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Encapsulation of Protoporphyrin IX in PGLA for Biological Applications BRIAN BUI, UT Arlington, NANOBIO-PHYSICS GROUP TEAM — In biological studies, Protoporphyrin IX has been utilized in researching with photodynamic therapy. With different situations that arise, it is beneficial to have products tailored to the given investigation. Here we propose encapsulating Protoporphyrin IX into poly(lactic-co-glycolic acid) (PLGA) with different parameters in hopes of obtaining products with necessary properties, including photoluminescent intensity, size and loading levels. We hypothesize the intensity of Protoporphyrin IX can be tuned, and this study will help to find the conditions for intensity change. We use chloroform and PVA solutions in the emulsion extraction/evaporation. The extraction and evaporation phases are different such that we can get particles sooner or later, respectively, which can lead to differences in loading levels. We vary diverse parameters, including volumes of the organic solvent, the aqueous solution, the drug volume (consisting of Protoporphryin IX in a solvent). The products PLGA-Protoporphyrin IX (Pppix) were obtained, characterized and optical properties were observed.

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