

Landmark Publication Highlights Diagnostic Potential of RoXsta™

Memphasys Limited (ASX: MEM) is pleased to announce the acceptance of a manuscript titled "A Comparative Analysis of the Antioxidant Profiles Generated by the RoXsta™ System for Diverse Biological Fluids" in the prestigious journal *Antioxidants*¹. This breakthrough reinforces the commercial potential and scientific credibility of the company's proprietary RoXsta™ antioxidant profiling system, a cutting-edge diagnostic platform designed to address oxidative stress across diverse biological applications.

The manuscript, co-authored by Laureate Professor John Aitken, Memphasys' Scientific Director, and a team of researchers from the University of Newcastle, validates the system's capability to accurately profile oxidative stress in human and animal samples. Oxidative stress, caused by an imbalance between harmful reactive oxygen species (ROS) and antioxidants, is linked to infertility, cardiovascular disease, neurodegenerative disorders, cancer, and other conditions.

What is Antioxidant Profiling and Why Does it Matter?

The RoXsta™ system offers a comprehensive approach to measuring antioxidant activity, assessing the ability to:

- **Scavenge free radicals** – neutralising unstable molecules that cause cellular damage.
- **Suppress free radical formation** – preventing the onset of oxidative stress.
- **Scavenge hydrogen and organic peroxides** – particularly damaging forms of ROS.

By providing detailed insights into antioxidant activity, the RoXsta™ System serves as a vital diagnostic tool for identifying oxidative stress-related deficiencies. This precision allows for:

1. **Targeted Therapeutic Interventions:** Ensuring antioxidant therapies are applied where truly needed, avoiding risks associated with over-supplementation.
2. **Enhanced Fertility Treatments:** Diagnosing oxidative stress in seminal plasma, where ROS can impair sperm function, improves treatment outcomes in male infertility.
3. **Broad Clinical Applications:** Supporting disease management in conditions such as neurodegenerative diseases, cardiovascular disorders, and cancer.

Beyond human health, Memphasys is exploring the RoXsta™ System's potential in agriculture to optimise livestock productivity by mitigating oxidative stress. Recent scoping studies on cattle fertility (ASX Release: 5 December 2024) highlight its versatility and potential to transform multiple industries. Outside of the livestock industry, the authors also demonstrate the ability of the RoXsta™ System to provide rapid antioxidant assessments of plant products, such as fruit juices, and even commercial cosmetic formulations.

¹ Full manuscript published here: <https://www.mdpi.com/2076-3921/14/1/90>

Key Findings and Commercial Significance

The study highlights RoXsta™'s exceptional ability to diagnose oxidative stress through rapid and precise analysis of biological fluids. Significant findings include:

- The identification of human seminal plasma as a particularly rich antioxidant source.
- Validation of RoXsta™ as a scalable diagnostic tool for point-of-care applications in clinical and agricultural settings.
- A pathway for targeted treatments to address oxidative stress in fertility, health, and productivity sectors.

David Ali, Managing Director and CEO of Memphasys, commented:

“This publication is a testament to RoXsta™'s transformative capabilities. Its diagnostic power not only reinforces Memphasys' leadership in reproductive health but also positions us for broader market opportunities in livestock and clinical applications. RoXsta™ offers a scalable, multi-industry solution that bridges critical gaps in oxidative stress management.”

Future Development Pathways

Memphasys is pursuing key commercial opportunities with the RoXsta™ system:

- **Human Health Diagnostics:** Revolutionising infertility treatments and oxidative stress management in clinical settings.
- **Agriculture:** Enhancing livestock productivity and reproductive outcomes through antioxidant profiling.
- **Global Market Expansion:** Leveraging academic and industry partnerships to explore new applications and scale the system globally.

The publication of this manuscript underscores Memphasys' strategic focus on innovation and market leadership. Investors and stakeholders can anticipate continued updates as the company advances its RoXsta™ technology and expands its commercial footprint.

This announcement has been approved for release by the Board of Memphasys Limited.

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For further information, please contact:

Dr David Ali
Managing Director & CEO
Memphasys Limited
Tel: +61 2 8415 7300
E: david.ali@memphasys.com

David Tasker
Managing Director
Chapter One Advisors
Tel: +61 433 112 936
E: dtasker@chapteroneadvisors.com.au

About Memphasys

Memphasys Limited (ASX: MEM) specialises in reproductive biotechnology for high value commercial applications. Reproductive biotechnology products in development include medical devices, in vitro diagnostics, and new proprietary media. The Company's patented bio separation technology, utilised by the Company's most advanced product, the Felix™ System, combines electrophoresis with proprietary size exclusion membranes to separate the most viable sperm cells for human artificial reproduction.

Website: www.memphasys.com

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