TOTAL-AMPKα1 IN PC-3 CELLS FOLLOWING EXPOSURE TO TRIPHENYL METHANOL DERIVATIVES (TMPS).

The mammalian AMP-activated protein kinase (AMPK) is a heterotrimer kinase, containing a catalytic subunit (α) and two regulatory subunits (β and γ). It has been hypothesized that when ADP or AMP are present at high levels, these nucleotides bind directly to the γ subunit, leading to a conformational change that allows phosphorylation of Thr172 at the α subunit. Phosphorylation of AMPK α activates the kinase which leads to downstream effects concerted to increase catabolic and suppress anabolic pathways to restore levels of cellular ATP and ultimately cell fate. We have recently synthesized novel flavonoids, namely, triphenylmethanol derivatives (TPMs), but the effectiveness of the TPMs on the activity of AMPK remains unclear. We hypothesized that the novel TPMs will inhibit cell proliferation through activation of AMPK isoforms in cells. The effects of TPMs, on total-AMPKα1 in prostate, PC-3, cells were investigated. Cells were exposed to TPMs for either 12 or 24 hr. at the respective doses of 0, 25, 50, 100 and 200 μM. Following the incubation, the AMPKα1 total protein in cultured cells were analyzed by the in-cell ELISA (ICE) assay kit (Cat. #: ab151280, Fisher Scientific, GA). The results indicate that cells exposed to the respective doses of TPMs increased total-AMPKα1 in a dose-dependent manner. The effects of the increases for the total-AMPKα1 in cells was greater for the 24 compared to the 12-hr. incubation. Further studies are currently going on to elucidate the specificities of the said insults in increasing total-AMPKα1 activities and for the other respective isoforms.