GENOME RESEARCH
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Research

Methods and Resources

(continued)

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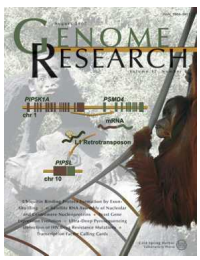

Cover L1 retrotransposon is an abundant inhabitant of mammalian genomes and an important force in mammalian genome evolution. In addition to its role as an insertional mutagen and a potent substrate for homologous recombination, L1 has produced a number of new genes by reverse transcribing cellular mRNAs and integrating the resultant cDNAs back into the genome. An unusual product of such L1-mediated retrotransposition process is a new primate gene *PIPSL*, which originated from a read-through, chimeric transcript between the neighboring phosphatidylinositol-4-phosphate 5-kinase (*PIP5K1A*) and the 26S proteasome subunit (*PSMD4*) genes. The *PIPSL* gene was formed roughly 17 million years ago, before the divergence of humans and orangutans, and was transcribed and translated to form a functional protein in an ancestral primate. The image background shows an outdoor sculpture of two gorillas, in the foreground, Sugi, a playful 11-year-old orangutan, both in the Philadelphia Zoo. (Cover illustration and photos by D. Babushok and H. Kazazian. [For details, see Babushok et al., pp. 1129–1138.])