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Kinetic Studies With Crude Tomato Lipoxygenase

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Abstract: Crude tomato lipoxygenase (LOX) from ripe Florida47 tomatoes was used in this study. Extracted crude LOX was assayed spectrophotometrically. The effects of different buffers and pHs, substrate preparations, temperature and tissue location on LOX activity were evaluated. The enzyme was most active with MES buffer at a pH of 6.0 and a temperature of 25°C. The best substrate was the first preparation with linoleic acid/Tween 20 at a ratio of 1:1.5. The kinetic parameters determined under the best conditions were a Km of 4.198 mM and a Vmax of 0.84 mM/min. The enzyme was heat labile, and most activity was located in the fruit pericarp tissue. These results may help in employing crude tomato LOX as a biotechnological source.

Key Words: tomato, lipoxygenase, crude, kinetics, substrate

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