

## 4<sup>th</sup> International Conference and Exhibition on **Nutrition**

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### **Black raspberries inhibit pancreatic carcinogenesis via suppressing Raf/ MEK/ ERK/ STAT3 signaling pathways and promoting apoptosis**

Although with improved understanding of the pathophysiology of pancreatic ductal adeno-carcinoma (PDAC) in the past two decades, PDAC remains one of the poorest prognostic tumors, with an extremely low 5-year survival rate (4.1%). Diets rich in fruits and vegetables have been reported to reduce the risk of cancer development. Our current study investigated the potential effects of BRBs against PDAC in mice. Kras<sup>LSL.G12D/+</sup>-Trp53<sup>LSL.R172H/+</sup>-Pdx-1-Cre mice spontaneously develop PDAC that recapitulates human PDAC. Four-week-old Kras<sup>LSL.G12D/+</sup>-Trp53<sup>LSL.R172H/+</sup>-Pdx-1-Cre mice bearing precancerous pancreatic intraepithelial neoplasia (PanIN) lesions were fed either control or 5% BRB diet. Kaplan-Meier survival analysis showed that BRBs significantly prolonged survival of PDAC mice. BRBs suppressed Raf/MEK/ERK/STAT3 pathways, downstream of Kras and inhibited cell proliferation in pancreatic tumors. In addition, BRBs significantly decreased the size of tumors produced by injecting luciferase-transfected human Panc-1 cells (Panc-1-Luc) into the pancreas of NOD.SCID mice. Orthotopic tumors in BRB-treated NOD.SCID mice had higher rate of apoptosis compared to tumors from mice fed control diet. These results support the hypothesis of a clinical potential of BRBs for the delay of pancreatic cancer progression through suppressing cancer cell proliferation and/or promoting apoptosis.

### **Biography**

Li-Shu Wang is an Assistant Professor of Medicine in the Division of Hematology and Oncology at the Medical College of Wisconsin (MCW). Her research interests are in the fields of chemical carcinogenesis and cancer chemoprevention. She received her PhD in Veterinary Biosciences from Ohio State University where her research was focused on illustrating the mechanisms of conjugated linoleic acid, naturally occurring compounds, in the prevention of breast cancers. Afterward, she continued involved in cancer prevention research as a Post-doctoral fellow and research scientist at the same university. During her Post-doctoral training, her research was focused on the prevention of gastrointestinal cancers using berries, their active components and metabolites. Her research is documented in more than 45 peer-reviewed publications and book chapters. She has received numerous awards including scholar-in-training award of American Association for Cancer Research (AACR) prevention meeting and IAMS research funds. She is a reviewer for several publications including but not limited to Cancer Research, Clinical Cancer Research, Cancer Epidemiology and Biomarkers & Prevention.

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