

CPH Seminar in Precision Medicine

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

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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. Berberine (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.

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