SUNSHINE BIOPHARMA ANNOUNCES BREAKTHROUGH RESEARCH RESULTS ON THE COMPANY'S K1.1 mRNA PRODUCT AS A NOVEL THERAPEUTIC AGENT FOR HUMAN HEPATOCELLULAR CARCINOMA

FORT LAUDERDALE, FL / ACCESSWIRE / December 2, 2024 / Sunshine Biopharma Inc. (NASDAQ: "SBFM") (the "Company"), a pharmaceutical company offering and researching life-saving medicines in a variety of therapeutic areas including oncology and antivirals today announced that it has completed mouse model studies providing proof-of-concept for the Company's K1.1 mRNA product as a novel therapeutic agent for human hepatocellular carcinoma.

Human hepatocellular carcinoma (HCC) is the third leading cause of cancer-related deaths worldwide and the most common type of primary liver cancers in adults. In recent years, several systematic treatment options were available to HCC patients either as first-line or second-line treatment. Yet, the five-year survival rate of HCC patients remains at only 18-21%.

When transfected into cultured human HCC cell lines and patient-derived HCC cells, K1.1 mRNA exhibited dose-dependent anti-proliferative activity in vitro. Following encapsulation in specifically engineered lipids, the resulting K1.1 mRNA-Lipid Nanoparticles (K1.1/LNP) were efficiently delivered to livers of mice in a dose-dependent manner in vivo. K1.1/LNP, under repeated systemic dosing, was found to reduce growth of two different types of human HCC tumors orthotopically grafted into the livers of immunodeficient mice. The pharmacodynamics of K1.1/LNP in intrahepatic tumors was well correlated with antitumor efficacy in mice.

We are excited about these findings which show the feasibility of K1.1 mRNA technology to not only enter malignant liver cells in a dose dependent fashion, but also in a manner that inhibits growth of these same cells" said Dr. Steve Slilaty, CEO of Sunshine Biopharma and inventor of the Company's K1.1 mRNA technology. "We are currently conducting additional animal studies to delineate the therapeutic window and optimize dosing of our K1.1/LNP for use as a single agent in future treatment of HCC patients," he added.

About Sunshine Biopharma Inc.

Sunshine Biopharma currently has 63 generic prescription drugs on the market in Canada and 31 additional drugs scheduled to be launched in the remainder of 2024 and in 2025. Among the new drugs to be launched is NIOPEG®, a biosimilar of NEULASTA®. Like NEULASTA®,

NIOPEG® is a long-acting form of recombinant human granulocyte colony-stimulating factor (filgrastim). It is indicated to decrease the incidence of infection in patients with non-myeloid malignancies receiving anti-neoplastic therapy.

In addition, Sunshine Biopharma is conducting a proprietary drug development program which is comprised of (i) K1.1 mRNA, an mRNA-Lipid Nanoparticle targeted for liver cancer, and (ii) PLpro protease inhibitor, a small molecule for treatment of SARS Coronavirus infections. For more information, please visit: www.sunshinebiopharma.com.

Safe Harbor Forward-Looking Statements

This press release contains forward-looking statements which are based on current expectations, forecasts, and assumptions of Sunshine Biopharma, Inc. (the "Company") that involve risks as well as uncertainties that could cause actual outcomes and results to differ materially from those anticipated or expected. These statements appear in this release and include all statements that are not statements of historical fact regarding the intent, belief or current expectations of the Company, including statements related to the Company's drug development activities, financial performance, and future growth. These risks and uncertainties are further described in filings and reports by the Company with the U.S. Securities and Exchange Commission (SEC). Actual results and the timing of certain events could differ materially from those projected in or contemplated by the forward-looking statements due to a number of factors detailed from time to time in the Company's filings with the SEC. Reference is hereby made to cautionary statements and risk factors set forth in the Company's most recent SEC filings.

For Additional Information:
Sunshine Biopharma Contact:
Camille Sebaaly, CFO
Direct Line: 514-814-0464
camille.sebaaly@sunshinebiopharma.com