

## **Molecular mechanism of intracellular lipid metabolism in hamster sebocytes in vitro**

**Takashi Sato**

*Department of Biochemistry, Tokyo University of Pharmacy and Life Science, School of Pharmacy*

Sebaceous gland is one of important skin appendages and sebum exertion is considered to associate with maintaining normal cutaneous functions. Development of sebaceous glands is dependent on androgens in vivo and sebocytic differentiation sequentially occurs with accumulating abundant cytoplasmic lipids. In addition, the abnormal augmentation of lipogenesis causes the sebaceous gland disorder such as acne vulgaris. However, the regulation of lipid metabolism in sebaceous glands remains unclear. We have recently established the culture system of hamster sebocytes from the auricles, and investigated the regulation of lipid metabolism in the cultured hamster sebocytes. Insulin, interleukin 6 (IL-6) and prostaglandin  $F_{2\alpha}$  (PGF $_{2\alpha}$ ) were found to augment the accumulation of intracellular lipid droplets, whereas epidermal growth factor (EGF) suppressed in hamster sebocytes. The regulation of lipogenesis by these factors was due to the alteration of intracellular triglyceride (TG) level. On the other hand, perilipin, which is located exclusively at the surface of intracellular lipid, mainly TG, and may participate in the lipid metabolism in adipocytes, was found to be expressed on the surface of lipids accumulated in hamster sebocytes. Furthermore, the expression of perilipin was augmented by insulin and IL-6 along with the lipid formation. These results suggest that insulin, IL-6 and PGF $_{2\alpha}$  are endogenous modulators for lipogenesis in hamster sebocytes, and that perilipin may be involved in the formation of lipid droplets and the regulation of lipid metabolism in hamster sebocytes.