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## Therapeutic potential of henryin in the treatment of pancreatic cancer

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Pancreatic cancer is characterized by early metastasis and poor prognosis. Henryin, an *Isodon* diterpenoid, was suggested to exhibit anti-carcinogenic activity. For the first time, we have unveiled its anticancer potential in pancreatic cancer cells. Our results have shown that henryin (0.1-10 μM) induced growth inhibition in PANC-1 pancreatic cancer cells, which was most significant among other cancer cell types. The growth-inhibitory effect of henryin was more prominent among other ent-kaurane diterpenoids under the same dose range. Besides, it has also been noted that henryin reduced the number and size of cancer cell colonies and facilitated both autophagy and apoptotic cell death. The drug action of henryin (1 or 5 μM) in combination with the orthodox chemotherapeutic drug gemcitabine (10-500 nM) were also studied. Data indicate synergistic effects of henryin and gemcitabine on cell growth inhibition as proven by isobologram analysis. Following the tests on a combination of henryin-gemcitabine working concentrations, the optimal effect on the induction of apoptosis was found to be 1 μM of henryin and 100 nM of gemicitabine, even better than the use of gemcitabine at a higher concentration of 250 nM. Other than this, the henryin-gemcitabine combo also induced S-phase cell cycle arrest. S100A4 plays an important role in cancer invasion and metastasis. Our data here have revealed that henryin suppressed rS100A4-mediated migration of PANC-1 cells through downregulation of pro-invasive and angiogenic factors. Findings in this study have exemplified that henryin could is a drug adjuvant that concomitantly increases the effectiveness of pancreatic cancer chemotherapic drugs.

### Biography

Joshua K S Ko obtained his PhD degree in Pharmacology at the University of Hong Kong Medical School after completion of his undergraduate training at the University of Toronto, Canada with double specialists in Toxicology and Nutritional Sciences. He has been actively involved in many research projects, published over 100 papers in reputed journals and serving as an editorial board member of various journals including those of the Nature Publishing Group. He is currently member of the American Association for Cancer Research (AACR), European Association for Cancer Research (EACR) and International Union of Basic and Clinical Pharmacology (IUPHAR).

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