

**POS-41**

**Cationic Fullerenes as Photosensitizers for Photodynamic Therapy**

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Photodynamic therapy (PDT) is becoming an established treatment option for many diseases. It combines a photosensitizing drug (photosensitizer) with light to produce reactive oxygen species from ambient oxygen. These oxidizing species are responsible for killing disease cells. Conventional photosensitizers (PS) are based on the highly-conjugated tetrapyrrole nucleus. Here, we report a new type of PS based on fullerene-C<sub>60</sub>, a recently discovered allotrope of carbon that has been modified to be soluble in aqueous media. The fullerene PS has been shown to have broad spectrum phototoxicity against gram negative and gram positive bacteria as well as a fungus. Initial *in vivo* data is presented along with early data for PDT against cancer cells.