SABINSA NEWS RELEASE

MEDIA CONTACT: Suzanne Shelton I The Shelton Group Suzanne@SheltonGroupPR.com I T: 847-922-5454

PILOT STUDY PUBLISHED EXAMINING CURCUMIN C3 COMPLEX® AND BIOPERINE® WITH TAURINE AS TREATMENT FOR HEPATOCELLULAR CARCINOMA

East Windsor, NJ (October 2, 2019) — The body of research supporting efficacy of Sabinsa's branded ingredients continues to grow with a recent clinical paper reporting on the use of the company's Curcumin C3 Complex® and BioPerine®, and taurine on hepatocellular carcinoma (HCC) patients: A combined treatment of curcumin, piperine, and taurine alters the circulating levels of IL-10 and miR-21 in hepatocellular carcinoma patients: a pilot study published in the Journal of Gastrointestional Oncology.

Hepatocellular carcinoma (HCC) is the commonest primary cancer of the liver, representing the fifth and the eighth largest cause of cancer in men and women, respectively. Further, it is considered the third most lethal cancer worldwide with about 700,000 deaths reported annually. It is often treated with with some surgical choices but plagued with high recurrence. Organ transplant and chemotherapy are possible solutions, again, limited in scope. The search for additional treatments is ongoing.

The present study covered 20 patients in a single center, open-arm, Phase II study with HCC patients recruited at the medical oncology clinic at National Cancer Institute, Cairo University. The study involved three treatment cycles, with the measurement of the levels of AST, ALT, Albumin, total bilirubin, AFU (Alpha-L-fucosidase, an often recommended serum biomarker in HCC) and IL-10 after each treatment cycle. All the parameters showed improvement compared to baseline levels, progressively with each succeeding cycle. One other primary endpoint in this study was the levels of oncogenic micro RNA-21 which showed statistically significant decrease in these patients on this treatment. The median overall survival (OS) rate was 17 months with patients with lower IL-10 and microRNA-21 having higher OS.

"Sabinsa has been marketing Curcumin C3 Complex, and the natural bioavailability enhancer, BioPerine each with a rich history of use in many preclinical and clinical studies covering numerous health conditions, for more than quarter of a century, " said Sabinsa founder Dr. Muhammed Majeed. "This publication continues to reinforce the benefits of both of them."

This study can be accessed online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6657326/

About Sabinsa Corporation:



Sabinsa, founded in 1988, is a manufacturer and supplier of herbal extracts, cosmeceuticals, probiotics, minerals, and specialty fine chemicals. The company markets over 100 standardized botanical extracts and employs more than 1000 people worldwide in 11 manufacturing, R&D, sales, and distribution facilities. Process development and product innovation form the focus of the ongoing R&D efforts in the company's research facilities, located in India and the U.S. Products, many of which are both Kosher and Halal, are extensively researched, patented, and supported by hundreds of published clinical

studies. Sabinsa's botanical cultivation program totals nearly 40,000 acres to ensure sustainable, fair trade materials are used in these ingredients. For more information, visit sabinsa.com.

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¹ Schütte K, Bornschein J, Malfertheiner P. Hepatocellular carcinoma--epidemiological trends and risk factors. Dig Dis 2009;27:80-92. 10.1159/000218339