Resveratrol suppresses breast cancer proliferation through inhibition of STAT3 activation and M2-macrophage polarization

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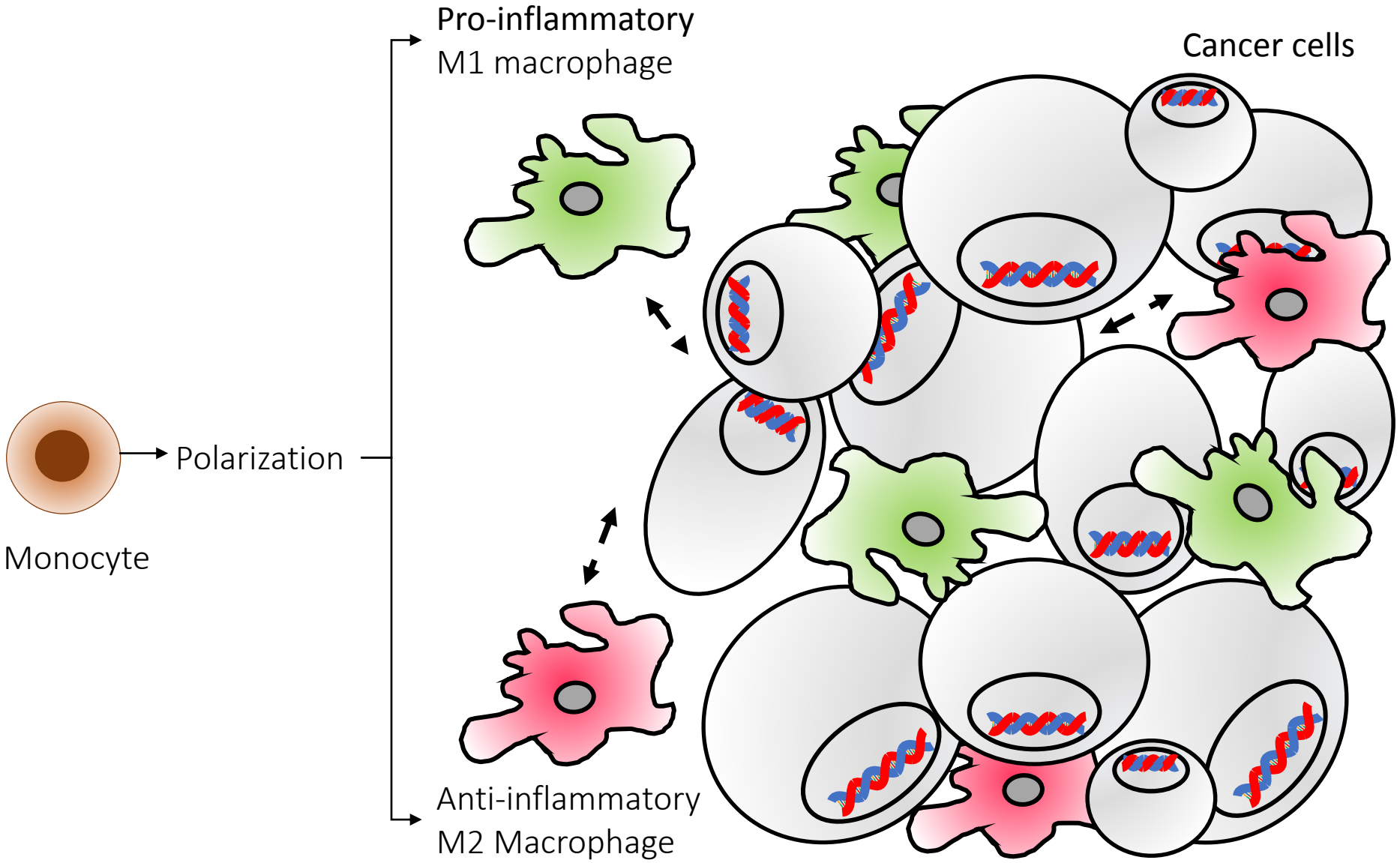
Tumor-associated macrophages (TAM)

- Tumor-associated macrophages (TAM) are the most abundant leukocyte population in the tumor microenvironment

- TAMs play critical role in breast cancer progression
  (William *et al*, 2016; Obedi et al, 2013)

Tumor-associated macrophages (TAM)



Resveratrol

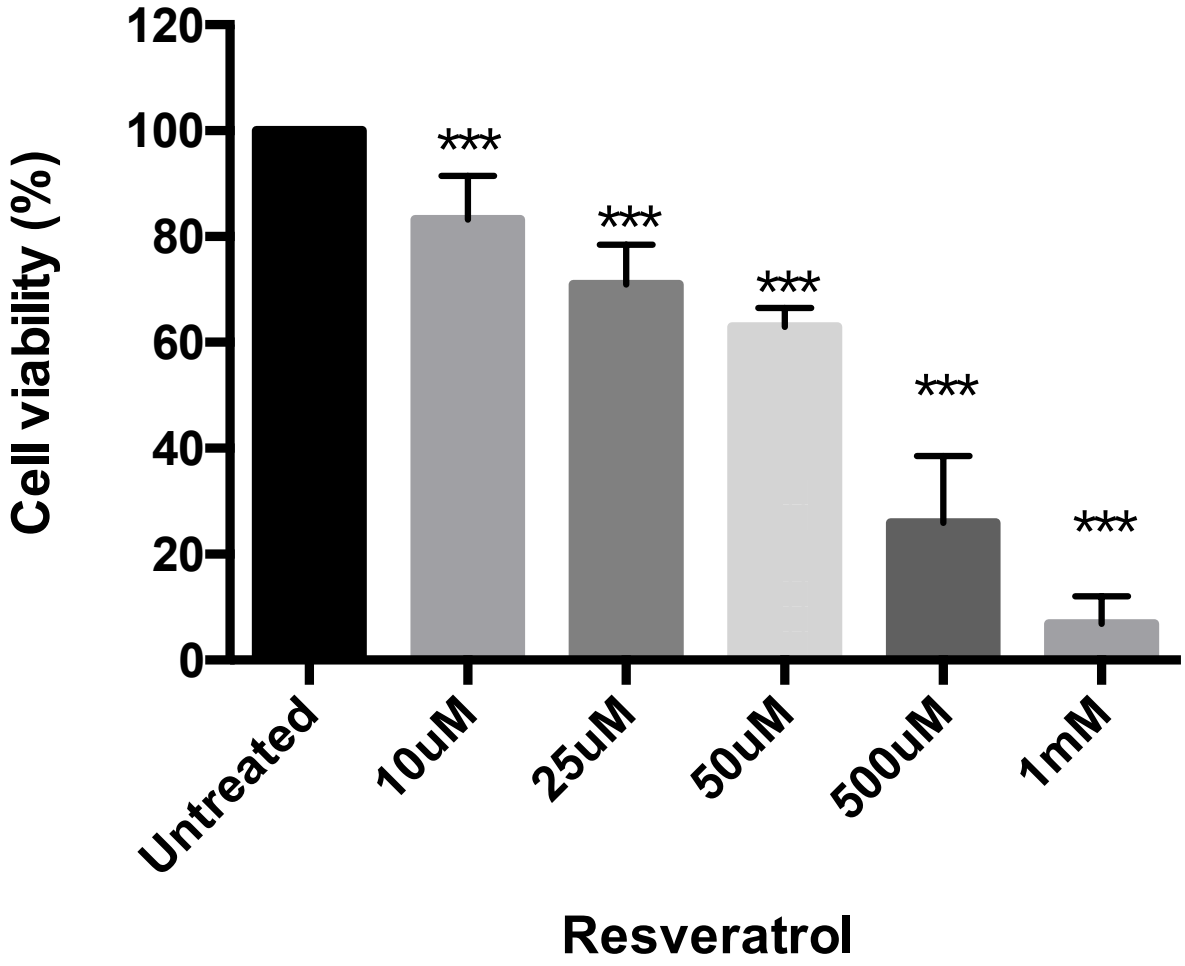
- A naturally occurring polyphenol
- Well known anti-cancer effects *in vitro* and *in vivo* in breast, liver, lung, ovarian, and skin cancers (Carter *et al*, 2014)
  - Promote apoptosis and regulate the cell cycle

Aims

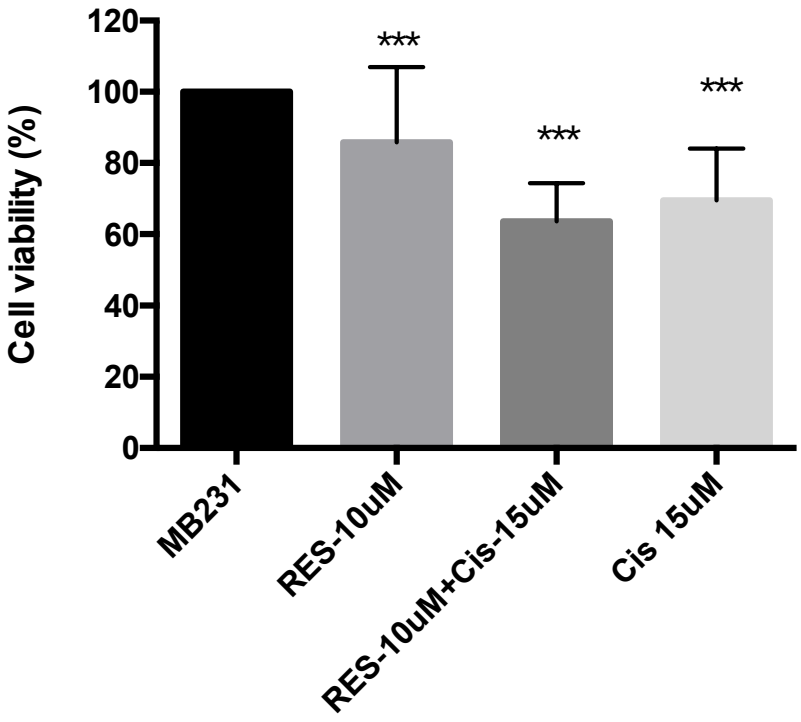
- To delineate resveratrol-mediated pathway in breast cancer tumorigenesis

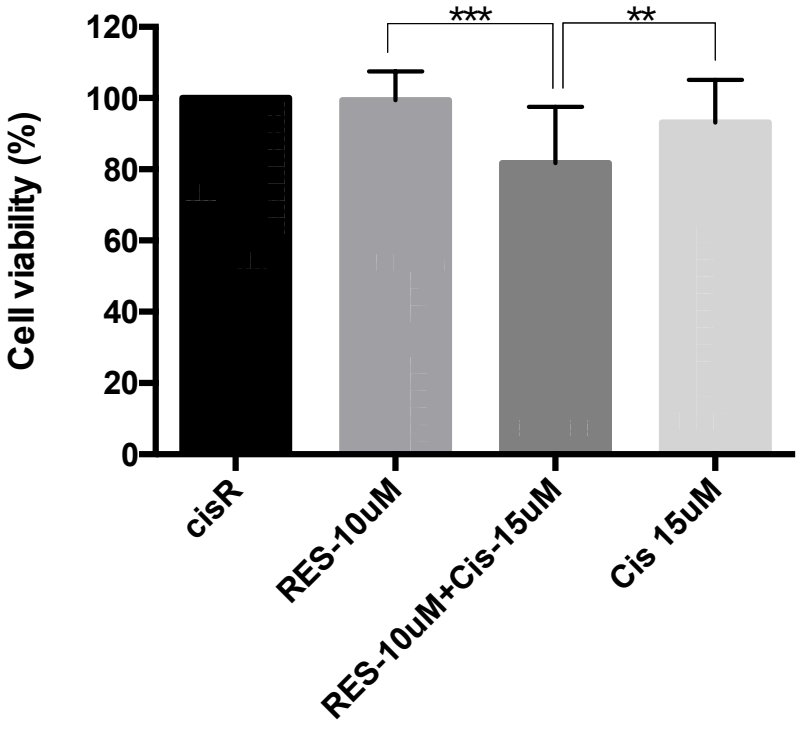
- To investigate the effect of resveratrol (RES) on tumor-associated macrophages (TAM) polarization

Resveratrol suppressed cell proliferation

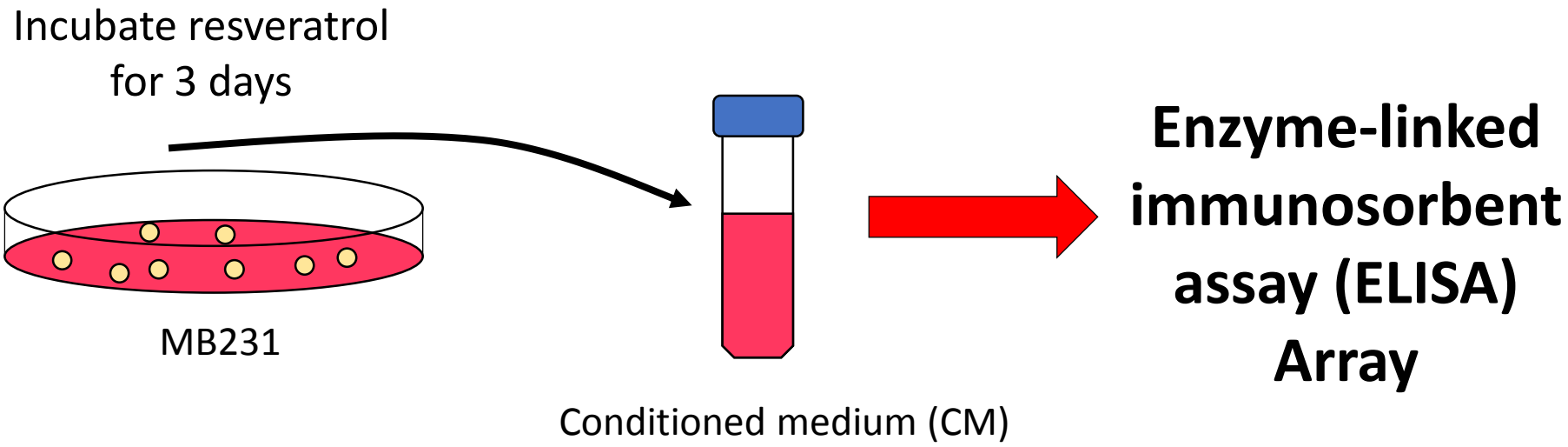


Resveratrol enhanced chemosensitivity in cisplatin resistance cells

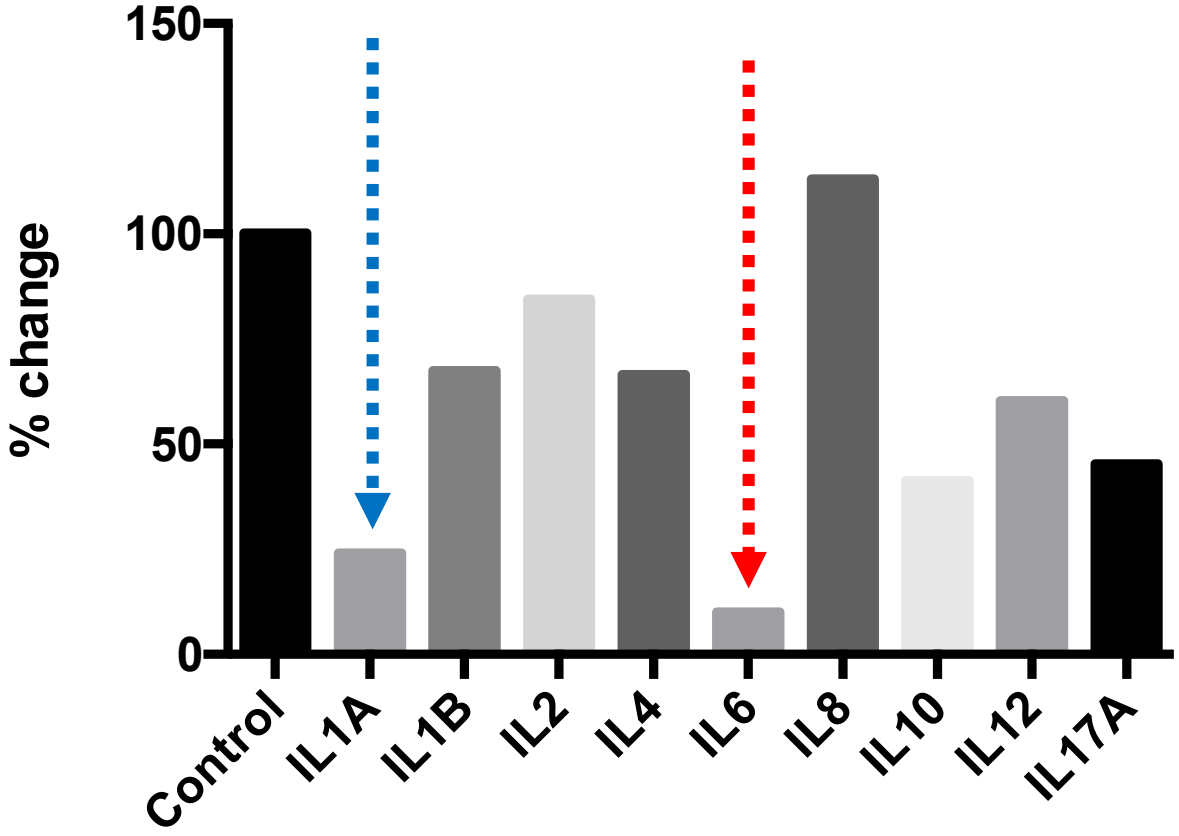




Cytokine profile after treatment of resveratrol



IL1A and IL6 were downregulated after treatment of resveratrol



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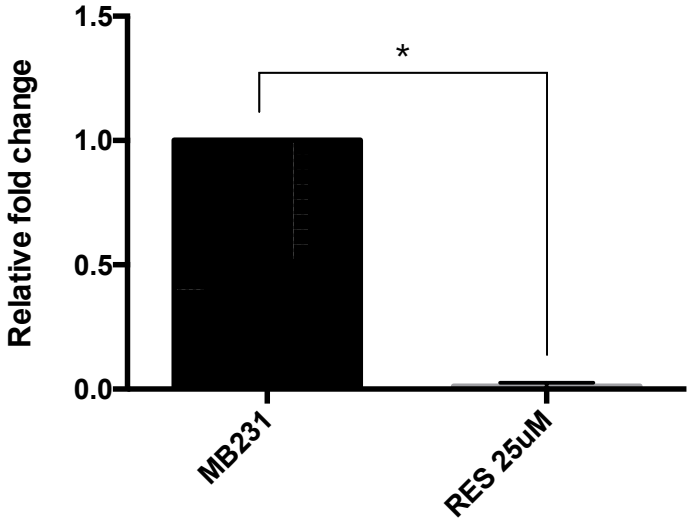
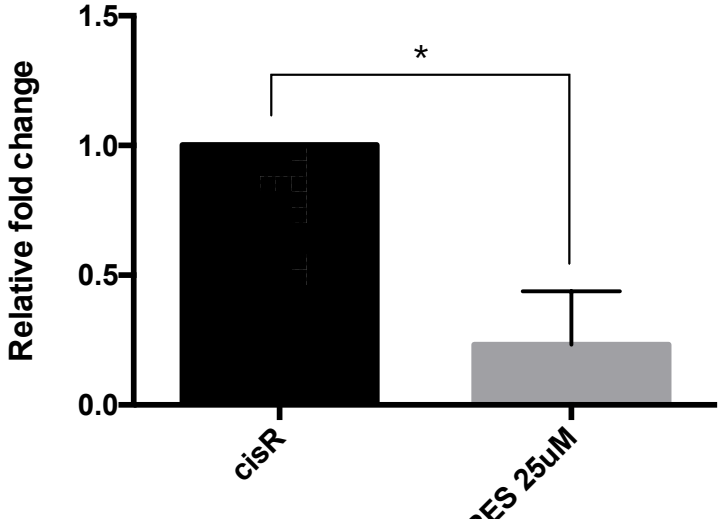
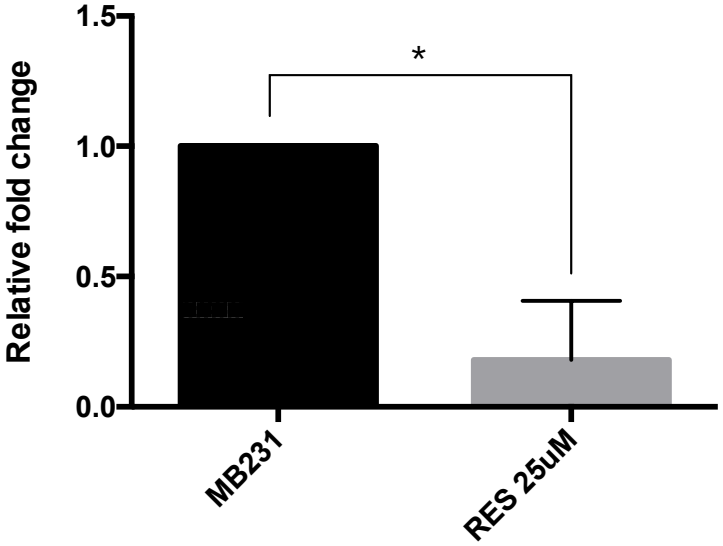
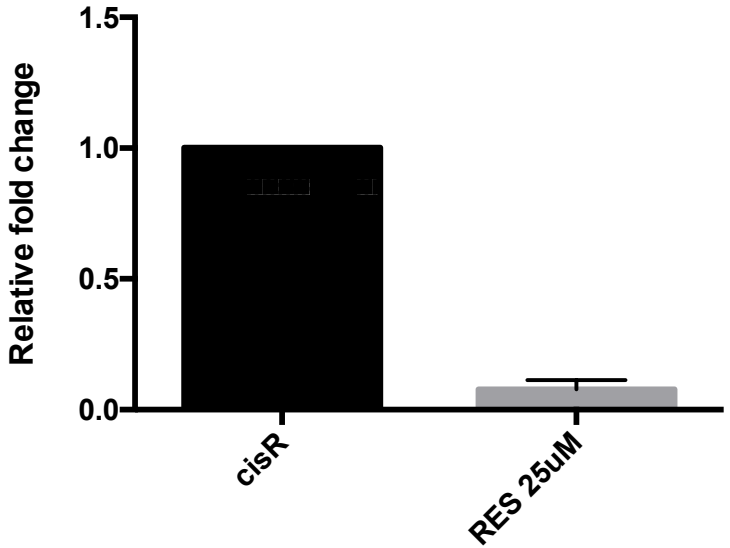
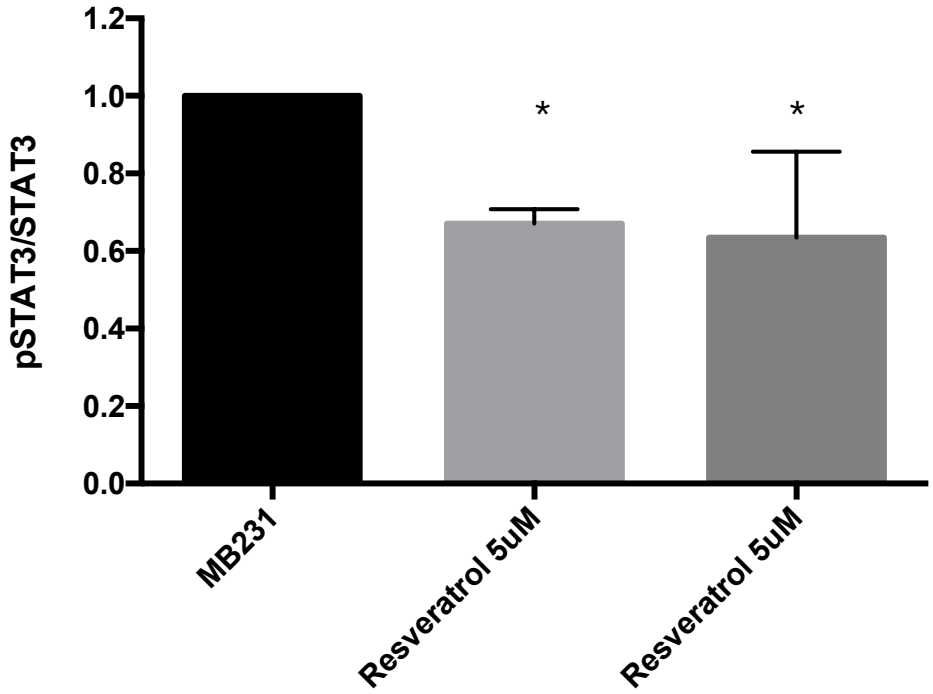


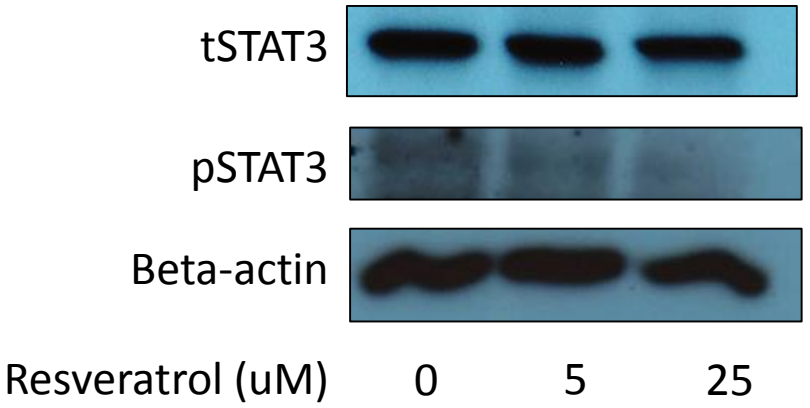




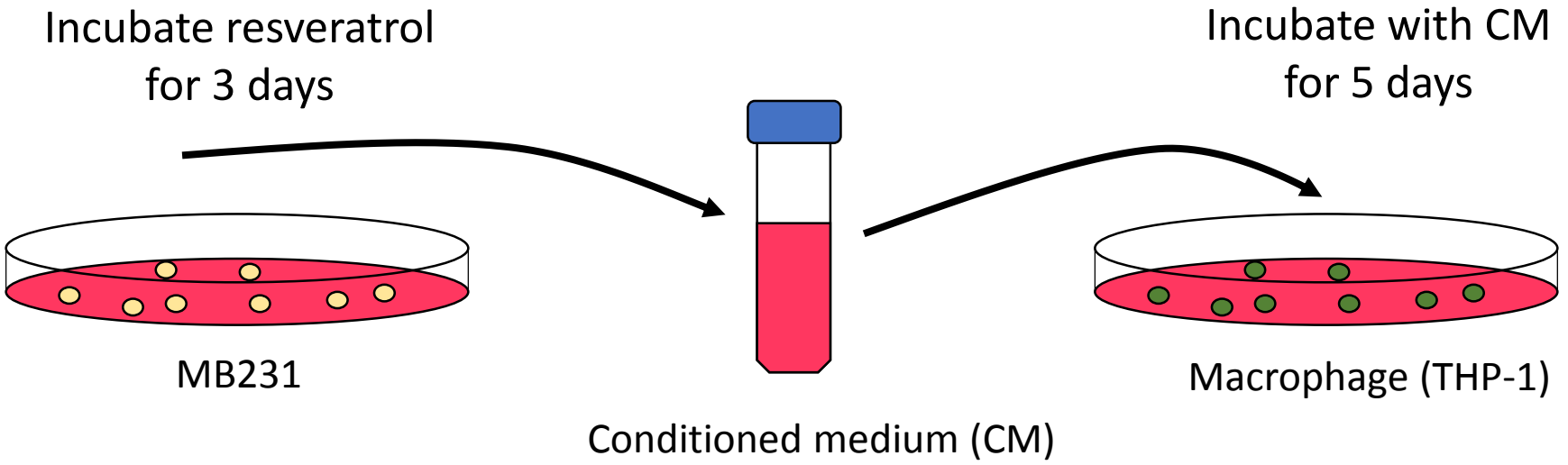


Resveratrol inhibited *STAT3* activation by IL1A and IL6 downregulation

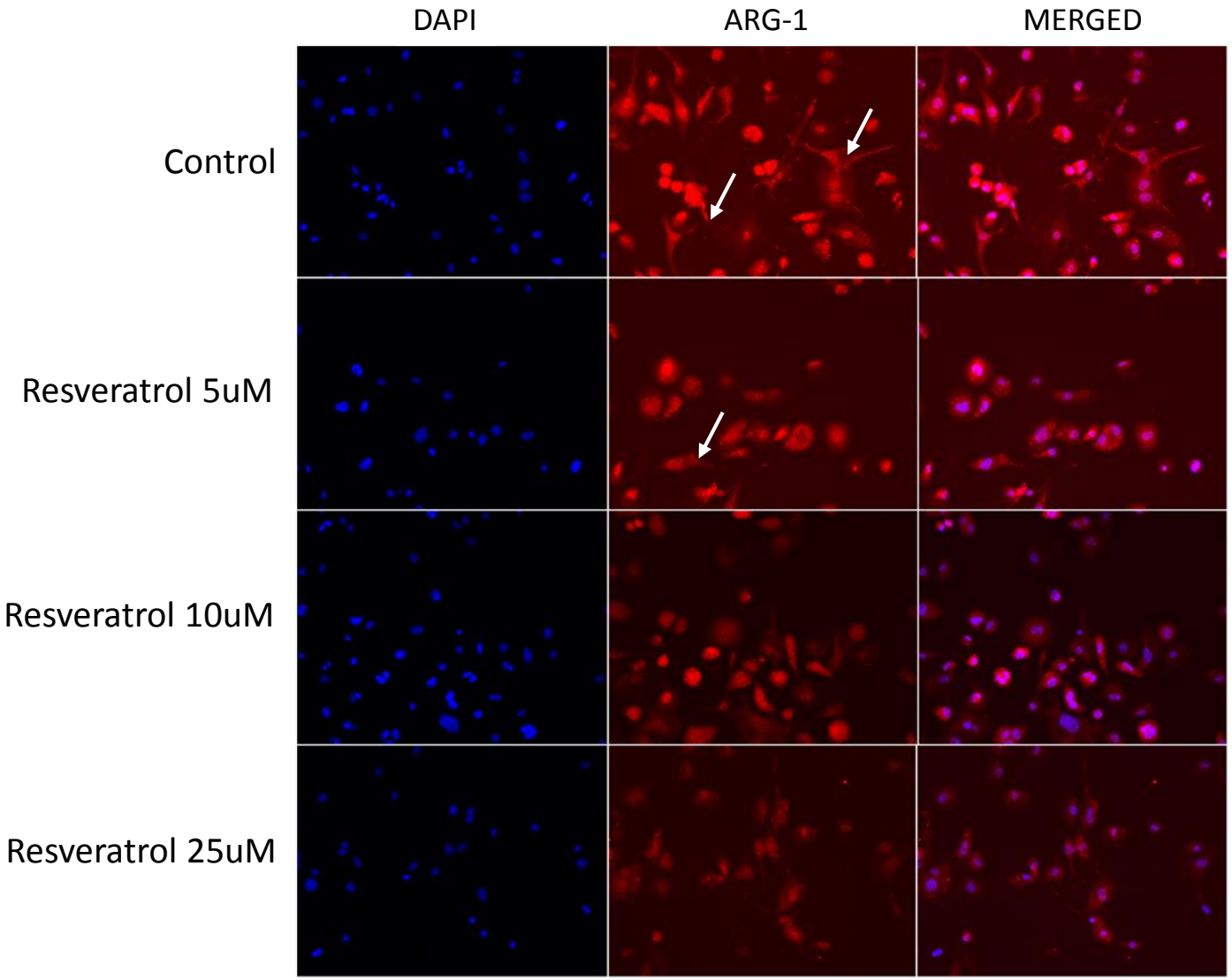




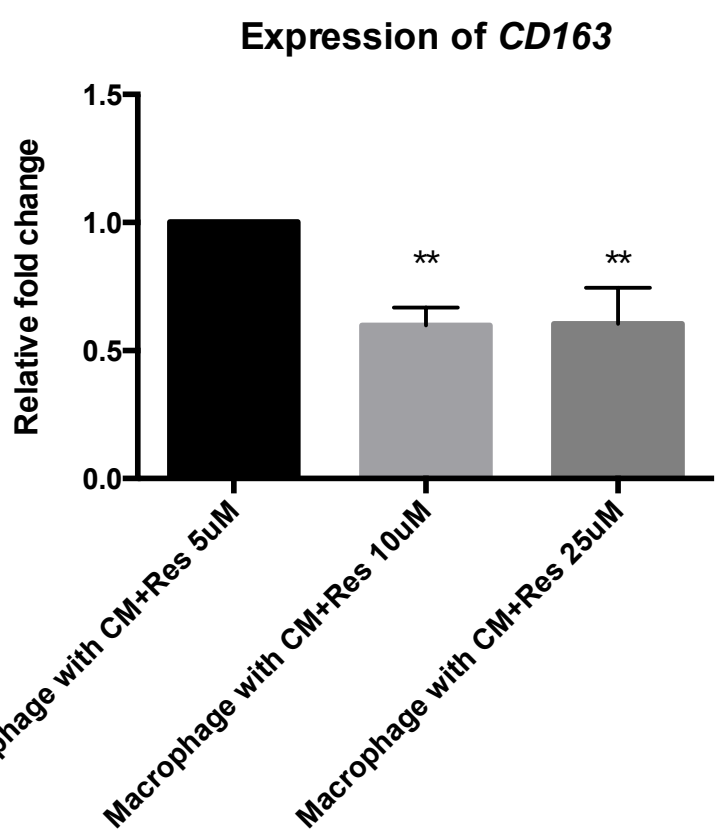
Role of cytokines in macrophage polarization

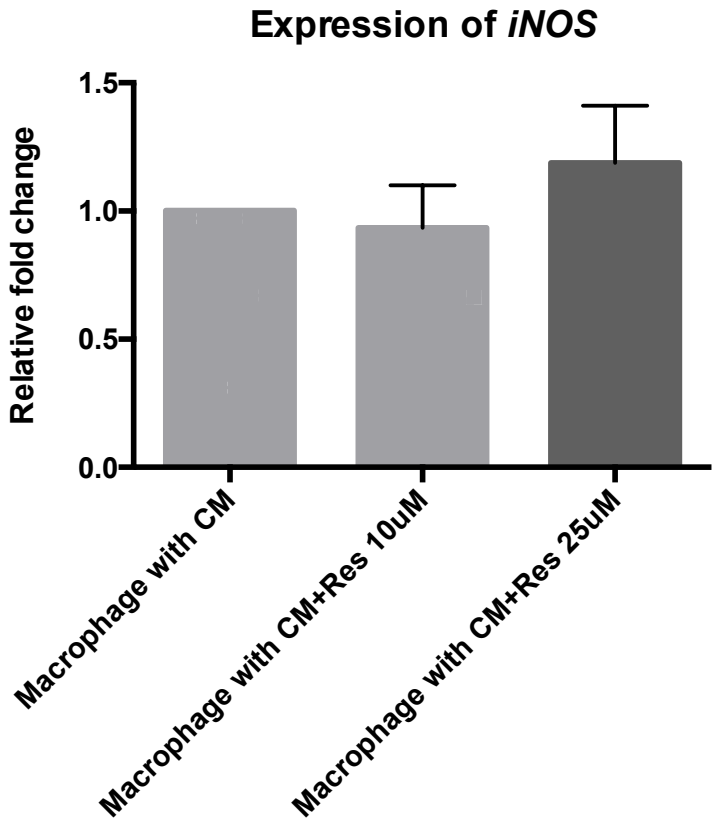


Resveratrol inhibited M2 macrophage polarization

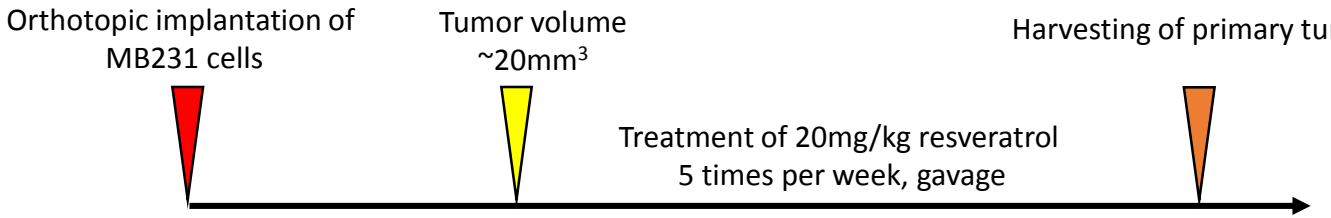


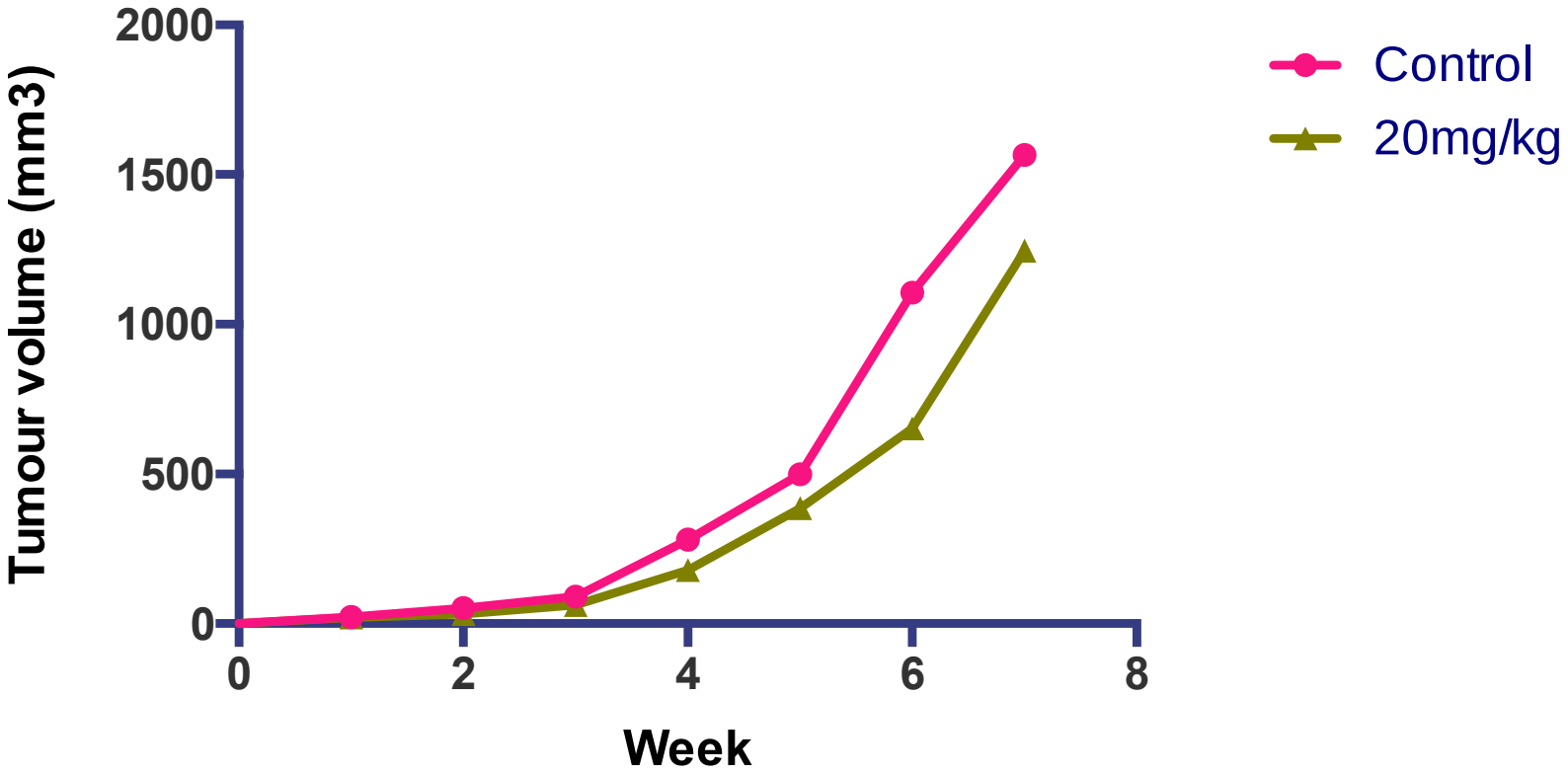
Resveratrol reduced M2 marker expression



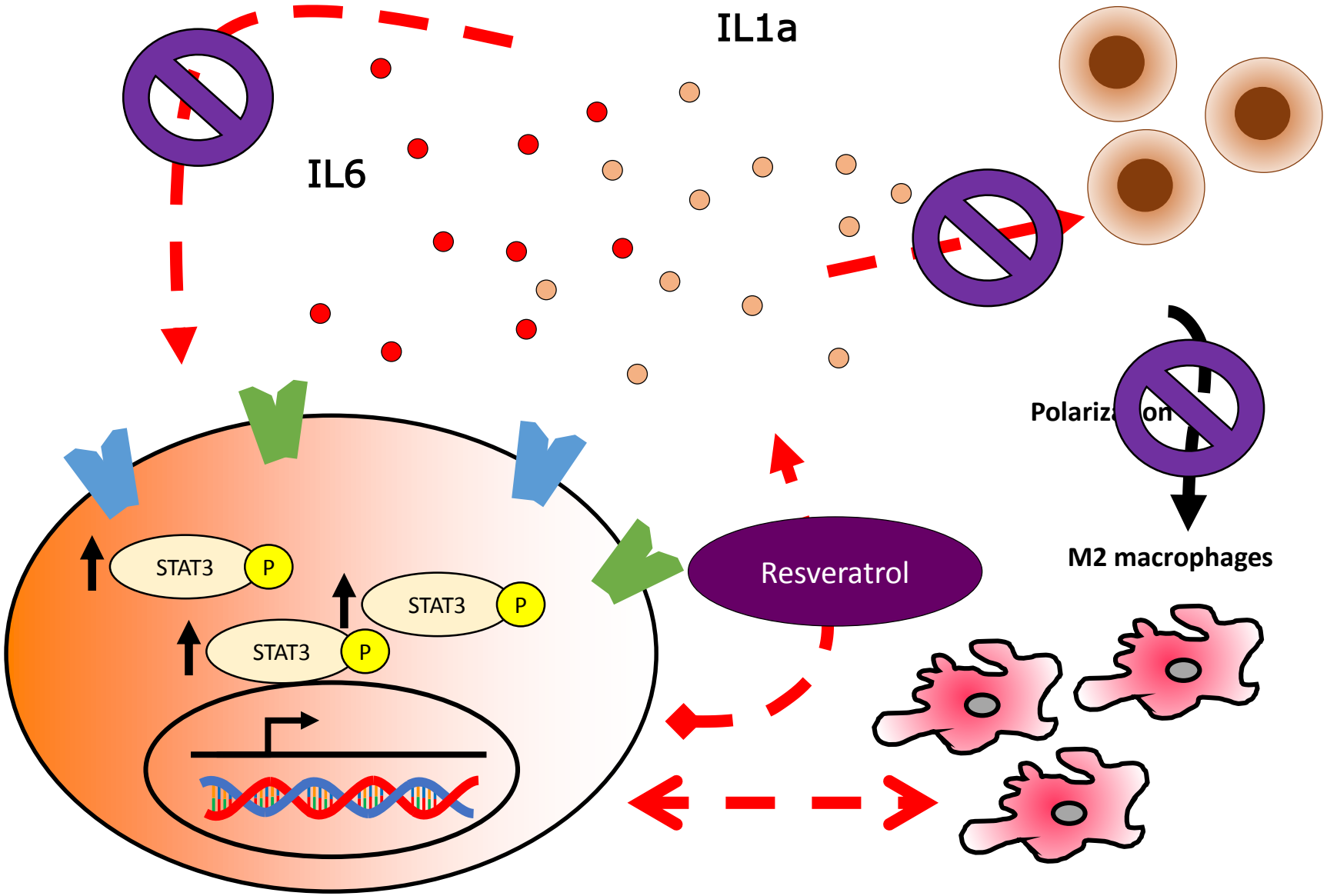


Resveratrol inhibited breast tumor growth *in vivo*





Resveratrol-mediated regulatory pathway



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