Title of Invention: Drug discovery of novel HDAC6 inhibitors against human cancers

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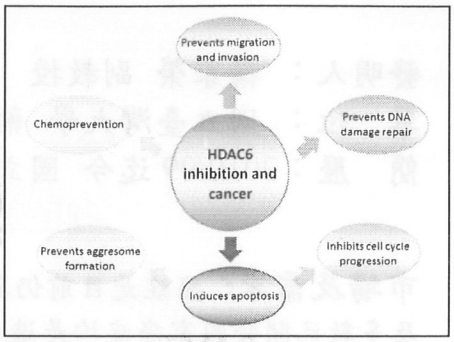

Market Needs: Cancer is a disease that can't be cured. In Taiwan and other developed countries, it is the leading cause of nationals death, need to invest huge social resources and medical costs. Inhibition of histone deacetylases (HDAC) serves as an acknowledgeable anti-cancer strategy. There are four non-selective HDAC inhibitors in the USA; however, these drugs have not been introduced into Taiwan.

Our Technology: MPT0G211exhibited highly (more than thousands-fold) HDAC6 selectivity tham other HDAC isoforms; it was much potent than ACY-1215 (dozens of times selectivity), the only one HDAC6 inhibitor which was undergoing clinical trial. *In vitro* and *in vivo* results demonstrated that MPT0G211 significantly inhibited cancer growth in various hematological and solid tumor models. Comparing with ACY-1215, MPT0G211 has more potent HDAC6 inhibition and selectivity; that is to say, there is a great opportunity to develop MPT0G211 as a first HDAC6 inhibitor for cancer therapy and obtain huge profits.

Strength: Four non-selective HDAC inhibitors include Vorinostat (SAHA, Zolinza®)、Romidepsin (FK228, Istodax®)、Belinostat (PXD-101, Beleodaq®)及 Panobinostat (LBH-589, Farydak®) have been approved by FDA for cutaneous T-cell lymphoma (CTCL)，peripheral T-cell lymphoma and multiple myeloma treatment. However, these drugs have been found several cardiovascular side effects. The target of HDAC6 are non-histone protein, and recent study indicates mice lacking HDAC6 survive well and develop normally; suggest pharmacological inhibition of this enzyme may not cause severe side effects. Our result found MPT0G211 treatment didn't inhibit hERG gene, demonstrated its cardiovascular effect could be low.

Competing Products: ACY-1215(Acetylon Pharmaceutical, Inc.) is the only HDAC6 inhibitor in phase II clinical trial which combination with proteasome inhibitors (e.g. bortezomib,carfizomib) or examethasone for multiple myeloma treatment.

Intellectual Properties:

(1) We have requested NRPB office to file US provisional patent in 2015; it still be reviewed.
(2) In addition to payment reports to the Ministry of Health and Welfare, we have not published our results.
(3)Our team members have developed MPT0E028 in phase I trial; we have accumulated considerable experiences.

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