

Institute of Epigenetics and Stem Cells

Highlight/Publication:

Eid, A. et al. (2016) SUV4-20 activity in the pre-implantation mouse embryo controls timely replication. Genes and Development, doi: 10.1101/gad.288969.116

PSP Element:

G-506200-001

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Keywords:

Mouse embryo, suv4-20, pre-implantation development, heterochromatin, replication stress

Central statement of the highlight in one sentence:

Furthering the understanding of the molecular mechanisms involved in early embryonic development

Text of the highlight:

One of the key aims of the IES is to uncover the molecular mechanisms behind chromatin remodeling during **preimplantation development** in order to determine the mechanisms behind **cellular plasticity**. In November 2016, researchers at the IES published a study which addressed the importance of chromatin remodelling during pre-implantation development. By expressing Suv4-20 (a methyltransferase) when it is not normally present in the mouse embryo, they observed defects in pre-implantation development and the regulation of replication. Their study suggests that there could be a novel mechanism of replication regulation in early development compared to that in normal cells of the adult. In turn this could impact our understanding of **embryonic development and fertility**.

Taking account of the HMGU mission:

This work identifies an important mechanism during pre-implantation embryonic development which has an important impact on fertility and embryonic development, both significant in the field of human health.

The internal HMGU co-operation partners with whom the highlight was compiled, if appropriate:

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