Oncotelic Therapeutics and Sapu Bioscience Announce Publication on Sub-15 nm Nanoparticles in International Journal of Molecular Sciences

Breakthrough Review Defines the Next Frontier in Precision Nanomedicine

Agoura Hills, CA, and San Diego, CA, Nov. 11, 2025 (GLOBE NEWSWIRE) -- Oncotelic Therapeutics Inc. (OTLC) and JV partner **Sapu Bioscience** today announced the publication of their landmark review article, *"Sub-15 nm Nanoparticles for Drug Delivery: Emerging Frontiers and Therapeutic Potential,"* in the *International Journal of Molecular Sciences* (IJMS 2025, 26, 10842; https://doi.org/10.3390/ijms262210842) .

Authored by **Dr. Tapas De**, **Vuong Trieu**, **Scott Myers**, **Sanjive Qazi**, **Saran Saund**, and **Cynthia Lee**, the paper is the **first comprehensive review** to systematically examine nanoparticles *strictly within the 5-15 nm size domain*-a scale that is now emerging as the most transformative scale in nanomedicine.

Defining a New Size Regime in Nanomedicine

While most clinical nanodrugs today rely on carriers between 50 nm and 200 nm, this review highlights how *ultrasmall nanoparticles* below 15 nm demonstrate **fundamentally distinct biological behavior**.

These sub-15 nm systems exhibit:

- **Deeper tissue and tumor penetration**, reaching desmoplastic or poorly vascularized regions that larger nanocarriers cannot access;
- **Reduced reticuloendothelial accumulation** and **rapid renal clearance**, minimizing long-term organ toxicity;
- **Enhanced diffusion across biological barriers**, including the blood-brain barrier; and
- **Quantum-scale surface properties** enabling multifunctional imaging and therapeutic applications.

This nanoscale window represents a **new pharmacological paradigm** where therapeutic delivery, tissue penetration, and clearance kinetics can be simultaneously optimized-offering the potential to overcome limitations of both small molecules and traditional nanocarriers.

A Platform for the Next Generation of Precision Therapies

"Sub-15 nm nanoparticles are not just smaller versions of conventional nanomedicines-they behave as an entirely new class of therapeutic entities," said **Saran Saund**, CBO of Oncotelic Therapeutics. "They open the door to safer, smarter, and more selective cancer treatments capable of crossing biological barriers that have limited drug delivery for decades."

Dr. Tapas De, Director of NanoFormulation at Oncotelic and lead author, added:

"Our analysis reveals that this ultrasmall size range achieves an optimal balance between deep tumor diffusion and systemic safety.

It's the same size regime where nature's own biomolecules-like antibodies and enzymes-operate most effectively."

Impact on Sapu's Nanomedicine Pipeline

The findings directly inform the **Sapu Deciparticle™ platform**, including **Sapu-003**, an **intravenous everolimus nanomedicine** currently preparing for first-in-human evaluation.

"Publishing this comprehensive review validates the foundation of our Deciparticle™ technology," said **Saran Saund**, CBO of Oncotelic.

"Our ability to manufacture highly stable nanoparticles below 15 nm will be key to unlocking new therapeutic frontiers-from oncology to neurological and immune disorders."

About the Publication

Sub-15 nm Nanoparticles for Drug Delivery: Emerging Frontiers and Therapeutic Potential
Authors: Tapas De, Vuong Trieu, Scott Myers, Sanjive Qazi (Oncotelic Therapeutics); Saran Saund, Cynthia Lee (Sapu Bioscience)
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About Oncotelic

Oncotelic (f/k/a Mateon Therapeutics, Inc.), was formed in the State of New York in 1988 as OXiGENE, Inc., was reincorporated in the State of Delaware in 1992, and changed its name to Mateon Therapeutics, Inc. in 2016, and Oncotelic Therapeutics, Inc. in November 2020. Oncotelic is seeking to leverage its deep expertise in oncology drug development to improve treatment outcomes and survival of cancer patients with a special emphasis on rare pediatric cancers. Oncotelic has rare pediatric designation for Diffuse Intrinsic Pontine Glioma ("DIPG") through OT-101 through its 45% joint venture, GMP Bio, melanoma (through CA4P) and its wholly owned subsidiary Sapu, and Acute Myeloid Leukemia ("AML" through OXi 4503). Oncotelic also acquired PointR Data Inc. in November 2019 to build an AI driven biotechnology company. Further, Oncotelic acquired AL-101, during the 4th quarter of 2021, for the intranasal delivery of apomorphine. We intend to develop AL-101 for the treatment of Parkinson Disease, erectile dysfunction, female sexual disorder and hypoactive sexual desire disorder. All these ailments have a very large population suffering from them and there is a need for treatments for each. For more information on AL-101, refer to our 2024 Annual Report on form 10-K filed with the SEC on April 15, 2025.

Oncotelic's Cautionary Note on Forward-Looking Statements

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements, other than statements of historical facts, included in this communication regarding strategy, future operations, future financial position, prospects, plans and objectives of management are forward-looking statements. Words such as "may", "expect", "anticipate" "hope", "vision", "optimism", "design", "exciting", "promising", "will", "conviction", "estimate," "intend," "believe", "quest for a cure of cancer", "innovation-driven", "paradigm-shift", "high scientific merit", "impact potential" and similar expressions are intended to identify forward-looking statements. Forward looking statements contained in this press release include, but are not limited to, statements about future plans related to the operations of the JV, taking the JV into an initial public offering or the success thereof, the progress, timing of clinical development, scope and success of future clinical trials, the reporting of clinical data for the company's product candidates and the potential use of the company's product candidates to treat various cancer indications as well as obtaining required regulatory approval to conduct clinical trials and upon granting of approval by the regulatory agencies, the successful marketing of the products; building and the success of our nanoparticle platform and the related success of launching the platform, the success of the launch of a company with a DAO infrastructure, the success of the entity and the plans surrounding the pet and animal health, the ability for the Company to register the tokens of Pet2DAO, the actual filing of a registration statement and approval of the PDAO, or any other tokens that we may launch, as registrable securities with the SEC through a registration statement, the ability of the tokens to be tradable or any value such tokens may have if they become tradable.. Each of these forward-looking statements involves risks and uncertainties, and actual results may differ materially from these forward-looking statements or may not occur at all. Many factors may cause differences between current expectations and actual results, including unexpected safety or efficacy data observed during preclinical or clinical studies, clinical trial site activation or enrollment rates that are lower than expected, changes in expected or existing competition, changes in the regulatory environment, failure of collaborators to support or advance collaborations or product candidates and unexpected litigation or other disputes, taking the Company or its affiliates through initial public offerings. These risks are not exhaustive, the Company faces known and unknown risks, including the risk factors described in the Company's 2024 Annual Report on Form 10-K filed with the SEC on April 15, 2025 and in the company's other periodic filings. Forward-looking statements are based on expectations and assumptions as of the date of this press release. Except as required by law, the company does not assume any obligation to update forward-looking statements contained herein to reflect any change in expectations, whether because of new information, future events, or otherwise.

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