Z306 **FITC labeled phalloidin, anti-actin-FITC and immunogold localization of nuclear actin in Urechis sperm and spermatids**

Ho-Jin Kim, Jin-Wook Jeong, Hyuk-Jae Kwon, Wan-Jong Kim, and Kil-Sang Shin
Department of Life Science, College of Natural Sciences, Soonchunhyang University

A bipartite acrosome of substantial gradient adheres to the nuclear envelope of sperm and spermatids in U. unicinctus. However, acrosomal process could not be observed in level of ultrastructure, even if the egg-sperm suspension are examined at a defined intervals of time period and sectioned through the median plane of the sperm attachment site to the egg. Since the acrosomal processes of tide animals are in common known as an elongation of actomere which is the polymerized form of G-actin monomer, for understanding the reason, unfertilized sperm are stained with FITC-phalloidin, anti-actin-FITC and labeled with anti-actin followed by anti-actin-immunogold(10nm) to mark the 1st Ab. The immunogold particles are incorporated mainly with sperm nuclear matrices. The FITC-Phalloidin stained intensively in the acrosome, but a moderate or weak fluorescence can be seen in the nucleus. The fluorescence of anti-actin FITC can be observed in the nucleus, but not in the acrosome. This results as well as the adherent contour of spermatozoon to the egg are in favour of the view that the acrosomal actin of unfertilized sperm is a polymerized form(F-actin) and the nuclear actin is composed of both F-, and G-actin. It appears in this work that the acrosomal F-actin of unfertilized sperm seemed as though to be a little consequence to form the actomere and acrosomal process. A tendency is often observed that the number of incorporated immunogold particles increases in sperm nucleus comparing with that of spermatid nucleus. This coincidence has been discussed and interpreted in concern of nuclear condensation during the spermiogenesis.