* Cis & trans epigenetic signals :-

→ Trans epigenetic signal :-

DNA binding transactivator protein is transcribed from its cognate gene located on particular chromosome

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Expressed protein is freely diffusible between nuclear & cytoplasmic compartments.

- Excess transactivator reenter nucleus following cell division, binding to its own gene & activate transcription in both daughter cells

- This cycle reestablish positive feedback loop in effect prior to cell division, & thereby enforces stable expression of this transcriptional activator protein in both cells

→ Cis epigenetic signals :-

a gene located on particular chromosome carries a cis-epigenetic signal within regulatory region upstream of gene transcription unit

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In this epigenetic signal is associated with active gene transcription & subsequent gene product production

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During DNA replication, newly replicated chromatid serve as template that both elicits & templates introduction of same epigenetic signal or mark, on newly synthesized, unmarked chromatin.

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consequently, both daughter cells contain genie in a similarly cis-epigenetically marked state, which ensure expression in identical fashion in both cells