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East Indian sandalwood oil (EISO) alleviates inflammatory and proliferative pathologies of psoriasis

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Psoriasis, a chronic inflammatory skin disease marked by hyper-proliferation and aberrant differentiation of keratinocytes, affects 2-3% of the population in the United States. Research into the pathogenesis of psoriasis has been hampered by the lack of animal models that accurately reflect the biology of psoriatic phenotype. We have previously reported that EISO has significant anti-inflammatory properties in skin models. We hypothesized that EISO might provide therapeutic benefit to psoriasis patients due to its anti-inflammatory and anti-proliferative properties. The clinical relevance of this hypothesis is supported by interim results from an on-going proof-of-concept Phase 2 clinical trial in which topically applied EISO is demonstrating to be well tolerated and helpful in alleviating mild to moderate psoriasis symptoms. We have evaluated the ability of EISO to affect the psoriatic phenotype using organotypic psoriasis tissue and normal (non-psoriatic) human skin models from MatTek Corporation. Treatment of the psoriasis tissue model with EISO reverted psoriatic pathology, as demonstrated by histologic characterization and expression of keratinocyte proliferation markers, Ki67 and psoriasin. These phenotypic affects correlated with greatly suppressed production of ENA-78, IL-6, IL-8, MCP-1, GM-CSF and IL-1β. Demonstration of the ability of EISO to abrogate these psoriasis symptoms in well-characterized *in vitro* psoriatic tissue models supports the hypothesis that the clinically observed symptom alleviation is due to suppression of intrinsic tissue inflammation reactions in afflicted lesions. This study presents systems to further study the underlying mechanisms that cause psoriasis, and to help direct and accelerate the development of more effective therapies.

Biography

Manju Sharma is an MD and Doctor of Naturopathy working currently as a Scientist at Vancouver Prostate Centre, Vancouver General Hospital, Canada for the last 10 years. Prior to this, she worked in the Department of Pathology and Lab Medicine, VGH for 10 years on various projects including molecular diagnosis of tuberculosis, multi-drug resistant tuberculosis, human solid tumors, kidney disorders, medicinal herbal plants like *Echinacea* which is widely used all over Europe and North America for the treatment of cough and cold: Active principles and their mode of action on various human viral and bacterial diseases. She has published over 75 papers in medical journals and has made several presentations in the field of Medicine.

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