

## Knock-downs of SNAP-25 or Synaptotagmin Delay Blastocoel Formation in Developing Mouse Embryo<sup>1</sup>

Joo Young Jung<sup>1</sup>, Byung Kyu Kim<sup>2</sup>, Ji Yoon Kang<sup>2</sup> and Sang Ho Lee<sup>1</sup>

<sup>1</sup>School of Life Sciences and Biotechnology, Korea University, Seoul 136-701, South Korea

<sup>2</sup>Intelligent Microsystem Research Center, KIST, Seoul 136-791, Korea

Soluble *N*-ethylmaleimide-sensitive factor attachment protein receptor (SNARE) proteins mediate the fusion of the intracellular membranes for the release of vesicular contents as well as intracellular vesicle trafficking. Little studies have demonstrated that SNAREs play roles in mammalian embryonic development. In this study, we examined whether SNAREs are required for the blastocoel formation in the mouse. After visualizing distributions of SNAP-25 and Syt in the cortex of blastomeres from 8-cell embryo, the SNAREs were also clearly found in some isolated 1/8 or 2/16 blastomeres with polarized distributions. Fertilized 1-cell embryos microinjected with antibodies or small-interfering RNAs (siRNA) to either SNAP-25 or Syt showed significantly reduced blastocyst formation. While no apparent retardation was found in the embryos microinjected with a vehicle alone or GFP siRNA injection. Taken these results together, we propose that SNAREs appear at 8-cell or morula abundantly, and may involve in the formation of blastocyst cavity through endocytosis and exocytosis of the outer-positioned blastomeres at morular stage of embryo.

Keywords: SNAP-25, Syt, Antibody, siRNA, Knock-down, Cavity formation, Mouse embryo.

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