

Identification of a novel retrotransposon-like element in *Xenopus laevis* with a developmentally regulated expression

Han, Jin-kwan

Pohang University of Science and Technology

A novel cDNA clone named *10A1* was obtained by the differential display PCR (DD-PCR) technique. The structural features of *10A1*, as reflected in cDNA and genomic clones, fit into the LTR-retrotransposon properties. It contains long terminal repeats (LTRs), primer binding site and polypurine tract. *10A1* LTRs are bounded by 6 bp inverted repeats, and can be subdivided into U3, R and U3 region. Also multiple copies of *10A1*-related element are present in the *Xenopus* genome, and *in vitro* synthesized *10A1* complementary RNAs are translated to produce a predicted size of protein. *10A1* open reading frame (ORF) encodes the leucine zipper motif capable of forming the coiled-coil as well as CCHC motif conserved in retroviral *gag* proteins, raising the possibility that *10A1* may produce ribonucleoprotein particles that can mediate retrotransposition. However, no amino acid homology to usually conserved retroviral *pol* gene was revealed, suggesting that *10A1* adds to a novel family of LTR-retrotransposon-like element in *Xenopus*. We also show that zygotically activated *10A1* transcripts are restricted to ventro-posterior specific regions and induced by ventralizing manipulations.