

Introduction to Special Issue

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Prolactin (PRL) is a hormone identified in all vertebrate classes, with many diverse biologic functions: reproductive, immunologic, growth, metabolic and behavior. The spectrum of target tissues for PRL includes, but is not limited to, mammary gland, ovary, pancreas, kidney, liver, bone, and brain. In most species, and especially in mammals, PRL has specialized roles requiring dynamic release that cycles in accordance with reproductive status, circadian rhythms, and seasonal changes. Rapid episodic release also occurs in response to suckling, mating, and stress. Hypersecretion of PRL is a common neuroendocrine pathology and has provided impetus as well as models for the study of the effects of chronic elevated PRL. By contrast, isolated PRL deficiency is very rare, although a few human cases have been discovered in the diagnosis of infertility in women. The recent production of mice bearing null mutations of PRL or the PRL receptor has provided the first experimental models for examining the development and physiology of mammals in the absence of PRL signaling. These models have generated renewed interest in the more elusive roles

of PRL in metabolism, bone formation/remodeling, and behavior.

This seemed a perfect time to invite leading experts in the field to contribute to a single volume focused on the latest basic and clinical research into the regulation of PRL production and secretion, and the established and more recently discovered actions of the hormone. It is impossible to assemble all of the leading authorities in the field, but we have been fortunate to receive contributions from most of the top experts. PRL may not perform an indispensable function for survival of the *individual*, but gestation and lactation, PRL's best known actions, lie at the core of the mammalian life cycle, placing PRL at the center of survival of the *species*. For this reason interest in the molecular, cellular, and integrative biology of PRL continues, and the availability of modern molecular technologies has opened the door to new insights into the potential physiologic roles played by this pluripotent hormone. We hope to have provided a representative view of the exciting advances occurring in the study of PRL biology.

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