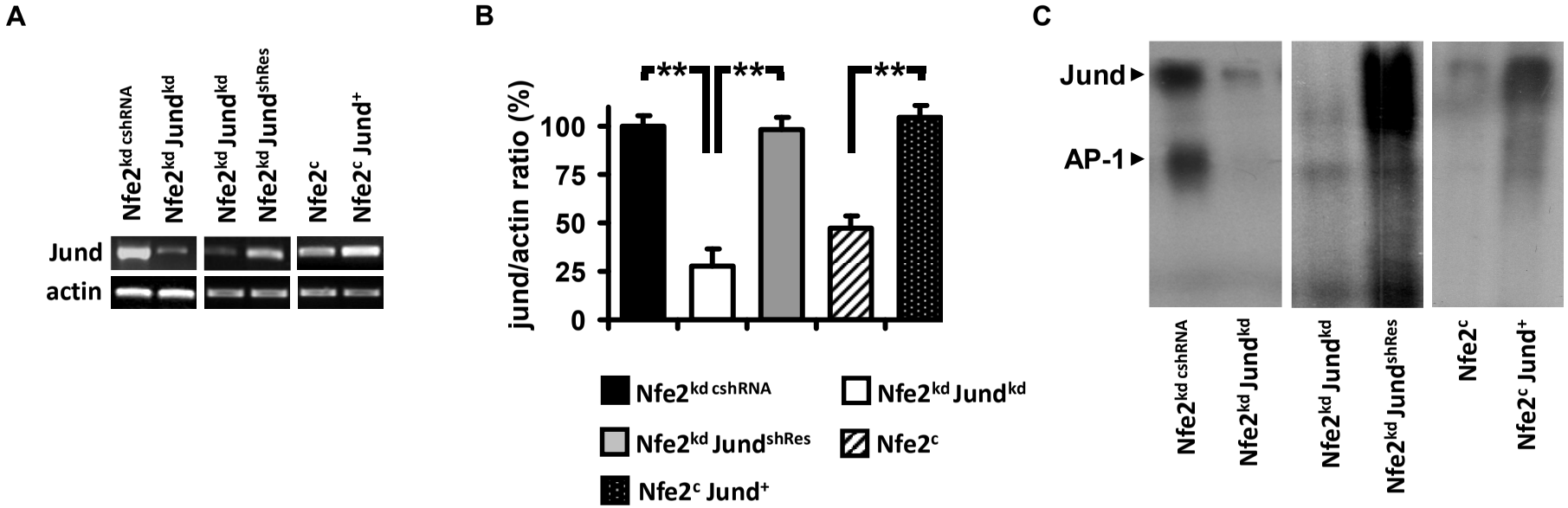
**Supplementary Figure S1, related to Figure 2**



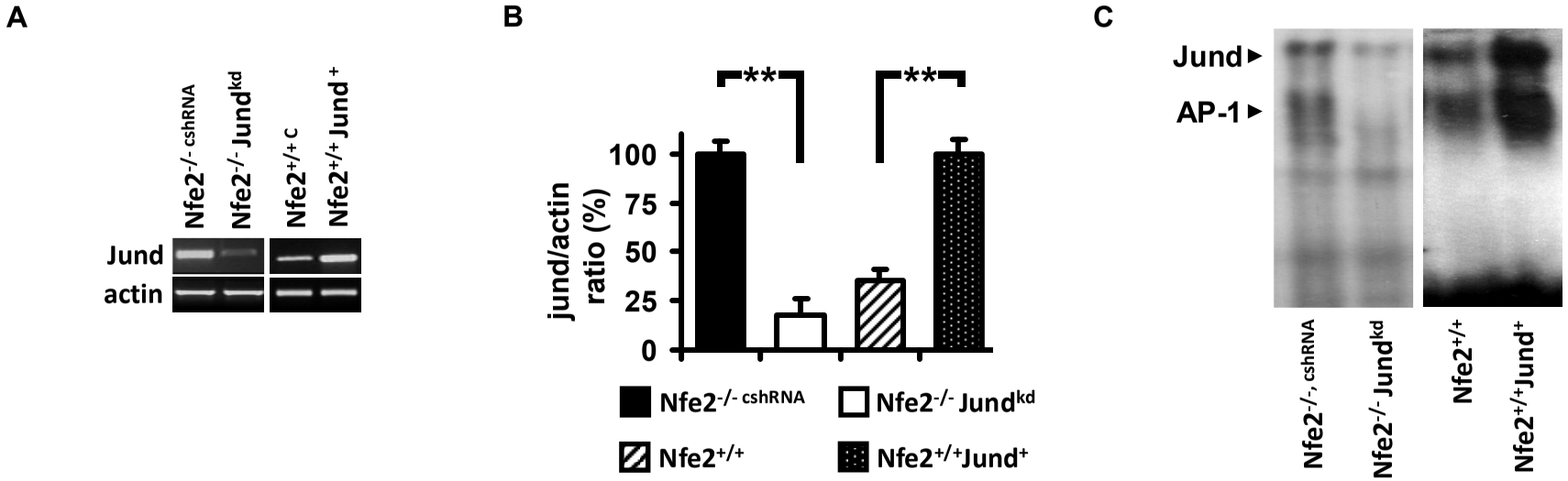

**Supplementary Figure S1: Efficiency of Jund knock down and knock in *in vitro***

Infection of Nfe2$^{kd}$ trophoblast cells with Jund specific shRNA expressing lentiviral particles (Nfe2$^{kd}$Jund$^{kd}$) reduces Jund mRNA levels (a, b) and binding activity of Jund (c) when compared to Nfe2$^{kd}$ cells transfected with non-specific shRNA (Nfe2$^{kd\ cshRNA}$). Reduction of Jund expression or Jund binding activity is not observed when Nfe2$^{kd}$Jund$^{kd}$ trophoblast cells are transiently infected with a shRNA resistant Jund mutant (Nfe2$^{kd}$Jund$^{shRes}$, a-c). Infection of control trophoblast cells (Nfe2$^{c}$) with Jund overexpressing lentiviral particles (Nfe2$^{c}$ Jund$^{+}$) increases JunD expression and Jund binding activity (a-c).

Representative images of semiquantitative RT-PCR (a), bar graph summarizing results of RT-PCR analyses (b), and representative images of supershift EMSA for Jund (c).

mean value ± s.e.m.; $^{**}P < 0.01$ (T-test).

**Supplementary Figure S2, related to Figure 3**




**Supplementary Figure S2: Efficiency of Jund knock down and Jund overexpression *in vivo***

Following transduction of $Nfe2^{-/-}$ blastocysts with Jund specific shRNA expressing lentiviral particles ($Nfe2^{-/-}Jund^{kd}$) Jund mRNA levels (a, b) and Jund binding activity (c) are reduced in placental extracts obtained at day 14.5 p.c. Conversely, overexpression of Jund using the lentiviral approach ($Nfe2^{+/+}Jund^{+}$) results in enhanced Jund mRNA levels and Jund binding activity in placental extracts obtained at day 14.5 p.c. Representative images of semiquantitative RT-PCR (a), bar graph summarizing results of RT-PCR analyses (b), and representative images of supershift EMSA for jund (c). mean value ± s.e.m.; $^{**}P < 0.01$ (T-test).