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**The effects of insoluble dietary fiber on myofibrillar protein gelation:
microstructure and molecular conformations**

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Abstract

The effects of insoluble dietary fiber (IDF) on heat-induced gelation properties, such as microstructural changes and the molecular conformation of myofibrillar proteins (MP), were analyzed by image analyses and Raman spectroscopy. Scanning electron microscopy revealed that pure MP gelation contained a loose and dispersed network with interconnected water channels. With IDF addition, the lacunarity and the particle size of water pores both significantly decreased ($P < 0.05$) and fractal dimension significantly increased ($P < 0.05$), which indicated the formation of a homogenous and compact three-dimensional network. Through Raman spectra, IDF addition resulted in modification of amide I and III regions, by a significant decrease in α -helix content, accompanied by an increase

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