**Preparation of vegetable oils-based tissue adhesives for wound closure**

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**Statement of Problem:** Tissue adhesives provide many advantages for reconnection of the injured tissues compared to traditional invasive surgical closure techniques like sutures and staples.

**Research Purpose:** This work aimed to develop UV-curable non-isocyanate polyurethane tissue adhesives composed of vegetable oils functionalized through click chemistry.

**Research Method:** Soybean-oil was selected as the starting material. By performing mild synthetic steps methacrylated quaternary ammonium version of this material linked through urethane bonds (MAQMSO) was prepared. Mixture of MAQMSO, limonene as reactive diluent, TPO as UV-initiator, and PETMP a multifunctional thiol crosslinker were put into thiol-ene photopolymerization condition and applied as tissue adhesive after injection and irradiation by UV light (365 nm).

**Results and Conclusion:** The prepared tissue adhesives with the pleasant mild smell of lemon peel represents high gel content, good adhesion strength and surface energy, proper biocompatibility towards fibroblast cells, homogeneous distribution of quaternary ammonium groups in the structure, and glass transition temperature lower than the body temperature.

**Keywords:** Tissue adhesive, Soybean oil, Limonene, click chemistry.