INTRODUCTION

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The ob/ob gene was identified in 1994 by ***Zhang et al.*** by positional cloning ***(Zhang et al., 1994).*** The gene was found to encode a secreted 167 amino acid protein named leptin ***(Campfield et al., 1995).***

Leptin, the 16 KD protein produced by the obese gene, is expressed and secreted by adipocytes and is known to regulate body weight and adipose tissue mass through a feedback mechanism ***(Collins et al., 1996).*** It is postulated that as adipocytes increase in size with increase food intake, there is increased leptin binding to receptors in the hypothalamus that inhibits further food intake ***(Hamilton et al., 1996).***

The mRNA for the receptor for leptin has been localized to the hypothalamus, choroid plexus, lung and kidney ***(Tartaglia et al., 1995).***

Leptin levels in peripheral blood of humans appear to undergo a circardian pattern ***(Sinha et al., 1996).*** In relation to the 8 a.m fasting level, there is a decrease 20% during mid-day and a rise to about 120% during the nocturnal hours. This may serve to stimulate appetite during mid-day and suppress appetite during the sleeping hours ***(Considine et al., 1996).***

Several studies have shown a direct correlation between body fat mass and plasma leptin in humans ***(Maffei et al., 1995).***

Although degradation pathway of leptin have not been carefully investigated, several lines of indirect evidence suggest that renal

clearance is the major route for leptin metabolism. First, the molecular weight and the calculated plasma half-life for leptin are similar to those of other peptide hormones that are degraded by the proximal renal tubules ***(Mehls et al., 1992; Klein et al., 1996).***

Second, a study of the leptin receptor tissue distribution showed that the highest levels of expression of the receptor are seen in lung and kidney ***(Tartaglia et al., 1995).***