

CPH Seminar in Precision Medicine

Match up Nature Products with Cancer Targets in the Era of Precision Medicine

Dr. Wendong Huang, PhD, Professor

Department of Diabetes Complications and Metabolism Beckman Research Institute, City of Hope Duarte .CA

Natural products provide a unique source for drug discovery. We have successfully matched up several natural compounds with drug targets in cancer and other diseases. Berbamine (BBM) is a natural product compound isolated from the herbal medicine Berberis amurensis, which carries out its anti-tumor activity by targeting Ca^{2+} /calmodulin-dependent protein kinase II γ (CAMKII γ ; encoded by *CAMK2G*). We show that CAMKII γ can stabilize MYC by phosphorylating it directly at Ser62, thereby promoting lymphomagenesis and other cancers. Targeting CAMKII γ with BBM destabilizes the MYC protein to suppress T cell lymphomagenesis. BBM provides a new cancer therapeutic strategy for MYC-dependent cancers.

