SABINSA NEWS RELEASE
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STUDY SHOWS INHIBITORY EFFECT OF CURCUMIN C3 COMPLEX® AND BIOPERINE® COMBINATION ON MALIGNANT MESOTHELIOMA CELLS

East Windsor, NJ (September 18, 2019) – Sabinsa's Curcumin C3 Complex® in combination with BioPerine® (CBP) has an inhibitory effect on malignant mesothelioma cells, according to an in vitro and in vivo study published in *Journal of Experimental and Clinical Cancer Research*.

Malignant Mesothelioma (MM) is an aggressive form cancer primarily associated with exposure to asbestos fibers. Long latency, non-specific clinical symptoms, and resistance to chemotherapy render MM especially dangerous.

The study, *Curcumin C3 Complex®/ BioPerine® has antineoplastic activity in mesotherlioma: an in vitro and in vivo analysis* by Francesco Di Meo et al (J Exp Clin Cancer Research 2019; 38:Article no. 360), explored the combined use of CBP in drug susceptible and drug-resistant MM cancer cell-types. The researchers found that CBP worked well in synergistically impairing the cancer cell viability, cellular self-renewal ability, cell proliferation rate, and cell migration as assessed by wound-healing assay. Onset of apoptosis of cancer cells in drug susceptible and resistant ones was also determined occur by activation of intrinsic pathway through altered ratio of Bax/BCl2 proteins. Efficacy of CBP was further demonstrated in a xenograft model of MM. Low cancer cell proliferation (as judged by Ki-67 levels), higher TUNEL score indicating enhanced apoptosis and reduced angiogenesis in tumor cells were noted in the animal graft study.

The authors noted that it might be possible to include CBP administration with drug regimens for MM similar to an earlier colorectal cancer study of FOLFOX with C3 Complex (*Journal of Nutrition:* doi/10.1093/jn/nxz029/5499032).

"Research suggesting that utilization of our flagship ingredients in combination with standard pharmacological therapies may pave the way to developing alternative and more effective treatment regimens for MM is encouraging, as its prognosis, at present, remains poor," said Sabinsa's founder, Dr. Muhammed Majeed. "We continue to be gratified that researchers throughout the world are investigating our Curcumin C3 Complex and BioPerine for advances such as this."

The open access article can be found here: https://jeccr.biomedcentral.com/articles/10.1186/s13046-019-1368-8

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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