

## Artificial chromosome created

Chromos Molecular Systems Inc. of Canada and the Biological Research Centre, Hungarian Academy of Sciences, Hungary, have together created an artificial human chromosome that could potentially provide a low-risk vector for gene therapy purposes. Researchers developed a satellite DNA-based artificial chromosome (SAT-DAC) that is mitotically stable and capable of expressing exogenous DNA sequences. This is the first report of a reproducible and effective methodology to create artificial human chromosomes from predictable sequences. The methodology allows researchers to insert a gene into mammalian cells without the risk of disrupting other genes at the integration site.

The chromosomes were generated by employing the intrinsic large-scale DNA-amplification mechanisms of mammalian cells. The research team induced the formation of new human artificial chromosomes by targeting DNA sequences into amplifiable sites in the centromeric/short-arm regions of human acrocentric chromosomes. The artificial chromosomes acquired all the structural and functional elements needed for chromosome replication. Researchers were able to isolate mitotically stable sub-clones containing the chromosomes, and they further showed that the integrated marker genes are expressed.

This discovery provides important validation of the artificial chromosome technology and its use in the development of novel, large capacity and safe vectors for gene therapy. *Contact: Ms. Eileen Utterson, VP of Corporate Development, Chromos Molecular Systems Inc., 6660 NW Marine Dr., Vancouver, BC V6T 1Z4, Canada. Tel: +1 (604) 7186 400; Fax: +1 (604) 7186 424. (Website: <http://www.bioresearchonline.com>)*