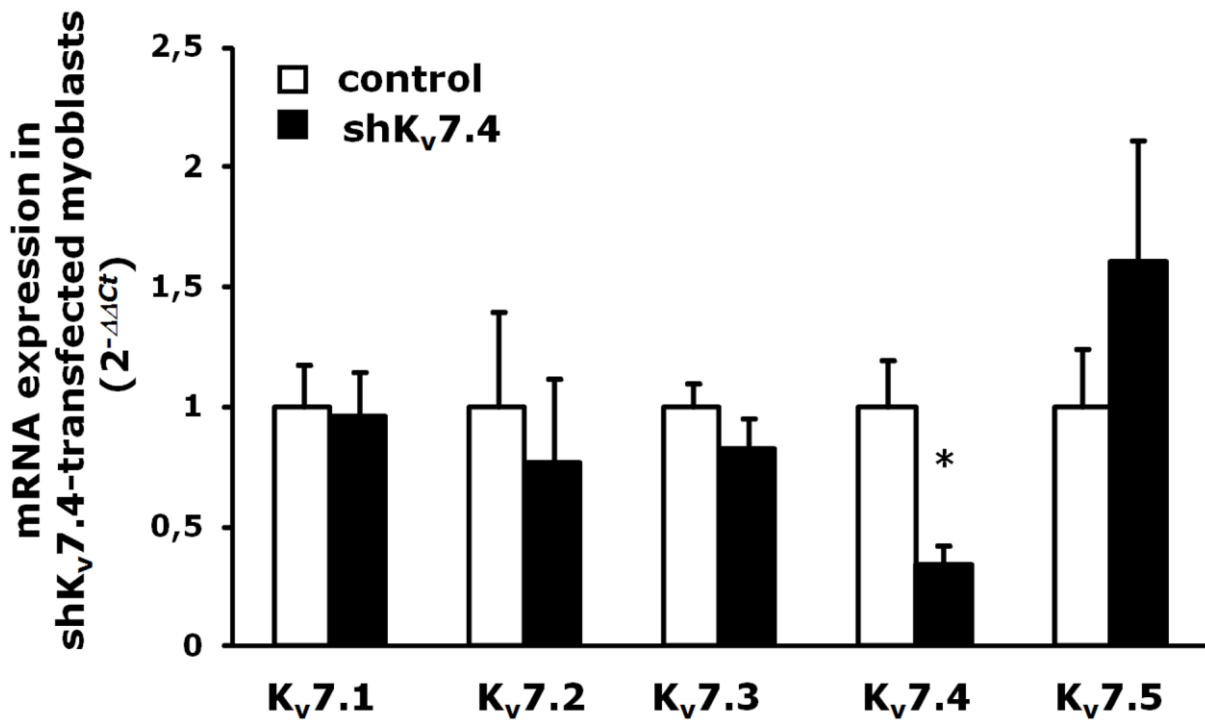
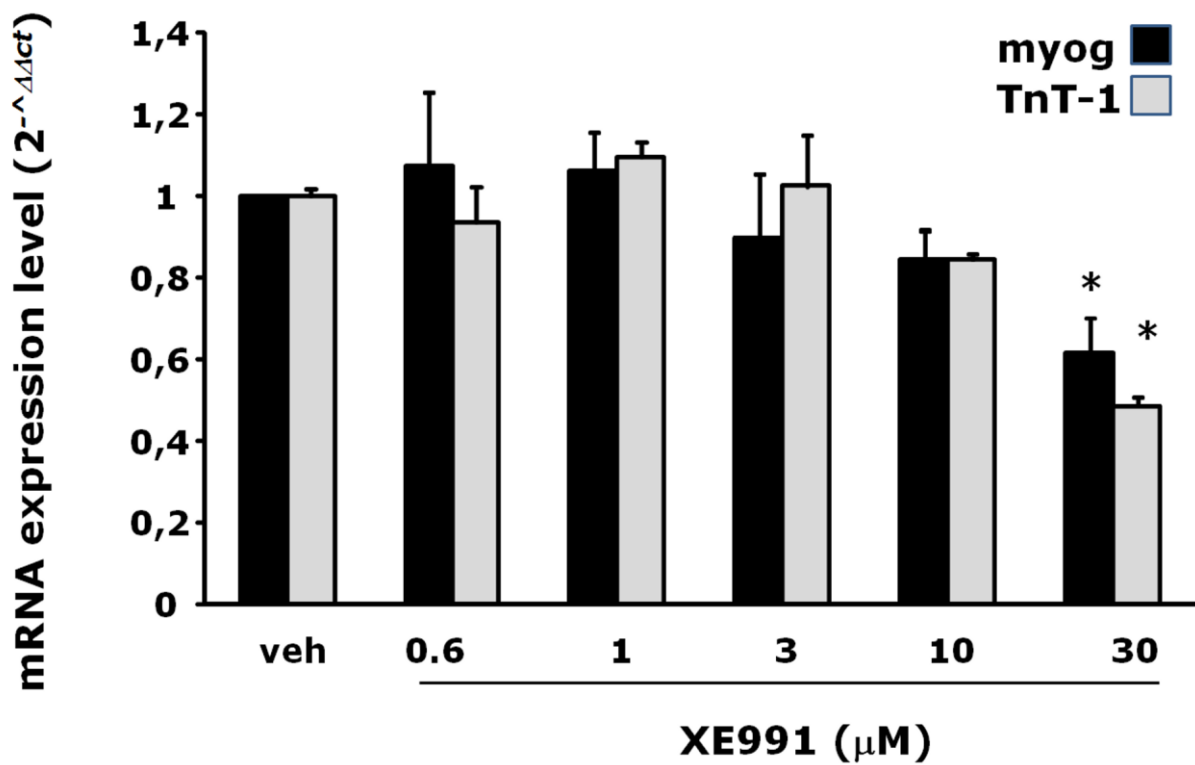


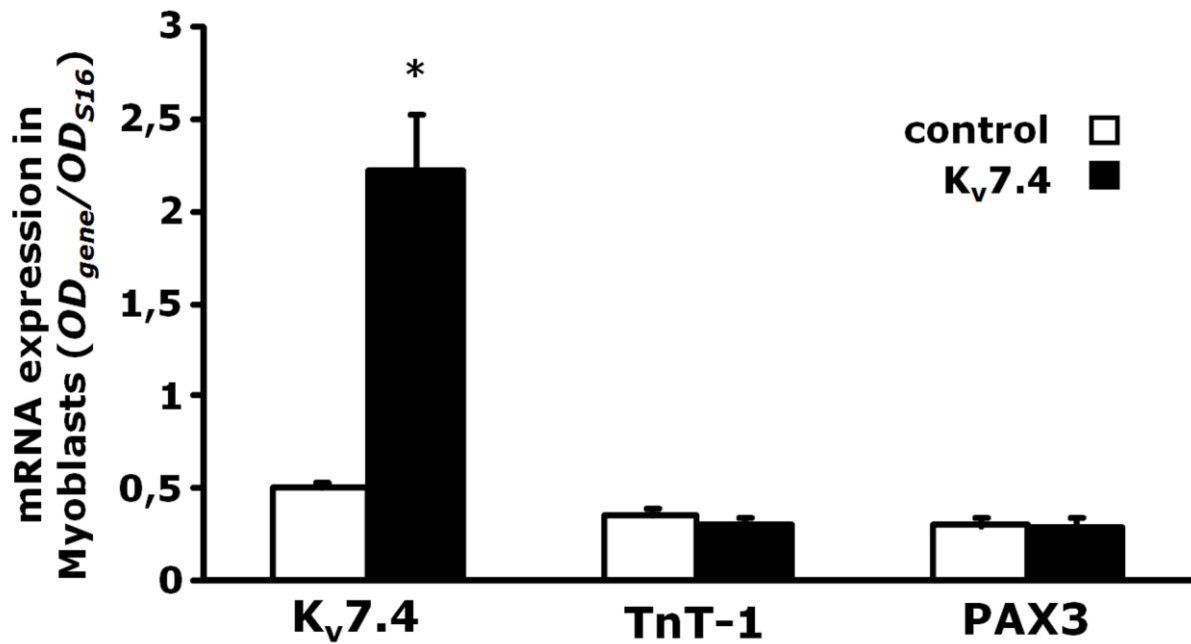
**Supplemental Figure 1. Comparative expression of K<sub>v</sub>7 transcripts during skeletal myogenesis in C<sub>2</sub>C<sub>12</sub> cells and HSkM cells.** Quantification of K<sub>v</sub>7 mRNA expression levels in murine C<sub>2</sub>C<sub>12</sub> (grey columns) and in primary human (HSkMC; black columns) differentiated myotubes relative to myoblasts upon 48 hrs of exposure to differentiation media (DM), by use of quantitative real-time PCR. Each data point is from at least 4 separate experiments in GM- or DM-exposed cells. \* =  $p \leq 0.05$ .



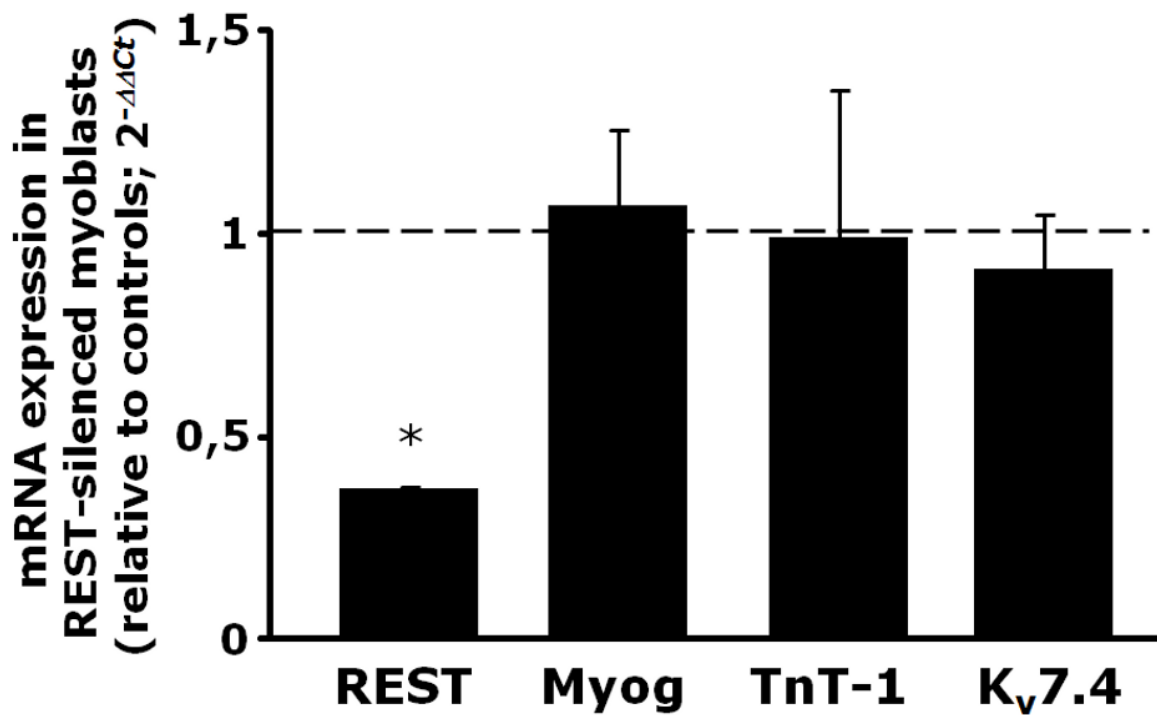
**Supplemental Figure 2. Effect of shKv7.4 transfection on the expression levels of Kv7 transcripts in C<sub>2</sub>C<sub>12</sub> myoblasts.** Transcripts levels analysis of all members of Kv7 subfamily analyzed in C<sub>2</sub>C<sub>12</sub> myoblasts transfected with control (empty columns) and shKv7.4 plasmid (black columns) by use of quantitative PCR. Data are expressed using the 2<sup>-ΔΔCt</sup> formula. Each data point is from at least 4 separate transfections (scramble- or shKv7.4- plasmid). \* = p ≤ 0.05 versus control-transfected C<sub>2</sub>C<sub>12</sub> cells.



**Supplemental Figure 3. Effect of XE-991 on C<sub>2</sub>C<sub>12</sub> differentiation.** Transcripts levels of Myog and TnT-1 were analyzed by quantitative PCR in C<sub>2</sub>C<sub>12</sub> exposed to DM in presence of different doses of XE-991. Data are expressed using the 2<sup>-ΔΔct</sup> formula. Each data point is from at least 3 separate experiments. \*= p<0.05 versus respective control (vehicle).



**Supplemental Figure 4. Effect of Kv7.4 over-expression on the expression of differentiation markers in C<sub>2</sub>C<sub>12</sub> myoblasts.** Transcripts levels of Kv7.4, TnT-1, and Pax3 were analyzed by semi-quantitative PCR in C<sub>2</sub>C<sub>12</sub> myoblasts transfected with control plasmid (empty columns) and pcDNA3.1 carrying Kv7.4 gene. Data are normalized the OD of each gene of interest relative to that of the reference gene S16. Each data point is from three separate transfections (scramble- or Kv7.4- plasmid). \*= p≤0.05 versus respective control.



**Supplemental Figure 5. Effect of REST-silencing on the expression of differentiation markers in C<sub>2</sub>C<sub>12</sub> myoblasts.** REST, Myog, TnT-1 and K<sub>v</sub>7.4 transcript levels were analyzed by qPCR in C<sub>2</sub>C<sub>12</sub> myoblasts transfected with shREST plasmids. Data are expressed using the  $2^{-\Delta\Delta Ct}$  formula relative to the control condition (scramble plasmid). Each data point is from three separate transfections (scramble- or REST- plasmid). \* =  $p \leq 0.05$  versus respective control.

**Supplemental Table I. Primer sequences.**

	<b>sense primer (5'-3')</b>	<b>reverse primer (5'-3')</b>
<b><i>mouse primers</i></b>		
Troponin 1 (TnT-1)	CTGTGGTGCCTCCTTTGATTC	TGCGGTCTTTTAGTGCAATGAG
Myogenin (Myog)	AGGAGAGAAAGATGGAGTCCAGAG	TAACAAAAGAAGTCACCCCAAGAG
PAX3	GGGCAGAATTACCCACGCA	AGACGGTTCCTTTGTCCG
REST/NRSF	CATGGCCTTAACCAACGACAT	GGCGGATATGGTTGGGCAG
K <sub>v</sub> 7.1	GGACCAGAGACTGGTGATCATC	TTGCTGGGTAGGAAGAGCTCAG
K <sub>v</sub> 7.2	GCTTTCCGCATCAAGGGTG	TGCTAACTTTGAGGCCAGG
K <sub>v</sub> 7.3	CACCGTCAGAAGCACTTTGAG	CCTTTAGTATTGCTACCACGAGG
K <sub>v</sub> 7.4	CCGTTCTGTCAGGATTCTGAAGT	CCGTTCTGTCAGGATTCTGAAGT
K <sub>v</sub> 7.5	CTGGCAGCAAGAATTGTGAA	GTGGTCATGGCT TCAATGTG
S16	CTGGAGCCTGTTTTGCTTCTG	TGAGATGGACTGTCCGGATGG
<b><i>(ChiP)</i></b>		
Reg-1	AAGTTGCAGAGGGTGGA	TCCGGATTCCCAGGACATGA
Reg-2	CAGCAGATCAATGCTGCC	ATGGCCAAACCAGACGCT
Reg-3	TCCCCGATTTGGGAAGGC	GGCTCCAACCTACATGAAGACG
Reg-4	TGCAGAGTGAACAGGGCGA	GGCTCCAACCTACATGAAGACG
<b><i>human primers</i></b>		
Troponin 1 (TnT-1)	TGATCCCGCCAAAGATCCC	TCTTCCGCTGCTCGAAATGTA
K <sub>v</sub> 7.1	TTGCCCTGAAGGTGCAGCAGAA	TTCTCGGCAGCATAGCACCTCCAT
K <sub>v</sub> 7.2	TCCTGGAAATCGTGACTATCGT	TTCCGGGCAAACCTTGAGCC
K <sub>v</sub> 7.3	CCGCCAGTCAAGAGAAACAA	CAGGACAATCAGGAACACCAAC
K <sub>v</sub> 7.4	TGCTGTCCACTATCCAGGAC	CGATGAAGTCGATGACACAGAA
K <sub>v</sub> 7.5	CAGGGGCCAGAGTATTAAGAGC	CTTCTGCACTTTGGTGGGACT
REST/NRSF	GCCGGCTGCGCAATACAGT	TGAGGTGCGGCCAGTTCAGC
S16	TCGGACGCAAGAAGACAGCGA	AGCGTGCGGGCTCAATCAT