

Discovery of a molecule that initiates maturation of mammalian eggs can lead to more IVF pregnancies

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Women who have eggs that cannot mature will not become pregnant, and they cannot be helped by in vitro fertilization (IVF). Now researchers at the University of Gothenburg, Sweden, have identified a molecule called Cdk1 that has an important function for mammalian egg maturation. In the future this could lead to an increased rate of successful IVF.

Up to 15% of all women of reproductive age struggle to become pregnant. In vitro fertilization (IVF) can help these women become mothers. However, women who are infertile because their eggs do not mature properly cannot be helped medically, as immature eggs cannot be fertilized. In the future, such patients might be helped as a research group at the University of Gothenburg has found that the Cdk1 molecule has an important function in mammalian egg maturation. Their results have now been published in the journal [Human Molecular Genetics](#).

"This is the first functional evidence that Cdk1 is a key molecule in mammalian egg maturation. If the results can be translated into clinical settings, it could possibly improve the chances of successful [IVF treatment](#) for women who today are not becoming pregnant because their eggs do not mature" says Kui Liu, professor at the Department of Chemistry and [Molecular Biology](#), the University of Gothenburg, Sweden.

Kui Liu and his colleagues performed experiments on tissue-specific

[knockout mice](#). The results show that when the Cdk1 molecule was removed from eggs of mice, the egg maturation stopped. When the molecule was added again, maturation resumed.

Professor Liu is a professor in molecular biology at the Faculty of Science, University of Gothenburg, since February 2011. His research group specializes in studying the development of female [germ cells](#). In the last few years he has been working on making his results useful for humans.

"We are eager to start tests on [human eggs](#). Hopefully we can apply this in clinics within ten years" says Liu.

The article, titled Cdk1, but not Cdk2, is the sole Cdk that is essential and sufficient to drive resumption of meiosis in mouse oocytes, was published in the journal *Human Molecular Genetics* on 24 February 2012.

More information: Read the article:
hmg.oxfordjournals.org/cgi/reprint/dds061

Provided by University of Gothenburg

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