

## PIWI-piRNA dynamics in neurons

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### Abstract

The PIWI-interacting RNA (piRNA) regulates transposons expression in mammalian germ line and somatic cells. Mechanically, PIWI-piRNA pathways take a long stand in maintaining speciation by allowing reproduction and adaptation of population to new mobile elements but is being least explored in mammalian brain. Additionally, LINE 1 elements mainly present in neurons of the brain are known to be regulated by PIWI/piRNA and show potential role in synaptic plasticity and memory storage. This proclamation provides a clue that PIWI-piRNA plays an epigenetic role in neurogenesis and neuronal disorders. Here we discuss recent advances in PIWI-piRNA mechanism and their epigenetic regulation during early stages of brain development. Transposons, so called molecular parasites, make up a large percent of genome volume in mammals and other lower organisms. These are known to be the ancient remnants accruing by time within the genome and responsible for influencing the genome by their property of mobilization. There are two classes of transposons 1) Class I Transposable elements flanked by Long Terminal Repeat (LTR), LINE and SINE elements and move by copy and paste mechanism within the genome. 2) CLASS II transposons flanked by Terminal Inverted repeats TIR move by cut and paste mechanism. They composed 45% of the humans and one third of flies' genome and are known to be triggered by piwi-interacting RNAs (piRNA), a class of very less known small non-coding RNAs responsible for maintaining genomic integrity, heterochromatin formation and epigenetic regulation of germ line organs in gonads of flies and other mammals

### Biography

Dr. S.L.Garg from Devi Ahilya University, India. He is a reputed personality of the world with rich professional experience in different aspects of science research and development, teaching and supervising, planning and administration, institutional growth, international cooperation etc. Dr. Garg is recognized as a well-known environmentalist, eminent scientist, good researcher and bright academician having sound administrative acumen. He is a person of integrity, vision and foresight to lead any institute to new heights in qualitative as well as quantitative growth. He has skills to work with international people and he can collaborate with international foreign Governments and other organizations.

This work is partly presented at 12<sup>th</sup> International Conference on Bacteriology and Infectious Diseases 2021, December 18, 2021.