

## U12-type Spliceosomal Introns of Insecta

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### Abstarc :

Most of eukaryotic genes are interrupted by introns that need to be removed from pre-mRNAs before they can perform their function. This is done by complex machinery called spliceosome. Many eukaryotes possess two separate spliceosomal systems that process separate sets of introns. The major (U2) spliceosome removes majority of introns, while minute fraction of intron repertoire is processed by the minor (U12) spliceosome. These two populations of introns are called U2-type and U12-type, respectively. The latter fall into two subtypes based on the terminal dinucleotides. The minor spliceosomal system has been lost independently in some lineages, while in some others few U12-type introns persist. We investigated twenty insect genomes in order to better understand the evolutionary dynamics of U12-type introns. Our work confirms dramatic drop of U12-type introns in *Diptera*, leaving these genomes just with a handful cases. This is mostly the result of intron deletion, but in a number of dipteran cases, minor type introns were switched to a major type, as well. Insect genes that harbor U12-type introns belong to several functional categories among which proteins binding ions and nucleic acids are enriched and these few categories are also overrepresented among these genes that preserved minor type introns in *Diptera*.

### Key Word :

U12-type introns, minor spliceosome, insect evolution.

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