

Dr. Edwardo Perez
Signum Biosciences



Edwardo Perez is Chief Scientific Officer (CSO) of Signum Biosciences. Dr. Perez has 15+ years of R&D experience in the biotech and pharmaceutical industry with expertise in the fields of dermatological inflammatory disorders, consumer product (e.g. skin care) and nutritional supplement development and a firm knowledge of neurodegenerative diseases. As CSO, Dr. Perez guides cross-functional teams to select novel compounds and botanical extracts for dermatological drug development and cosmetic applications. In addition, under the direction of Edwardo, Signum has developed and out-licensed numerous

dermatological technologies and which are now included in several products globally. Additionally, as Signum's lead medical writer, Dr. Perez has successfully raised >\$10 million in funding from the National Institute of Allergy and Infectious Diseases, National Institute of Arthritis and Musculoskeletal and Skin and the National Institute of Aging. Prior to joining Signum, he received his PhD in Biochemistry and Molecular Biology from the University of Medicine and Dentistry of NJ (UMDNJ) studying the role of reversible methylation in bacterial signaling systems. He received his BA in Biology from Rutgers University.

ABSTRACT:

“HYVIA[®]: A Vitamin F enriched chia seed extract for skin protection”

Protein phosphatase 2A (PP2A), is a master regulator whose critical role and function has been mostly studied in neurodegeneration, cancer, metabolic disorders. However, more recent studies demonstrate this heterotrimeric protein also plays a critical role for skin barrier function, oxidative stress signaling and inflammation. Moreover, in human fibroblasts, oxidative stress has been shown to induce demethylation of PP2A, driving the disassociation of the fully active PP2A holoenzyme to the less active dimer form. Chia (*Salvia hispanica*), produces seeds which have been one of the basic foods of Central American civilizations for centuries dating back to 1500 BC¹¹. In recent years, chia seeds have gained importance and notoriety as a “super food” given it is the highest known plant source of ω 3 α -linolenic acid (ALA) as well as high levels of ω 6 linoleic acid (LA). Together, ALA and LA are referred to as “Vitamin F”. While chia has been widely studied as a functional food and reported to have several clinical benefits including cardio-protection, weight loss and metabolic disorder, very little has been published on its benefits on skin when applied topically. Here we demonstrate for the first time the identification and characterization of a novel chia seed oil extract called HYVIA[®]. We report that HYVIA[®] possesses higher “free” Vitamin F levels which enhances its ability to support the active form of protein phosphatase 2A (PP2A), and increase important hydration factors such as Aquaporin-3 (AQP3) and Hyaluronic Acid Synthase 2 (HAS2), that commercial chia seed oil extracts do not. Moreover, by enriching for higher levels of “free” Vitamin F levels, HYVIA[®] demonstrates more potent anti-microbial and anti-inflammatory properties as well. Lastly, clinical results in human subjects demonstrates HYVIA[®] is well tolerated and significantly increases skin barrier and hydration properties over vehicle when applied topically.