Supplementary Figures

Supplementary Fig.1. T7E1 assay results showed mutations from mixed F0 zebrafish embryos injected with a cocktail of 7 smarca2 gRNAs. Lane 1, 3, 5, and 7: un-injected sibling control fish embryos. Lane 2, 4, 6, and 8: mixed gRNA injected fish embryos. Each gDNA sample was extracted from 20-30 fish embryos. Lanes 1-2: CR1 gRNA. Lanes 3-4: CR15-1 and CR15-2 gRNAs. Lanes 5-6: CR28-1 and CR28-2. gRNAs Lanes 7-8: CR3-1 and CR3-2 gRNAs. Approximate expected sizes (bps) of DNA bands after T7E1 for each gRNA: CR1: 123+87; CR3-1: 305+134; CR3-2: 225+214; CR15-1: 189+134; CR15-2: 211+112; CR28-1: 196+155; CR28-2: 221+130. Positive DNA bands are indicated by red arrows. Some genetic polymorphism among the embryos was noted in some DNA regions such as Lane1 and Lane 7. +T7E1: treated with T7E1. -T7E1: samples underwent the same treatment without T7E1.
Supplementary Fig.2. T7E1 assay results showed mutations from mixed F0 zebrafish embryos injected with a cocktail of 2 rnf185 gRNAs and 2 rnf215 gRNAs. Lanes 1-4: un-injected sibling control fish embryos. Lanes 5-6: mixed gRNA injected fish embryos. Each gDNA sample was extracted from 20-30 fish embryos. Lanes 1 and 5: rnf185 CR2. The expected sizes of cleaved bands are 214 and 106bps. Lanes 2 and 6: rnf185 CR4. The expected sizes of cleaved bands are 135 and 94bps. Lanes 3 and 7: rnf215 CR6. The expected sizes of cleaved bands are 233 and 113bps. Lanes 4 and 8: rnf185 CR7. The expected sizes of cleaved bands are 204 and 198bps. Positive DNA bands are indicated by red arrows. +T7E1: treated with T7E1. -T7E1: samples underwent the same treatment without T7E1.
Supplementary table 1. DNA sequences of oligonucleotides used in this research.

| Oligo Names | DNA Sequences 5'-> 3' |
|-------------|-----------------------|
| Dr.smarca2-CR1 | GGCTCTGTACACAGCATGAT |
| Dr.smarca2-CR3-1 | GCCAATGGATCCGCAGGGGA |
| Dr.smarca2-CR3-2 | GCCTACAAGATTTCTGGAGACG |
| Dr.smarca2-CR15-1 | CAACCTGAATGGTATTCCTG |
| Dr.smarca2-CR15-2 | AGCGGTCAGATGTGAGATA |
| Dr.smarca2-CR28-1 | ATCAGGGCGTCAGCTAGCG |
| Dr.smarca2-CR28-2 | CGAACCTGAAGAAACCCGG |
| Dr.mlf185-CR2 | GGTCAATCAGCGGGAGAAAG |
| Dr.mlf185-CR4 | GTGATCCACTGTACGGCAG |
| Dr.mlf215-CR6 | AGCTGCACGTCGTCAAAGAG |
| Dr.mlf215-CR7 | GACCCCTGTGGAGAAACAA |
| Overlap adaptor | GTTTAGAGCTAGAAATAGCAAG |
| CRISPR constant oligo | AAAAGCACCACGACTCGGTGCACTTGCCACTTTCAAGTTGATAACG |
| Dr.smarca2-Fw 1 | CAATGAGCCACCTGTGGGATG |
| Dr.smarca2-Rv 1 | TGCATTGGGTGCATTTCTTGTGAGTATTC |
| Dr.smarca2-Fw 3 | CATGTCGCCTACCCCTTCAC |
| Dr.smarca2-Rv 3 | AAGTTCAGAGCCCAGGTGCTAC |
| Dr.smarca2-Fw 15 | CATGAGTCTGCTCGGTGTTGCTG |
| Dr.smarca2-Rv 15 | GAAGCCATTAGGCCGCAAATCC |
| Dr.smarca2-Fw 28 | TGTGATCAATGTAACCCAGGTGAG |
| Dr.smarca2-Rv 28 | GGGTAATCCTGGTTATCGTTCCATCC |
| Dr.mlf185-Fw 2 | AGGGTTCGTTTAATGGGAAATGG |
| Dr.mlf185-Rv 2 | TTAACCAATGGCGACAAAGCGTG |
| Dr.mlf185-Fw 4 | GTTTACAGTGGTATTAGACACTCTG |
| Dr.mlf185-Rv 4 | GTTGCTGTAGACGCGACCTTCAG |
| Dr.mlf215-Fw 6 | AGCGACAGATTTACTGCTCAG |
| Dr.mlf215-Rv 6 | ACTGCTACTACTGTGCTCTT |
| Dr.mlf215-Fw 7 | TCAATGGACATCCACACTTCG |
| Dr.mlf215-Rv 7 | TGAGAAGGTGGAAAGCCTG |