

Title:	Tissue-mimicking gel phantoms for thermal therapy studies
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Abstract:	<p>Tissue-mimicking phantoms that are currently available for routine biomedical applications may not be suitable for high-temperature experiments or calibration of thermal modalities. Therefore, design and fabrication of customized thermal phantoms with tailored properties are necessary for thermal therapy studies. A multitude of thermal phantoms have been developed in liquid, solid, and gel forms to simulate biological tissues in thermal therapy experiments. This article is an attempt to outline the various materials and techniques used to prepare thermal phantoms in the gel state. The relevant thermal, electrical, acoustic, and optical properties of these phantoms are presented in detail and the benefits and shortcomings of each type are discussed. This review could assist the researchers in the selection of appropriate phantom recipes for their in vitro study of thermal modalities and highlight the limitations of current phantom recipes that remain to be addressed in</p>

	further studies.
Keyword:	thermal gels; hyperthermia; thermal ablation; tissue equivalency; thermal stability; intensity-focused-ultrasound; biological tissues; dielectric-properties; equivalent phantom; carrageenan gel; agar phantom; radiofrequency ablation; laser photocoagulation; polyacrylamide-gel; doppler ultrasound
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