

# Fireflies and jellyfish help illuminate quest for cause of infertility

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Genes taken from fireflies and jellyfish are literally shedding light on possible causes of infertility and autoimmune diseases in humans.

Scientists are using the luminescent and florescent genes to illuminate [cells](#) that produce a [hormone](#) linked to conditions, which include [rheumatoid arthritis](#) and lupus.

The technique will help scientists track the production of the hormone prolactin, which is crucial in ensuring supplies of breast milk in nursing mothers but can be overproduced by some pituitary tumours, causing infertility.

Prolactin has been linked to more than 300 biological functions. It is believed to play a role in [autoimmune diseases](#), such as lupus and rheumatoid arthritis, as well as in the inflammation of cells and tissues.

Scientists from the Universities of Edinburgh, Manchester and Liverpool harnessed firefly and jellyfish genes, which enable these creatures to emit light, and used them to create a chemical reaction to light up cells expressing prolactin in rats.

The technique means that scientists can identify when and where prolactin is expressed to look at how the hormone works in real time.

Sabrina Semprini, whose study is published in the journal *Molecular Endocrinology*, said: "The lighting up of cells expressing this hormone

will help us to understand its role within the body and could help research looking for treatments for conditions in which prolactin is involved."

The research, funded by the Wellcome Trust, identified cells producing prolactin throughout the body. This included the pituitary gland, the thymus - an organ in the chest which helps protect against autoimmunity - the spleen and inflammatory cells in the abdominal cavity.

Source: University of Edinburgh

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