

Scientists announce stem-cell discovery

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U.S. scientists say they've uncovered signatures near crucial developmental genes -- a critical step toward creating embryonic stem cells for medicine.

Harvard Medical School researchers say the unique molecular imprints discovered coupled to DNA in mouse embryonic stem cells help explain the cells' ability to form almost any body cell type.

The scientists say the imprints, or "signatures," appear near the master genes that control embryonic development and probably coordinate their in the early stages of cell differentiation. Not only do the findings help to unlock the basis for embryonic stem cells' seemingly unlimited potential but the researchers say they also suggest ways to understand why ordinary cells are so limited in their abilities to repair or replace damaged cells.

"This is an entirely new and unexpected discovery," said Brad Bernstein, lead author of the study, an assistant professor at Harvard and a researcher in the Chemical Biology program at the Broad Institute. "It has allowed us to glimpse the molecular strategies that cells use to maintain an almost infinite potential, which will have important applications to our understanding of normal biology and disease."

The discovery appears in the April 21 issue of the journal *Cell*.

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