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Rn  TGCATAT-CTAGTTTTTTTTTTTTTTTTTAAATCCAAAACACAAAAGGGATTTTTTT
Hs  TGCATATCTAGTTTCTTTTTTTTTTTTTTAAATCCAAATCAAC--AAAGGGATTTTTTT
      *****  ***** * *****                ***** * ** *****

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Rn  T-CTAGTTTCAGTTTGGCACTGGATTTTATCCTGGAGTTTAAAAATATCTTCATCCT
Hs  TTTCTAGTTTCAGTTTGGCACTGGATTTTATCCTGGAGTTTAAAAATATCTTCATCCT
      * *****

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Rn  GTTCTTTTCTATTAAGGTTAATGTTGAAGAAGGAAAAATGCGGAAGTCGTCATTTGACAA
Hs  GTTCTTTTCTATTAAGGTTAATGTTGAAGAAGGAAAAATGCGGAAGTCGTCATTTGACAA
      *****

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Rn  GTTTTATAAATGAGTATTTGAAGCTCAGGAATAAGTGAAGCTGAAATTTGAAAAATAAA
Hs  GTTTTATAAATGAGTATTTGAAGCTCAGGAATAAGTGAAGCTGAAATTTGAAAAATAAA
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Rn  AGAAAGAATGCATGCTAATTATCAGACCAGAAGTCCCCTTGTAGAATATTGAGCAATTT
Hs  AGAAAGAATGCATGCTAATTATCAGACCAGAAGTCCCCTTGTAGAATATTGAGCAATTT
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Rn  GTGTGAAGTGGGGAAGATGAAAGAAGTCAGAATTTGAAACGGAAGAATGAAGAAAAGAAA
Hs  GTGTGAAGTGGGGAAGATGAAAGAAGTCAGAATTTGAAACGGAAGAATGAAGAAAAGAAA
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Rn  TAAAAATGAAGTTAAGATAAGAAGTAATCTGGAATCAGAAAGCACACGCTAAGTAATTA
Hs  TAAAAATGAAGTTAAGATAAGAAGTAATCTGGAATCAGAAAGCACACGCTAAGTAATTA
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Rn  CTAGTCTGTTTATGTGTCCCTGTATATTTTGCTAAACATGCATGCATTATTTGTTTAATA
Hs  CTAGTCTGTTTATGTGTCCCTGTATATTTTGCTAAACATGCATGCATTATTTGTTTAATA
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Mm  GAAAGAA-GTATATACAGGGTAAAGAAGTGACTTCCAAGGGAATCGTTTAAA
Rn  GAAAGAAAGTATATACAGGGTAAAGAAGTGACTTCCAAGGGAATCGTTTAAA
Hs  GAAAGAAATATATACAGGGTAAAGAAGTGACTTCCAAGGGAACGTTTAAA
      ** * * * * *

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Fig. S1 Alignment of ultraconserved sequences (uc.138) in *TRA2B* genes.

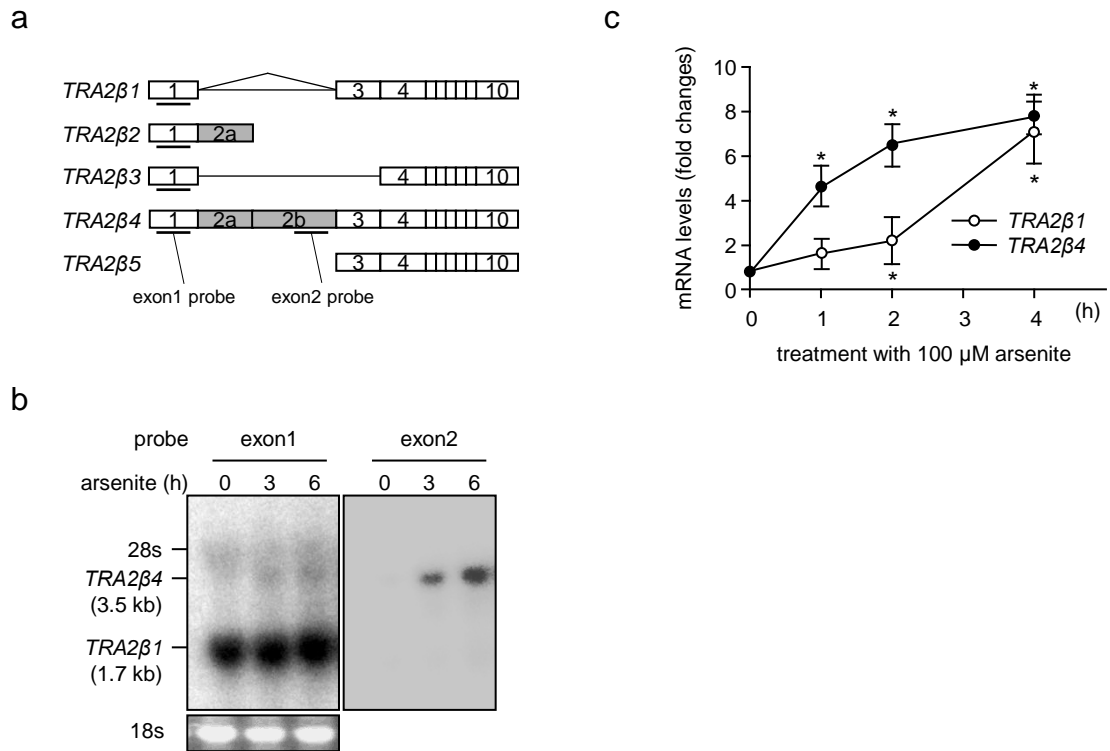


Fig. S2 Arsenite-stimulated expression of *TRA2β4* in HCT116 cells.

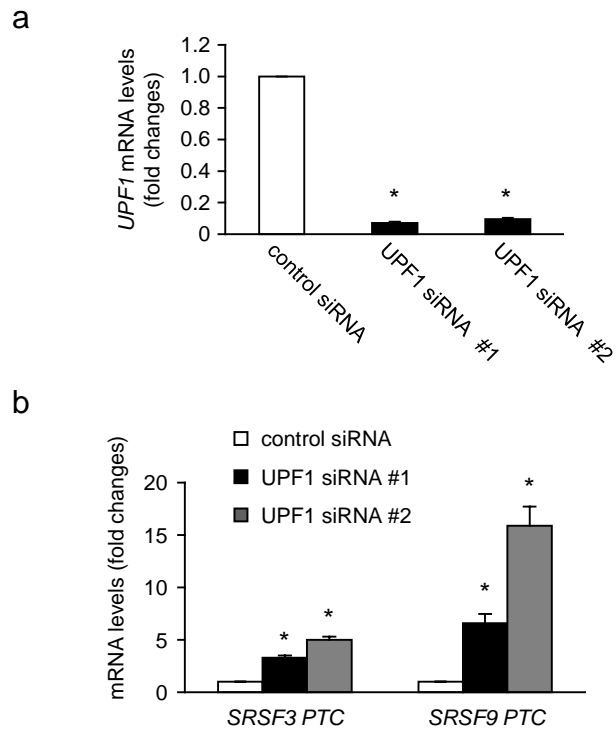


Fig. S3 UPF1 knockdown increases PTC variants of *SRSF3* and *SRSF9*.

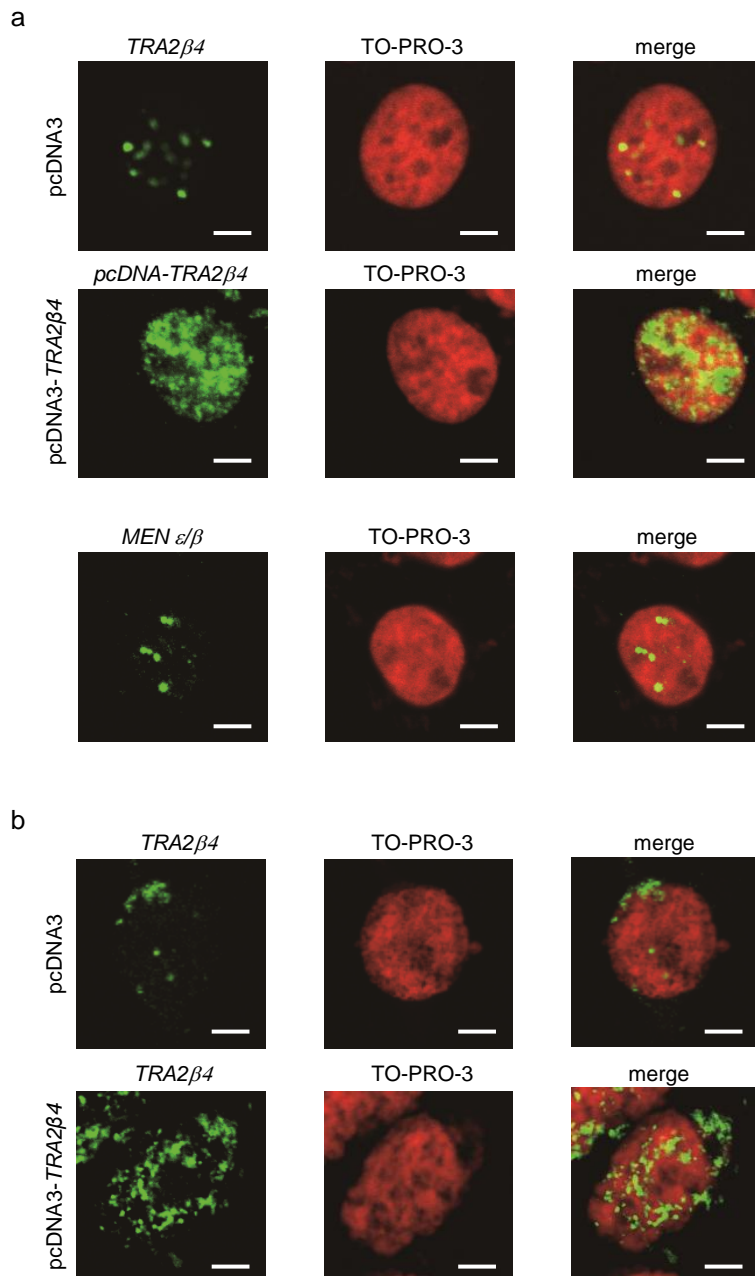


Fig. S4 Nuclear localization of *TRA2 $\beta$ 4*.

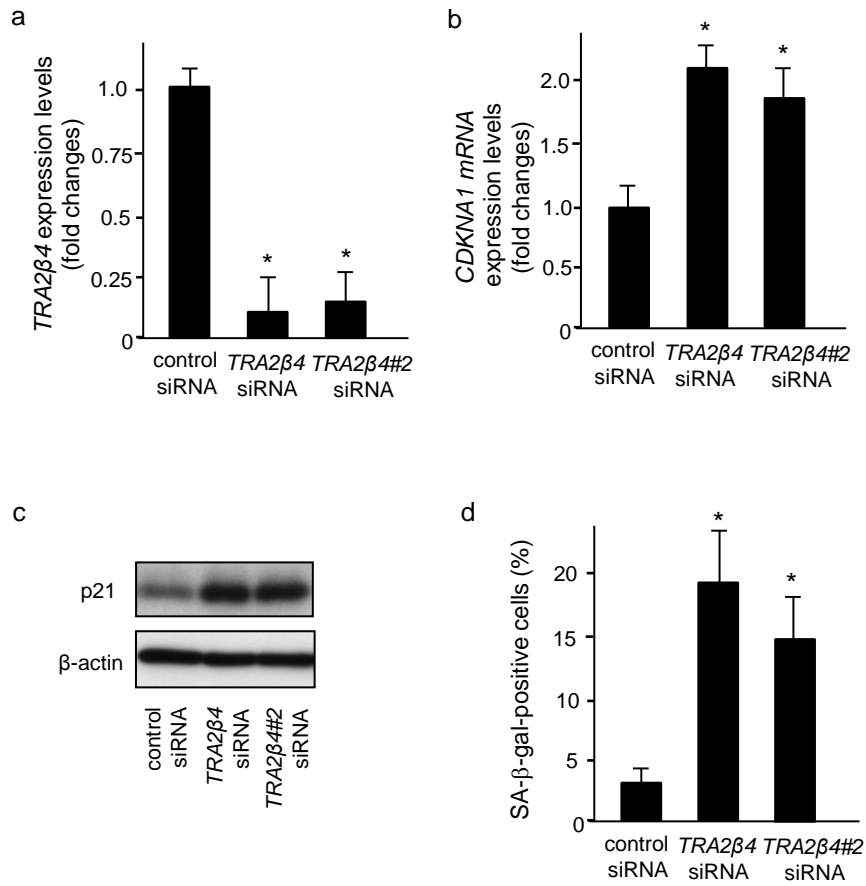


Fig. S5 *TRA2β4* knockdown increased expression of *CDKNA1* mRNA and p21 protein, and induced cellular senescence.

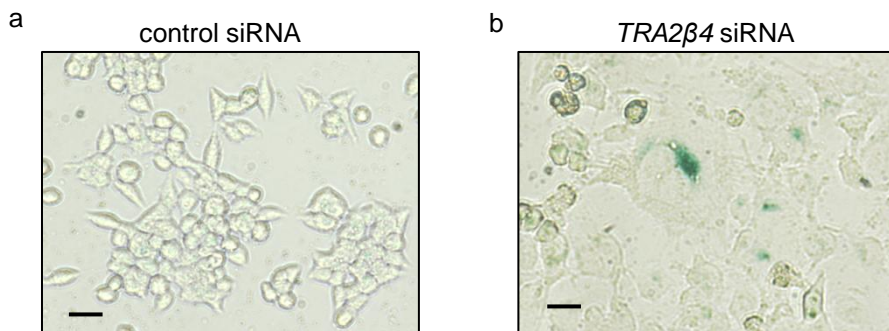


Fig. S6 *TRA2 $\beta$ 4* knockdown facilitates cellular senescence in p53<sup>-/-</sup> HCT116 cells.

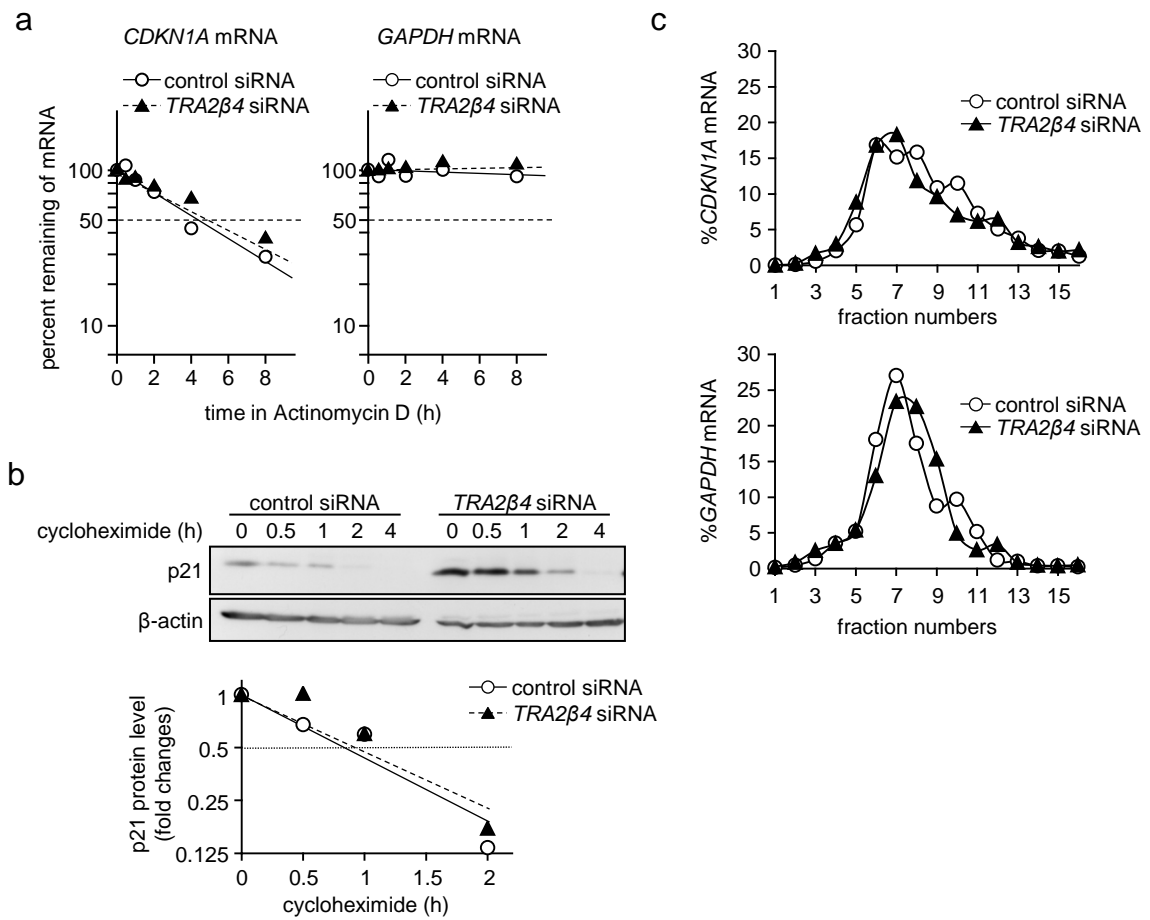


Fig. S7 *TRA2β4* knockdown does not affect stability of p21 protein or *CDKN1A* mRNA or translation rate of *CDKN1A* mRNA.

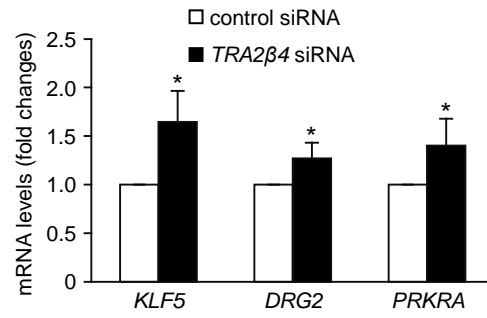


Fig. S8 *TRA2β4* knockdown up-regulates Sp1-mediated transcription of distinct genes.