Reviewer’s report

Title: Cardiac thromboxane A2 receptor activation does not directly induce cardiomyocyte hypertrophy but does cause cell death that is prevented with gentamicin and 2-APB.

Version: 3
Date: 14 October 2014

Reviewer: Mario Chiong

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Touchberry et al. described that the TXA2 receptor agonist U46619, did not induced cardiac hypertrophy in HL-1 cells and AVCMs, as determined by cell size, protein synthesis and expression of atrial natriuretic peptide, #-myosin heavy chain, and skeletal muscle actin. However, U46619 induced and increase in cardiomyocyte death (trypan blue, MTT, TUNEL). However, there are some major concerns at this stage as follows:

a) Authors described the TXA2 receptor mRNA in AVCMs, as well as the increase of calcium upon U46619 treatment. Because HL-1 cells were also used in this work, the presence of TXA2 receptor in these cells should be also evaluated. Control on U46619-induced calcium increase using TXA2 receptor antagonist is also desirable.

b) Hypertrophic genes expressions were only evaluated in AVCMs. Induce U46619 the expression of atrial natriuretic peptide, #-myosin heavy chain, and skeletal muscle actin in HL-1 cells?

c) Is cell death (MTT and trypan blue assay in HL-1 and cell shape in AVCMs) prevented by SQ29548, 2-APB and gentamicin?

d) TUNEL assay is cannot clearly distinguish between apoptosis or necrosis. Did authors perform other assays such as LDH release, cytochrome C relocalization or caspase-3 activation?

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests.