



Ravi P. Sahu

PhD, Department of Pharmacology and Toxicology, Boonshoft School of Medicine Wright State University, Dayton

Phytochemicals as a promising traditional and complementary approach for breast cancer

Statement of the Problem: Naturally occurring dietary phytochemicals have gained significant attention due to their notable beneficial properties, including anti-inflammatory and antioxidant activities. For ages, dietary phytochemicals have been practiced to treat various health-related ailments due to their safe and non-deleterious effects. Importantly, in the past several decades, their anti-carcinogenic effects have been extensively explored against various highly aggressive malignancies, including triple-negative breast cancer (TNBC). Methodology & Theoretical Orientation: TNBC unlike other human malignancies, lacks definite prognostic markers. Besides, while improved survival responses have been documented with the ongoing therapeutic approaches, the development of tumor resistance mechanisms as well as serious adverse effects to these treatment options pose major challenges in the treatment of TNBC. Thus, rational combination strategies should be exploited as an alternative approach for effective treatment and/or management of TNBC. Findings, Conclusion & Significance: Among various dietary compounds, withaferin-A (WA), a phytochemical derived from an ayurvedic medicinal plant, *Withania somnifera* has been characterized to possess anti-inflammatory and anti-cancer properties against multiple tumor types, including TNBC using various *in-vitro* and *in-vivo* models. The overall goal is to highlight the mechanistic insights with recent updates, including the pharmacokinetics parameters of WA against breast cancer with major emphasis on TNBC.

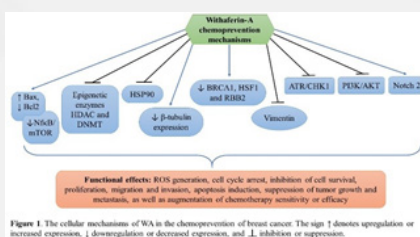


Figure 1. The cellular mechanisms of WA in the chemoprevention of breast cancer. The sign ↑ denotes upregulation or increased expression, ↓ downregulation or decreased expression, and ⊥ inhibition or suppression.

Biography

Ravi P. Sahu has expertise in various cancer models and related methodologies. His studies were among the ones to define the mechanistic insights of various anti-cancer agents, including naturally occurring phytochemicals in cancer chemoprevention. He has given several invited lectures in various scientific meetings, and has published over 60 peer-reviewed 60 articles in various scientific journals.