Inverted order: The direction of your DNA may be as important as which parent it came from

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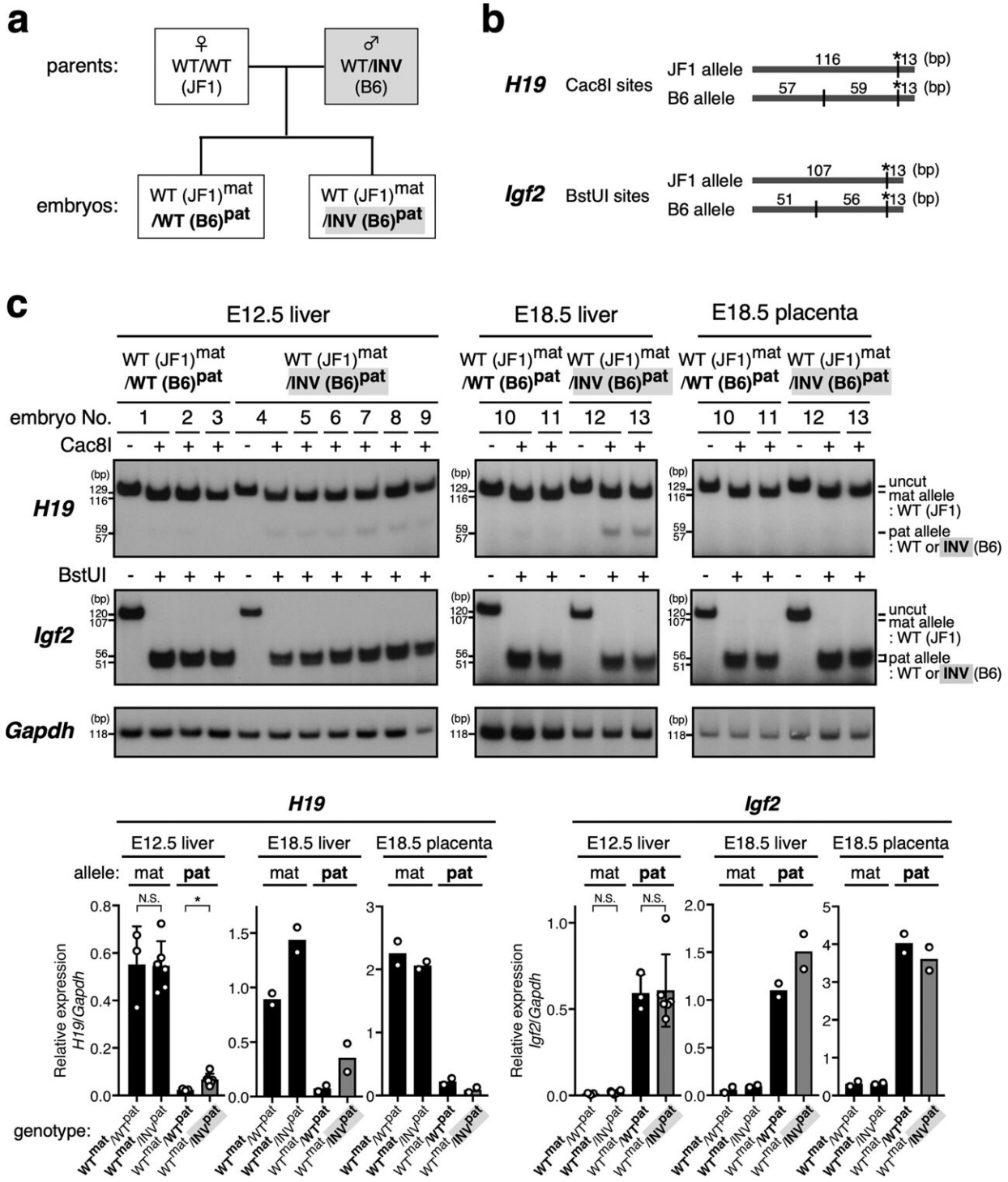

Fig. 1: H19 gene expression was derepressed on the paternally inherited inverted-ICR allele in fetal livers but not in placentas. a Breeding scheme. In order to distinguish parental origin of the alleles by using SNPs between inbred mouse strains, inverted-ICR heterozygous male mice (WT/INV; C57BL/6J [B6]

background) were mated with wild-type female mice (WT/WT; JF1/Msf [JF1]), and embryos were obtained. b, c The allele-specific expression of the Igf2 and H19 genes was examined by RFLP analysis. Total RNA was extracted from livers (at E12.5 and E18.5) and placentas (E18.5), and H19 and Igf2 gene transcripts were amplified by RT-PCR followed by Cac8I or BstUI digestions, respectively. Parental origin of transcripts was discriminated by allele-specific restriction sites. The asterisks in (b) indicate restriction sites introduced into primer sequence to monitor complete digestion of PCR products. The signal intensity of the bands was quantified and the ratio of H19 or Igf2 expression to that of Gapdh (arbitrary unit) was displayed on the graph. The means ± SD are shown for genes expression in E12.5 liver (*p