THE UNIVERSITY of EDINBURGH

# *News Release*

Issued Thursday 11 September 2014

**UNDER STRICT EMBARGO UNTIL 1900 BST THURSDAY 11 SEPTEMBER 2014**

## Cell study may shed light on causes of infertility and birth defects

A key discovery about how egg and sperm cells are formed could aid understanding of some infertility and birth defects.

Scientists studying cell division in reproductive cells have shown how part of the process – linked to these conditions – is co-ordinated.

Their study focuses on a key process that takes place as reproductive cells divide, and genes are separated as packages known as chromosomes. They discovered that a key molecule fuses together a pair of chromosomes until they are ready to separate and help form a new cell.

In this way the molecule, known as monopolin, prevents the premature separation of chromosomes.

The finding could aid understanding of what happens when eggs or sperm with the wrong number of chromosomes are made.

This can lead to infertility, miscarriages and birth defects such as Down syndrome.

An international team of scientists, led by the Universities of Edinburgh and Washington, used genetic manipulation and sophisticated laser microscopy techniques to study cell division. The study was carried out in yeast, a simple model organism.

Their study, published in *Science*, was supported by the Wellcome Trust and the US National Institutes of Health.

Dr Adele Marston of the University of Edinburgh's School of Biological Sciences, who jointly led the study, said: "Production of healthy egg and sperm cells is a precisely choreographed and elaborate process. Mistakes in this sequence can cause many problems, which are not well understood. Our findings help explain a key step in this sequence and may help our understanding of associated health conditions."

For more information please contact:
Catriona Kelly, Press and PR Office, 0131 651 4401; Catriona.Kelly@ed.ac.uk
Leila R. Gray, Media Relations, University of Washington, 1 206 685 0381; leilag@uw.edu