

# Neurology and Neuroscience

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## Effects of sugammadex with rocuronium or vecuronium in neurons in primary culture


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Sugammadex (SUG) rapidly reverses steroidal NMB agents after anaesthesia. Rocuronium (ROC) and Vecuronium (VEC) are the most currently used steroidal non-depolarizing neuromuscular blocking (MNB) agents. The aim of our study was to evaluate the SUG effects and also in combination with ROC or VEC. Using MTT, CASP-3 activity and Western-blot we determined the toxicity of SUG, ROC or VEC in neurons in primary culture. Apoptosis/necrosis was detected after SUG addition with increase in cytochrome C (CytC), apoptosis-inducing factor (AIF), Smac/Diablo and Caspase 3 (CASP-3) protein expression. ROC and VEC prevent these SUG effects in neurons in primary culture. SUG encapsulates NMB drugs and the protection of ROC or VEC could explain it. Control of SUG doses should be necessary to prevent free SUG in plasma, obviously when BBB is damaged, such as Alzheimer's disease or in development brain. A balance between SUG, ROC or VEC should prevent risk of cell damage inside the brain.

### Speaker Biography

Juan Campos-Campos finished his studies in Physiotherapy in 2010 in the Faculty of Physiotherapy in the University of Valencia. His Master was in the Department of Anatomy, in the School of Medicine (2013). He Starts his PhD in 2014 in the Department of Physiology, University of Valencia, Spain, with Doctor Soraya L. Valles. The title of the PhD will be: "Effect of Sugammadex and Rocuronium and Vecuronium in neural cells in primary cultures". Also he is studding Medicine (in the 3 year). He will finished his PhD in the end of 2018.

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