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# Sister chromatid differentiation/selective segregation mechanism supported for vertebrate body laterality development

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Based on sister chromatid differentiation first discovered in two yeasts, we proposed the Somatic Strand-specific Imprinting and selective sister chromatid Segregation (SSIS) model, to handle one or multiple chromosomes, as a mechanism for asymmetric cell division and that may be required for the vertebrates' visceral organs and human brain hemispheric laterality development. Essentially the same model was subsequently proposed in two other studies. Based strictly on genetic results, we suggested that selective chromatid segregation does occur in mouse cells. From a Drosophila study, a result of autosomal chromatids segregating only by the specific W, W :: C, C pattern was note. Curiously, by expressing fluorescent red- or green-colored transgene reporters from one or the other X chromosome, the entire brain hemisphere primarily developed one or the other color in mice. This result evidences that the left or the right mouse brain hemisphere develops from the progeny of a single cell, as first postulated in the SSIS model.

## Biography

Amar J S Klar obtained his PhD in 1975 from University of Wisconsin, Postdoc training at UC Berkeley. He was on the faculty at Cold Spring Harbor Lab from 1978-1988. There after he has been Chief of the Developmental Genetics Section at NCI Frederick. He has published over 100 papers on yeast genetics, genetics of human traits such as hand-use preference, psychoses, autism, breast cancer in women, and visceral organs laterality determination. His yeast work was the inspiration for the novel *The Marriage Plot.*

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