Degradation analysis of Poly-L-DL-lactic Acid

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**Palavra chave:** PLDLA, PLDLLA, degradation PLDLLA

**Resumo:**
This study evaluated the in vitro degradation of pellet, powder and plates of poly-L-DL-lactic acid (PLDLLA) after two processing methods. Part of the material was reduced to powder by cryogenic milling and part of it molded injected in plate form. The crystallinity was evaluated by DSC, FTIR, X-Ray Diffraction and Gel Permeation Chromatography before and after immersion in simulated body fluid for 30, 60, and 90 days. The glass transition temperature (Tg) of the pellets and the powder were 61.50°C, 660°C. The Tg’s of the plates ranged from 59.55°C to 63.06°C. Their endothermic peaks were observed at 125°C and 120°C, which was not identified to the plate’s samples. The FTIR spectrum showed bands of amorphous and crystalline content. The XRD results showed a peak related to the crystalline content, and a wide reflection related to the amorphous content. The milling process increased the crystallinity and the molding injection decreased it.