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Key Words Annexin, Phospholipase A2, Exocytosis, Insulin secretion

Research Area **A Role of Annexins and Phospholipase A2 in the Regulation of Insulin Secretion** Annexins are a superfamily of proteins that are expressed in the majority of mammalian cells as well as molds and plants. A notable characteristic of all the members is that they bind to phospholipids in a Ca²⁺-dependent manner. Various annexins play a regulatory role in the exocytosis of secretory vesicles in adrenal chromaffin cells, anterior pituitary cells, and pancreatic β -cells. In these cells, intracellular annexins play a role in the regulation of exocytosis of secretory vesicles. However, the regulatory mechanisms of intracellular annexin I on the secretory machinery have yet to be fully explained. The phospholipase A2 (PLA2, phosphatide 2-acylhydrolase, EC 3.1.1.4) is a superfamily of distinct enzymes that catalyze specifically the hydrolysis of the sn-2 ester bond of phospholipids to yield free fatty acids and lysophospholipids. PLA2 enzymes have been implicated to play a role in various cellular processes and responses such as phospholipid digestion and metabolism, membrane remodeling, host defense, differentiation, mitogenesis, exocytosis, and cytotoxicity. We currently investigate the regulatory mechanisms of annexins and phospholipase A2 on the insulin secretion in pancreatic islets and insulinoma cells to gain an insight into its mode of action.

Education

- 1989 PhD Dept. of Biology, Sungkyunkwan University
- 1984 MSc Dept. of Biology, Sungkyunkwan University
- 1981 BSc Dept. of Biology, Sungkyunkwan University

Experience

- 1993 - Professor, Dept. of Biological Science, Sungkyunkwan University

Position

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Selected Publication

- Bo-ram Kim, Seung-hoon Lee, Mi-sun Park, Seung-hee Seo, Young-min Park, Young-joo Kwon and Seung-bae Rho, MARCKSL1 exhibits anti-angiogenic effects through suppression of VEGFR-2-dependent Akt/PDK-1/mTOR phosphorylation. 2016, *Oncology Reports*, 35: 1041-1048.
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- Na-na Kang, Jong Hak Won and Young Min Park, Annexin I stimulates Insulin secretion through regulation of cytoskeleton and PKC activity. 2009, *Animal Cells and Systems*, 13:17-23.
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Others

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