

Stem cells: Quick to change

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Researchers have developed a quick and efficient approach to nuclear reprogramming in order to understand the mechanisms leading to induced Pluripotent Stem (iPS) cells. Using this assay, they have identified a protein that is crucial for the reprogramming process. The work is published online this week in *Nature*.

Inducing pluripotency yields promise for patient-specific stem cells in regenerative medicine, but current methods are slow and inefficient. Helen Blau and colleagues fused mouse embryonic stem cells and human fibroblasts to induce reprogramming in just one day and with hugely improved efficiency. They show that Activation-induced cytidine deaminase (AID) — a protein known for its role in generating antibody diversity — is required for initiation of nuclear reprogramming towards pluripotency in human somatic cells. They believe the AID protein modifies the DNA directly by removing certain chemical groups, and that this activity enables reprogramming. Future studies will reveal whether the expression of AID alone can speed up iPS cell generation.

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