Review Article Open Access

Cancer-specific Therapeutic Potential of Resveratrol: Metabolic Approach against Hallmarks of Cancer

Dong Hoon Suh¹, Mi-Kyung Kim², Hee Seung Kim², Hyun Hoon Chung², Yong Sang Song^{2, 3, 4, *}

¹Department of Obstetrics and Gynecology, Seoul National University Bundang Hospital, Seongnam, Korea; ²Department of Obstetrics and Gynecology, Seoul National University College of Medicine, Seoul, Korea; ³Cancer Research Institute, Seoul National University College of Medicine, Seoul, Korea; ⁴Major in Biomodulation, World Class University, Seoul National University, Seoul, Korea

*Corresponding Author: Yong Sang Song, Department of Obstetrics and Gynecology, Seoul National University College of Medicine, 101 Daehak-ro Jongno-gu, Seoul 110-744, Korea

Submission date: May 2, 2013; Acceptance date: August 21, 2013; Publication date: August 26, 2013

ABSTRACT:

Cancer hallmarks include evading apoptosis, limitless replicative potential, sustained angiogenesis, tissue invasion and metastasis. Cancer cells undergo metabolic reprogramming and inevitably take advantage of glycolysis to meet the increased metabolic demand: rapid energy generation and macromolecular synthesis. Resveratrol, a polyphenolic phytoalexin, is known to exhibit pleiotropic anti-cancer effects most of which are linked to metabolic reprogramming in cancer cells. This review summarizes various anti-cancer effects of resveratrol in the context of cancer hallmarks in relation to metabolic reprogramming.