

V GRAFOB

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V Reunión del Grupo Argentino de Fotobiología



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hs**

INCREASING SINGLET OXYGEN PRODUCTION VIA PLASMONIC NANOPARTICLES DESIGN.

ABSTRACT: As one of the most versatile reactive oxygen species and a well-known cytotoxic agent, singlet oxygen, the electronically excited form of the dioxygen molecule, is at the forefront of a vast window of applications. In a medical context, production of singlet oxygen has been widely used in photodynamic therapy to kill cancerous tumors and microbial pathogens. Some of the remaining challenges for the use of photodynamic therapy in clinical applications are the poor specificity of photosensitizers towards the desired targets and the lack of strategy to maximize singlet oxygen production. Nanotechnology is without a doubt an exploding field of research, which is finding actual applications in our everyday lives. Could nanotechnology have also the potential to address the challenges faced by photodynamic therapy? Through a journey at the nanoscale, we will take a closer look at how plasmonic nanoparticles can be used advantageously to amplify singlet oxygen production in order to solve some of society grand challenges, being cancer or antimicrobial resistance..