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Supplemental Information

Chromosome Transplantation: A Possible

Approach to Treat Human X-linked Disorders

Marianna Paulis, Lucia Susani, Alessandra Castelli, Teruhiko Suzuki, Takahiko Hara, Letizia Straniero, Stefano Duga, Dario Strina, Stefano Mantero, Elena Caldana, Lucia Sergi Sergi, Anna Villa, and Paolo Vezzoni

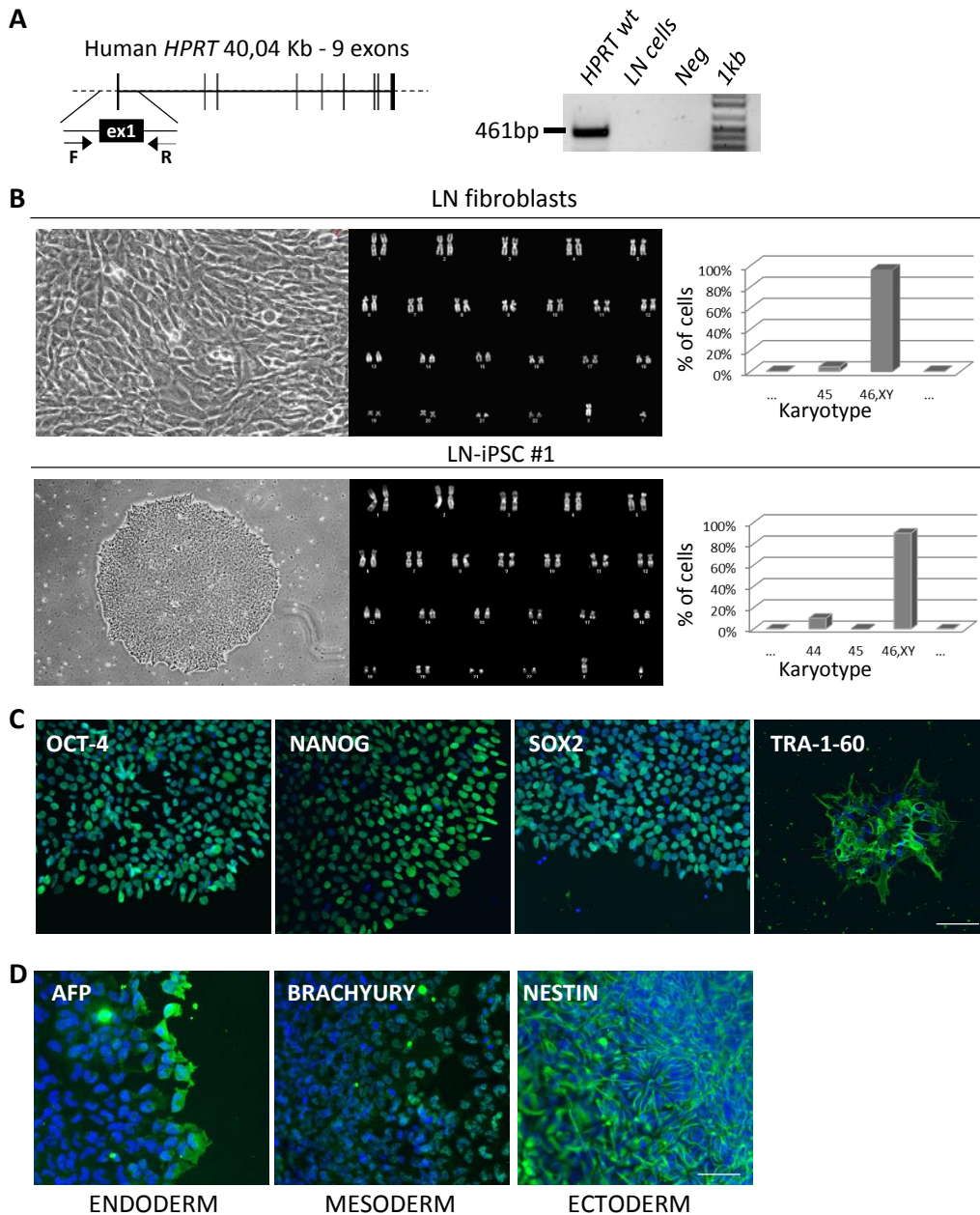


Figure S1 Characterization of the reprogrammed human LN-iPSCs

(A) Scheme of the strategy used to identify the deletion of the *HPRT* gene in the LN fibroblasts. The 461-bp band is identified only in the wt cells. (B) Morphology and karyotype analysis of the fibroblasts (upper panel) and the derived reprogrammed iPSCs (lower panel). (C) Immunostaining for stemness markers (green): OCT4, NANOG, SOX2, and TRA-1-60. Nuclei are counterstained with DAPI (blue). Scale bar, 50µm. (D) Immunostaining for markers of the 3 germ layers (green): endoderm (AFP), mesoderm (BRACHYURY), ectoderm (NESTIN). Nuclei are counterstained with DAPI (blue). Scale bar, 50 µm.

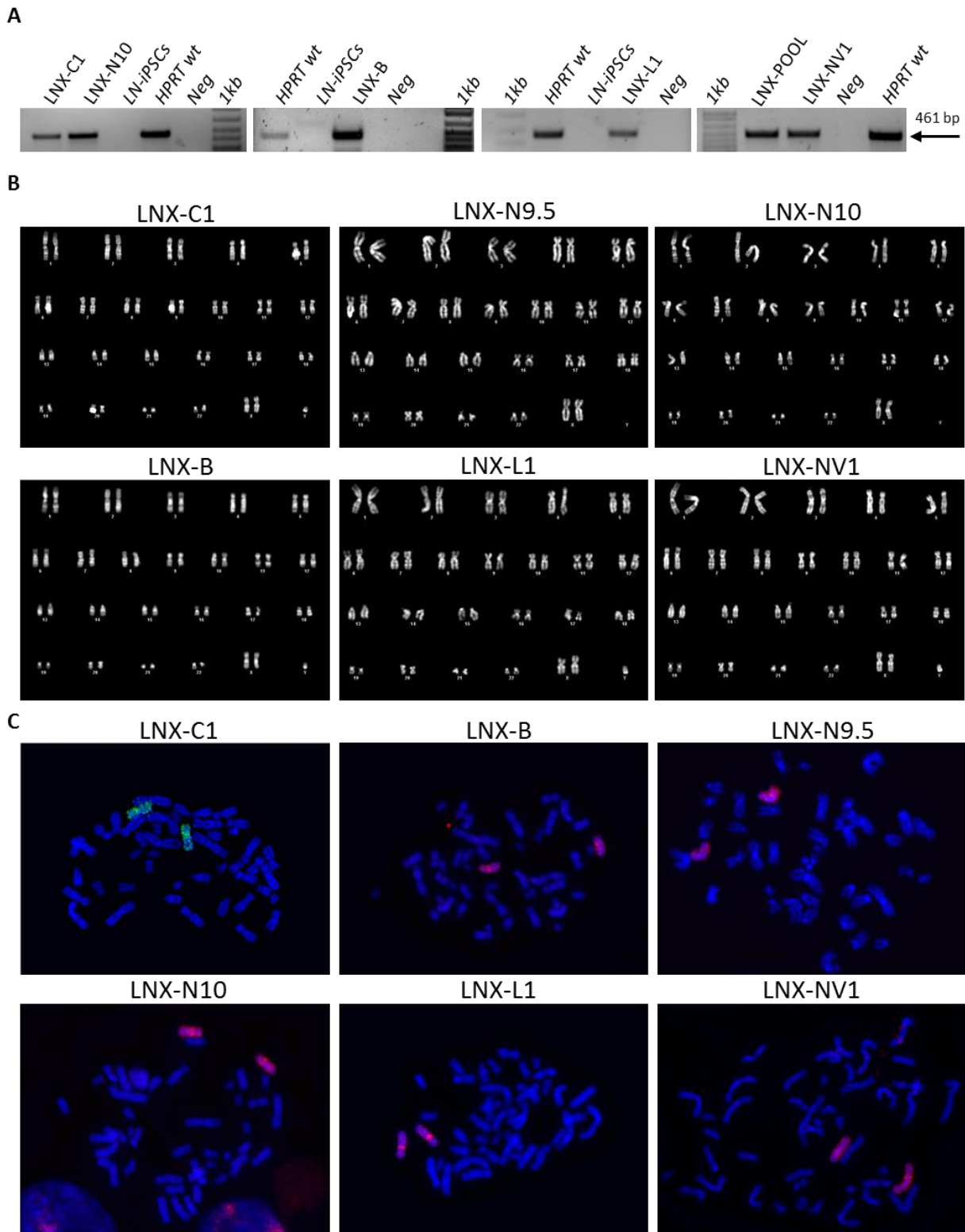


Figure S2 Characterization of HAT resistant (HAT^R) human LNX-iPSC clones after retro-MMCT

(A) PCR analysis of the *HPRT* locus in 5 HAT resistant clones (LNX-C1, LNX-N10, LNX-B, LNX-L1, LNX-NV1). Bands are from different gels, each with its own 1 kb ladder; for comparison, amplified bands from positive (*HPRT* wt) and negative (LN-iPSCs) controls are also shown. Neg, negative control, 1kb, DNA ladder. LNX-POOL, pool of HAT resistant cells. The 461-bp band (arrow), specific for exon 1 is seen only in the *HPRT* wt control and in the HAT resistant clones. (B,C) Representative karyotypes (B) and metaphase spreads after FISH (C) with a painting probe (green or red) for the human X chromosome of six HAT^R clones. Chromosomes were counterstained with DAPI (blue).

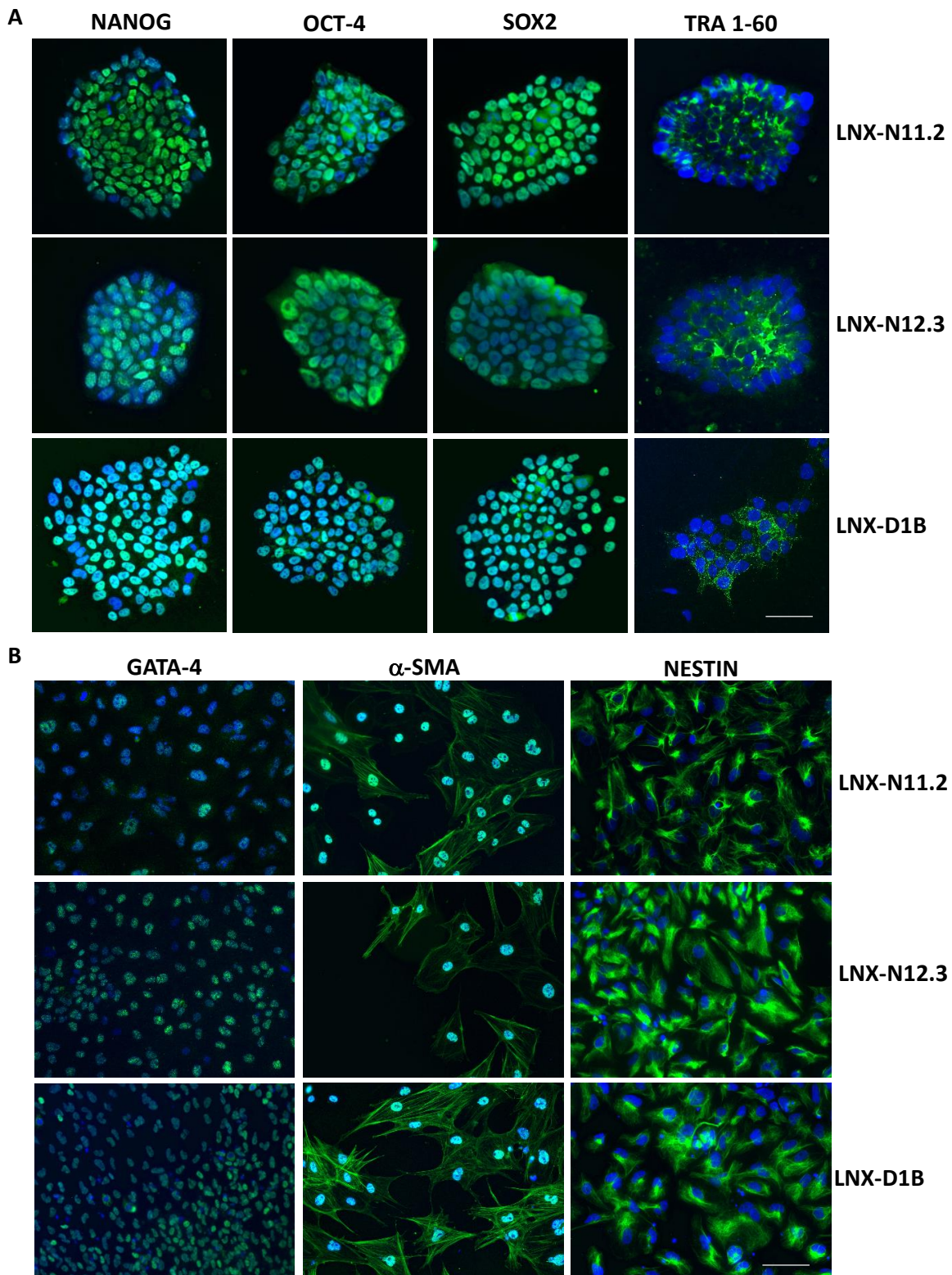


Figure S3 Characterization of the pluripotency of the three CT clones

(A) Immunostaining for stemness markers (green): NANOG, OCT4, SOX2, and TRA-1-60. Nuclei are counterstained with DAPI (blue). Scale bar, 50 μ m. (B) Immunostaining for markers of the three germ layers (green): endoderm (GATA-4), mesoderm (α -SMA), and ectoderm (NESTIN). Nuclei are counterstained with DAPI (blue). Scale bar, 50 μ m.

Table S1. Primers for wt *HPRT* and SNPs.

	PRIMER FORWARD	PRIMER REVERSE	Amplicon Size
<i>HPRT</i> exon1	5'-GAAAATCCCACGGCTACCT-3'	5'-CGTGACGTAAGCCGAACC-3'	461bp
SNP-rs808119	5'-CTACTCCACCATGCTCTGCT -3'	5'-TGAGTATAACCCACGCAGCA-3'	392bp
SNP-rs13440874	5'-AGAGGAGGCTTTCTGTGCTT-3'	5'-AAGATCGTCAAGGGTCTGCA-3'	350bp
SNP-rs2071136	5'-ATTTGAGAGCGAGCAGTGC-3'	5'-AATCCGATGATGCCGCTCTA-3'	408bp
SNP-rs12850852	5'-CTGCCAGGCTGAAGGAAAAG-3'	5'-CTAGTTGCGTGAGTGGCTTG-3'	381bp
SNP-rs2290380	5'-ACAATGTACAAAGCCTGCCC -3'	5'-CCCTTTGTAAGTCTGCATCG-3'	228bp