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## Antitumoral effect of resveratrol and its possible modulation through adenosinergic system on different tumoral cell lines

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Growing evidence indicates that adenosine signaling is an interesting target in cancer therapy due to its involvement in various stages of tumorigenesis, such as proliferation, angiogenesis and metastasis. Extracellular adenosine is overproduced in the tumor microenvironment by two ectonucleotidases (CD39 and CD73) and exerts a potent immunosuppressive effect through activation of adenosine receptors (A1, A2A, A2B and A3). Our current efforts are focused on resveratrol (RSV) in cancer prevention. RSV is a phytoalexin present in grapes, peanuts and red wine, with promising effects in inhibiting cancer progression in several tumoral models. However, molecular mechanisms behind these effects remain unclear. Recently, our group has described that RSV acts as a non-selective adenosine receptor agonist in rat C6 glioma cells. The aim of the present work was to study the antitumoral effect of RSV and the possible mechanism involving adenosine receptors in two different human cell lines: HeLa epithelioma cervix cells and SH-SY5Y neuroblastoma cells. To this end, cell viability by XTT method, adenosine receptors quantification by Western-blotting, gene expression by real time PCR and 5'-Nucleotidase activity were assayed. Results herein showed a significant decrease in HeLa and SH-SY5Y cell viability in a time- and concentration-dependent manner after RSV treatment. Accordingly, there was a reduction in the number of treated cells. In addition, RSV caused an increase in A1 and A2A gene expression and a decrease in A2B protein level in HeLa cells. However, these parameters remain unaltered in SH-SY5Y cells. Furthermore, 5'-Nucleotidase (CD73) activity was significantly reduced in plasma membrane in both cell lines. As RSV is a non-selective adenosine receptors agonist, these results suggest the involvement of adenosine receptor mediated signaling in RSV antitumoral effects.

**Keywords:** resveratrol, adenosine receptors, 5'-Nucleotidase, cancer

### Biography:

Miss Sonia Muñoz López is currently a PhD student and recipient of Spanish Association Against Cancer fellowship at the University of Castilla-La Mancha (UCLM) in Spain. She has received her degree in Biology in 2017 and her Master of Biomedicine in 2018 from University of Alicante (UA). Her research interests lie in the discovery of mechanisms of action of resveratrol, a natural polyphenol present in the diet, using different tumoral cell lines.