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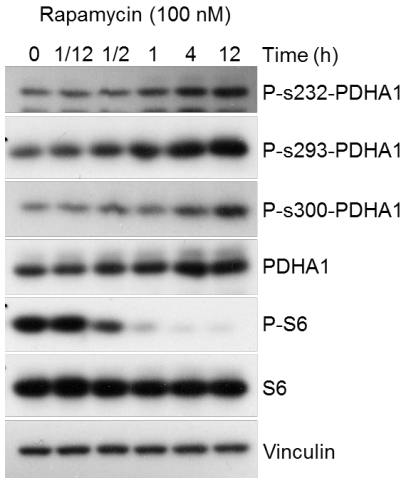
# Dichloroacetic acid and rapamycin synergistically inhibit tumor progression

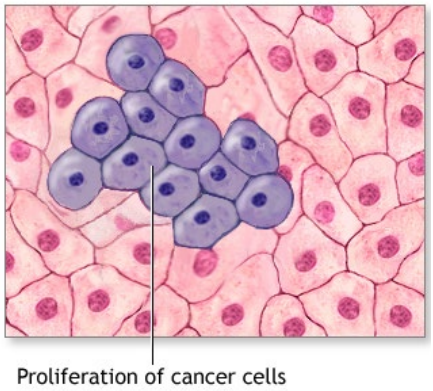
**Keywords: DCA, Rapamycin, PDHA1, mTOR**

# *Research Summary*

**This article mainly focused on the rapamycin, DCA, and summarized the key roles it played in the following aspects:**




- **Regulation of phosphorylation of PDHA1**
- **The mTOR signaling and pyruvate metabolism**
- **Cancer cell proliferation in vitro and vivo**



# *Innovation points*

- **Introduction of mTOR signaling to PDHA1 phosphorylation regulation for the first time.**

- **Emphasis of synergistical effects of rapamycin and Dichloroacetic acid in cancer cell proliferation *in vivo*.**

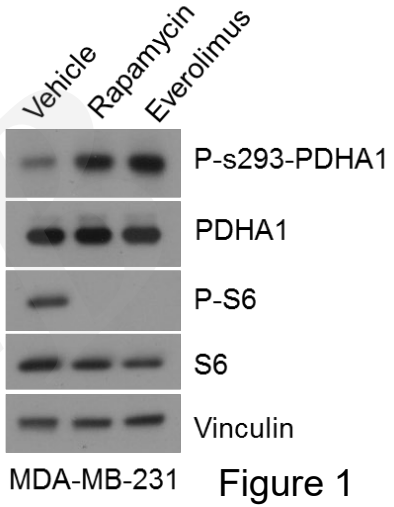
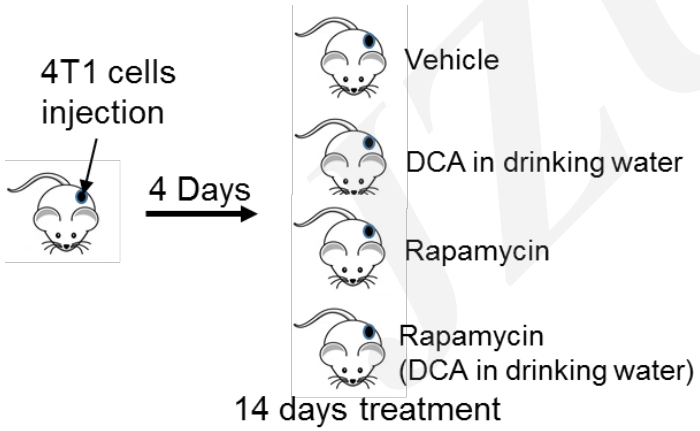



Figure 1



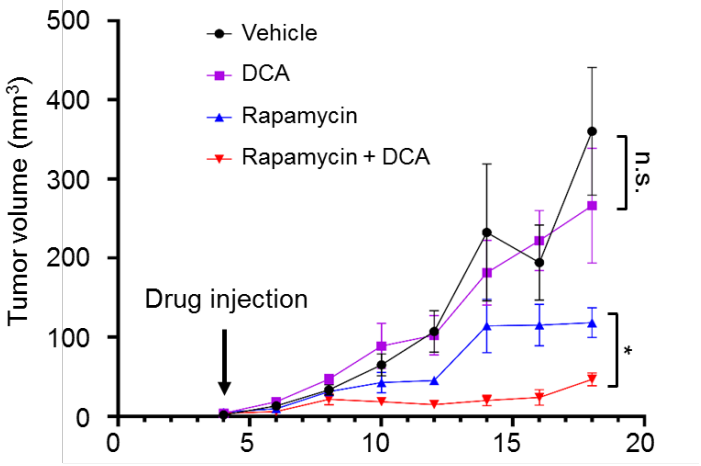




Figure 5

# *Innovation points*

**A series of comprehensive figures were generated to introduce the synergistically inhibitory effects between rapamycin and DCA in cancer cell proliferation**

**Figure 1 | Effects of Rpamycin in PDHA1 phosphorylation.**

**Figure 2 | The dependence of mTOR signaling in PDHA1 phosphorylation regulation.**

**Figure 3 | DCA decreases rapamycin-induced PDHA1 phosphorylation.**

**Figure 4 | The benefits of DCA in cancer cell treated with rapamycin.**

**Figure 5 | Synergistical effects of rapamycin and DCA in cancer cell growth inhibition *in vivo*.**