

Guest lecture

The ovarian follicle microenvironment and the artificial ovary



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11.00 AM in BMB seminar room

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Abstract:

Survival rates of many malignant diseases are steadily improving, but for patients of childbearing age, fertility restoration often becomes a vital concern after disease remission. In women, treatments such as chemo/radiotherapy can be very harmful to the ovaries, causing loss of both endocrine and reproductive functions. When gonadotoxic treatment cannot be delayed, ovarian tissue cryobanking is the only way of preserving fertility. However, this technique is not advisable for patients with certain types of cancer, since there is a risk of reintroducing malignant cells present in the cryopreserved tissue. For these patients, a safer alternative could be transplantation of isolated preantral follicles back to their natural environment. To encapsulate and protect isolated follicles, a transplantable artificial ovary needs to be created. The main goal of the artificial ovary is to mimic the natural organ and for this, it should be composed of a matrix that encapsulates and protects not only the isolated follicles, but also autologous ovarian cells and bioactive factors, which are necessary for follicle survival and development. In this lecture, we will describe how to create an artificial ovary based on the natural ovarian follicle microenvironment. Additionally, we will discuss the indications, advantages and the different approaches to develop this new technology.

Host: Associate professor Stephen J. Fey, Department of Biochemistry and Molecular Biology, SDU.