enzymes, APIs, and food processing.

The experience exposed him to the realities of industrial businesses beyond the laboratory.

He observed leadership structures, operational inefficiencies, technological limitations, management challenges, and the obstacles that frequently prevent promising ideas from becoming scalable businesses. These experiences gradually shaped his conviction that meaningful innovation requires more than scientific knowledge it requires the ability to translate knowledge into commercially viable, operationally sustainable solutions.

Coming from a lower-middle-class background and without a family business legacy or institutional backing, Chandramohan chose to build his entrepreneurial future through knowledge and persistence. The revenue generated through his consulting engagements became the foundation for his next venture.

In 2007, he established **Microcore Research Labs India Pvt. Ltd.**, investing his personal savings to create a research-first biotechnology enterprise.

Turning Waste into Scientific Opportunity

One of Microcore's early research directions reflected Chandramohan's broader philosophy of finding value where others saw waste.

The company systematically screened more than 450 agro-waste materials, eventually developing one of India's early dietary fiber libraries derived





from agricultural residues. Among the innovations explored were fiber applications involving fried Bengal gram husk and garlic peel husk.

This work demonstrated an important principle that would continue to define Microcore: high-value innovation does not necessarily depend on conventional raw materials or volume-driven manufacturing. Instead, scientific insight can transform overlooked resources into commercially and therapeutically valuable materials.

That philosophy later found an even more significant expression in eggshell membrane.

The Eggshell Membrane Breakthrough

One of the most consequential observations in Chandramohan's career was that eggshell membrane represents a naturally occurring extracellular matrix containing a complex combination of biomolecules.

Natural eggshell membrane contains collagen

Types I, III, V, and X, along with elastin, hyaluronic acid, glycosaminoglycans, and bioactive peptides. Chandramohan recognized the potential of this biological architecture for applications involving connective tissue, joint health, tissue repair, and regeneration.

But recognizing potential was only the beginning.

The challenge was to separate the membrane while preserving its biological characteristics. Through years of experimentation, Chandramohan developed a patented chemical-free and solvent-free separation process designed to preserve the native molecular and supramolecular integrity of the membrane.

This resulted in **Microcore's Natural Eggshell Membrane (NESM®)** platform and became a cornerstone of the company's innovation strategy.

Rather than treating eggshell membrane as simply another nutritional ingredient, Microcore approached it as a sophisticated biomaterial whose structural characteristics could influence biological functionality.

Moving Beyond Generic Supplementation

This scientific philosophy has evolved into what Microcore describes as Epitope Integrated Collagen Technology.

Traditional collagen products can primarily be viewed as sources of structural amino acids. Microcore's approach focuses on preserving and delivering specific bioactive peptide sequences, or epitopes, that can participate in biological signaling.

The objective is to move from passive supplementation toward more targeted biological functionality.

According to Microcore's development philosophy, this approach can support mechanisms involving collagen regeneration, chondrocyte activity, inflammatory pathway modulation, extracellular matrix restoration, and tissue repair. The company seeks to substantiate these mechanisms through clinical studies, analytical standardization, and controlled manufacturing processes.

This distinction is central to Chandramohan's understanding of the nutraceutical industry.

For him, **not all ingredients are equivalent simply because they share the same name.** Source integrity, extraction methodology, molecular architecture, standardization, bioavailability, clinical validation, and mechanism of action can all influence biological performance.

That is why Microcore seeks to shift the conversation from *“What is the ingredient?”* to *“What does the ingredient biologically do?”*

Building an Integrated Scientific Ecosystem

Today, Microcore operates as more than a conventional nutraceutical manufacturer. Its ecosystem encompasses discovery research, ingredient standardization, formulation development, clinical validation, and scalable manufacturing.

Its portfolio includes solutions associated with bone and joint health, osteoarthritis, osteopenia, osteoporosis, dermatology, hair fall management, wound healing, tissue regeneration, gastrointestinal health, and anti-aging applications.

The company also provides contract manufacturing and marketing support, clinically validated formulation development, blended bioactives technology, novel molecule identification and development, and regenerative solutions for wound healing and tissue repair.

Its operating framework is supported by standards and regulatory systems including GMP, ISO, FSSAI, and DSIR-recognized R&D standards.

The company's emphasis on intellectual property, clinical substantiation, and regulatory compliance reflects Chandramohan's belief that scientific innovation must ultimately withstand scrutiny beyond the laboratory.

Addressing the Commoditization Challenge

Perhaps one of the biggest challenges Chandramohan identifies in the nutraceutical sector is commoditization.

When multiple products carry similar ingredient names and health claims, consumers and marketers may perceive ingredients as interchangeable. This can push competition toward price rather than performance.

Microcore seeks to counter this through scientific differentiation.

The company works with marketing partners to explain mechanisms of action, clinical evidence, biomarker relevance, structural specificity, bioavailability, analytical validation, and standardization parameters. The goal is to enable partners to communicate scientific value rather than relying solely on promotional narratives.

For Chandramohan, the future of nutraceuticals lies in their evolution into a scientifically driven healthcare interface one that contributes to the broader movement toward predictive, preventive, and personalized healthcare.

From Symptom Management to Regenerative Possibilities

Microcore's research agenda extends beyond existing nutraceutical applications.

The company is exploring regenerative approaches involving wound healing, post-surgical tissue

recovery, cartilage regeneration, bone repair, and gastrointestinal healing.

One of its forward-looking ambitions is to integrate NESM-based bioactives into advanced endoscopic procedures through strategic collaborations with hospitals and medical research centers. The envisioned approach involves developing bioactive scaffolds for targeted application during endoscopy, with the objective of supporting peptic-ulcer healing. Such projects reflect Chandramohan's larger vision of bringing biomaterial science, biotechnology, clinical research, and minimally invasive medicine closer together.

Leadership Defined by Endurance
Behind the science is a leadership philosophy shaped by adversity.

Chandramohan does not define success primarily through recognition or applause. His perspective has been shaped by repeated failures, credibility challenges, limited resources, and the prolonged timelines associated with research, intellectual property creation, clinical validation, and regulatory approvals.

For him, success is ultimately an acknowledgment of perseverance.

That mindset also informs his approach to people management. He believes organizations must preserve the foundational values established by their founders while remaining flexible enough for future generations to interpret those values according to changing circumstances.

He places particular importance on middle management, describing transparent, competent, and trustworthy managers as the bridge between organizational leadership and employees.

The **“Made in India”** Vision

Perhaps the most powerful dimension of Chandramohan's story is his conviction that India's biotechnology future should extend beyond manufacturing.

He draws a deliberate distinction between **“Make in India”** and **“Made in India.”**

For him, true self-reliance means owning the innovation itself developing intellectual property, conducting research, validating products clinically, meeting global quality standards, and creating technologies capable of competing internationally.

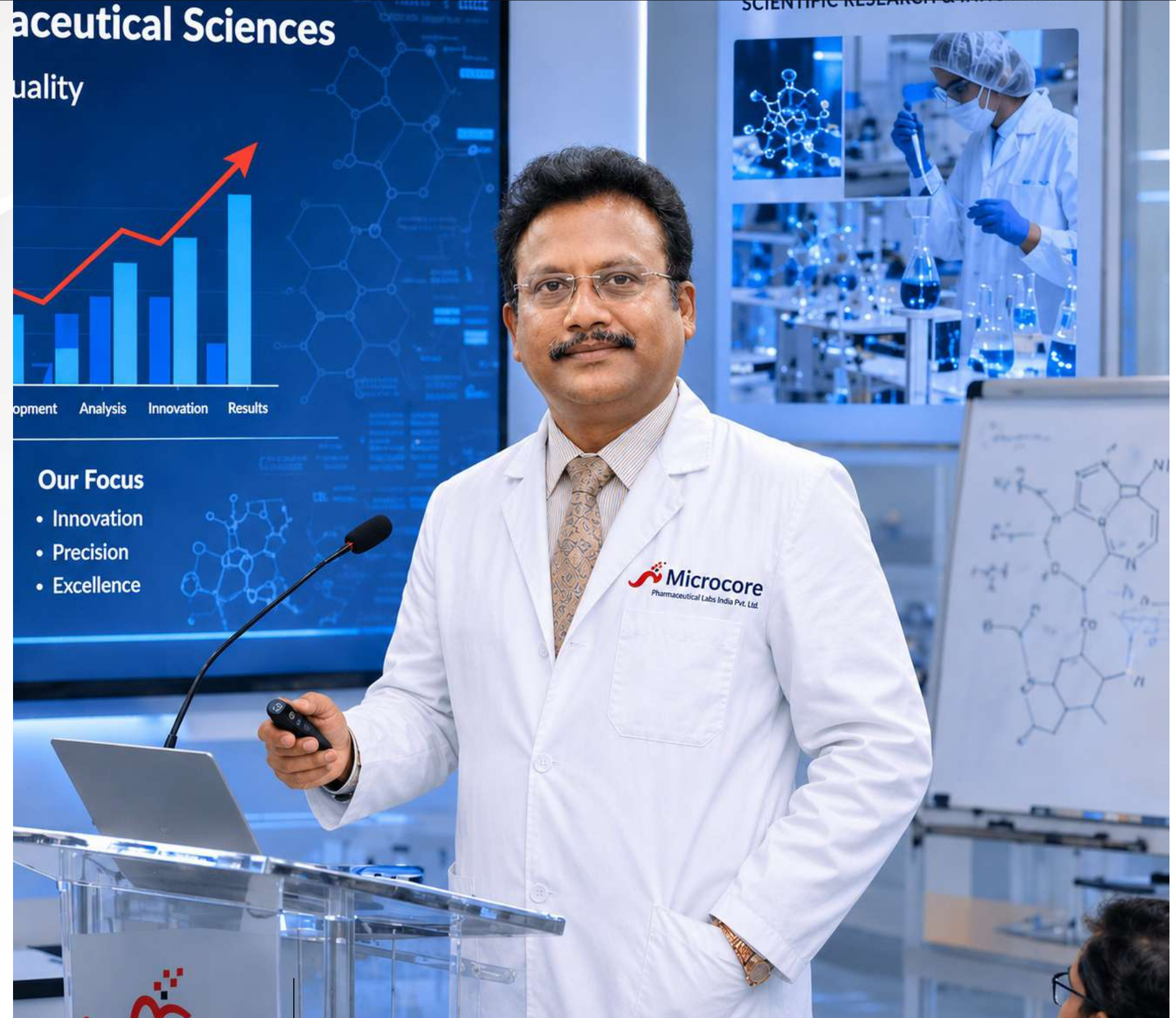
Microcore represents his attempt to demonstrate that this model is possible.

From traditional fermentation practices that sparked his early scientific curiosity, to industrial biotechnology, consulting across more than 500 companies, the systematic exploration of agricultural waste, and the development of patented natural eggshell membrane technology, Chandramohan's journey has consistently revolved around one principle: **science becomes truly meaningful when it can be translated into solutions that improve lives.**

As Microcore moves toward regenerative healthcare, advanced delivery systems, novel biomaterials, and global expansion, its story is no longer simply about nutraceutical manufacturing.

It is about building an **India-born, science-led healthcare innovation ecosystem** one capable of transforming indigenous biological resources into clinically validated technologies and, ultimately, contributing to a more evidence-based, regenerative, and resilient future for healthcare.

For Chandramohan, the journey remains unfinished. And perhaps that is precisely



the point. His philosophy is simple: **endurance is the true mantra of success.** Every failure provides an opportunity to learn, every challenge reveals a gap to address, and every breakthrough becomes another step toward proving that world-class scientific innovation can emerge from India and earn trust on the global stage.