

PROSTAGLANDINS IN HUMAN TISSUES : THEIR IMPLICATION IN CANCER,
HYPERCALCEMIA AND CELLULAR REGULATION

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Introduction

The prostaglandins form a family of natural twenty carbon oxygenated unsaturated fatty acids detected in or associated with most mammalian tissues. These compounds have been attributed with an ever increasing number of pharmacological and physiological activities. In addition to the primary prostaglandins, the recent discovery of more short-lived intermediates in the formation of prostaglandins, the prostaglandin endoperoxides, and other extremely biologically active substances, the thromboxanes, prostacyclin and the non-cyclized leukotrienes, all formed during the metabolism of prostaglandin precursors, has added a new dimension to prostaglandin research and already expanded the bewildering array of biological effects attributable to members of the prostaglandin family.

Biosynthesized in cell membranes, particularly microsomes, from simple fatty acids, the prostaglandins are perhaps the most short-lived, ubiquitous and biologically active substances found in mammalian tissues. The magnitude and multiplicity of prostaglandin effects are beyond the scope of this chapter (see reviews 1-4), however, to illustrate the biological diversity of their effects one may cite their implication in hormonal regulation, modulation of intracellular metabolism, muscle contraction, lipolysis, inflammation, immunity,