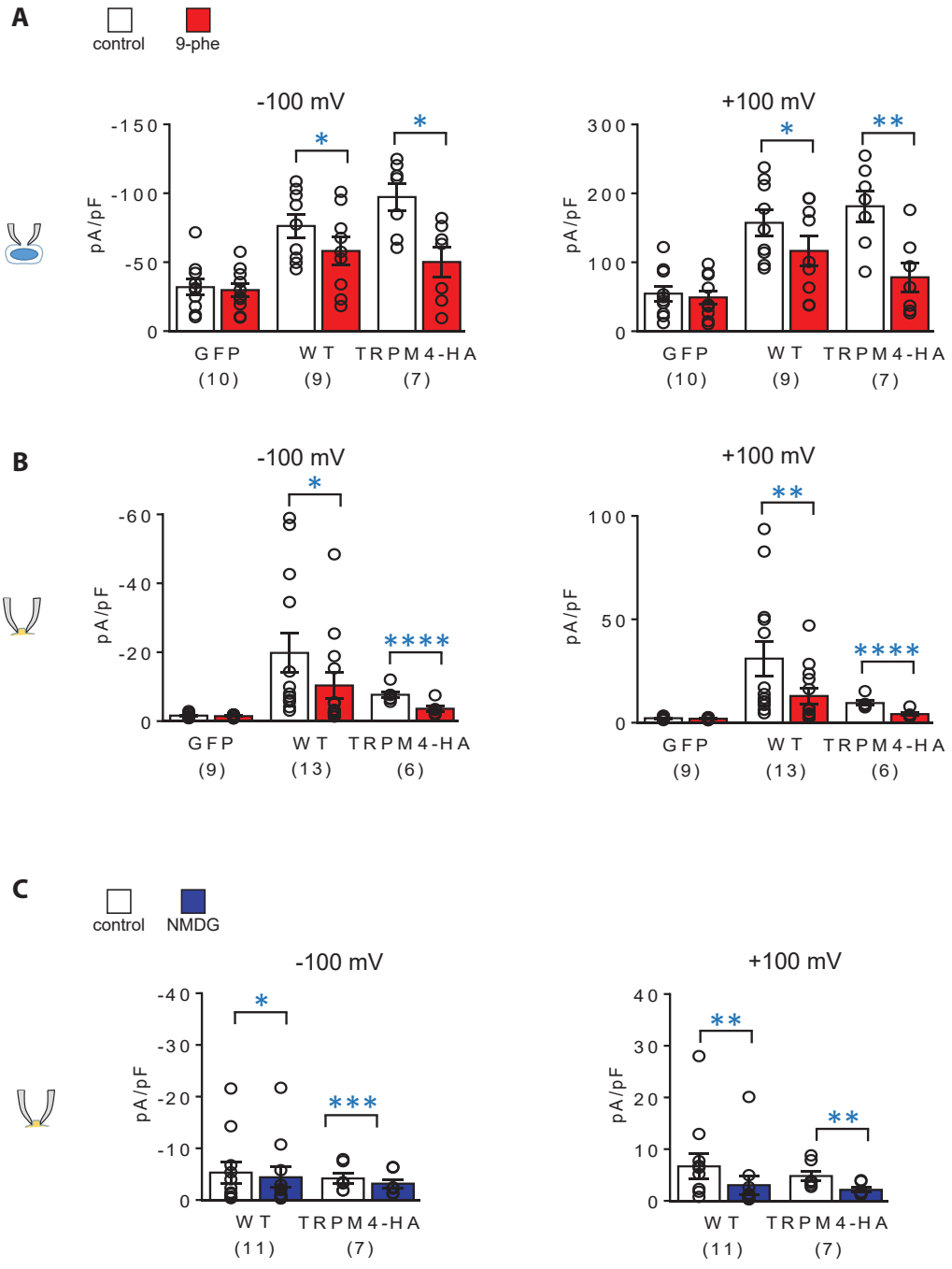
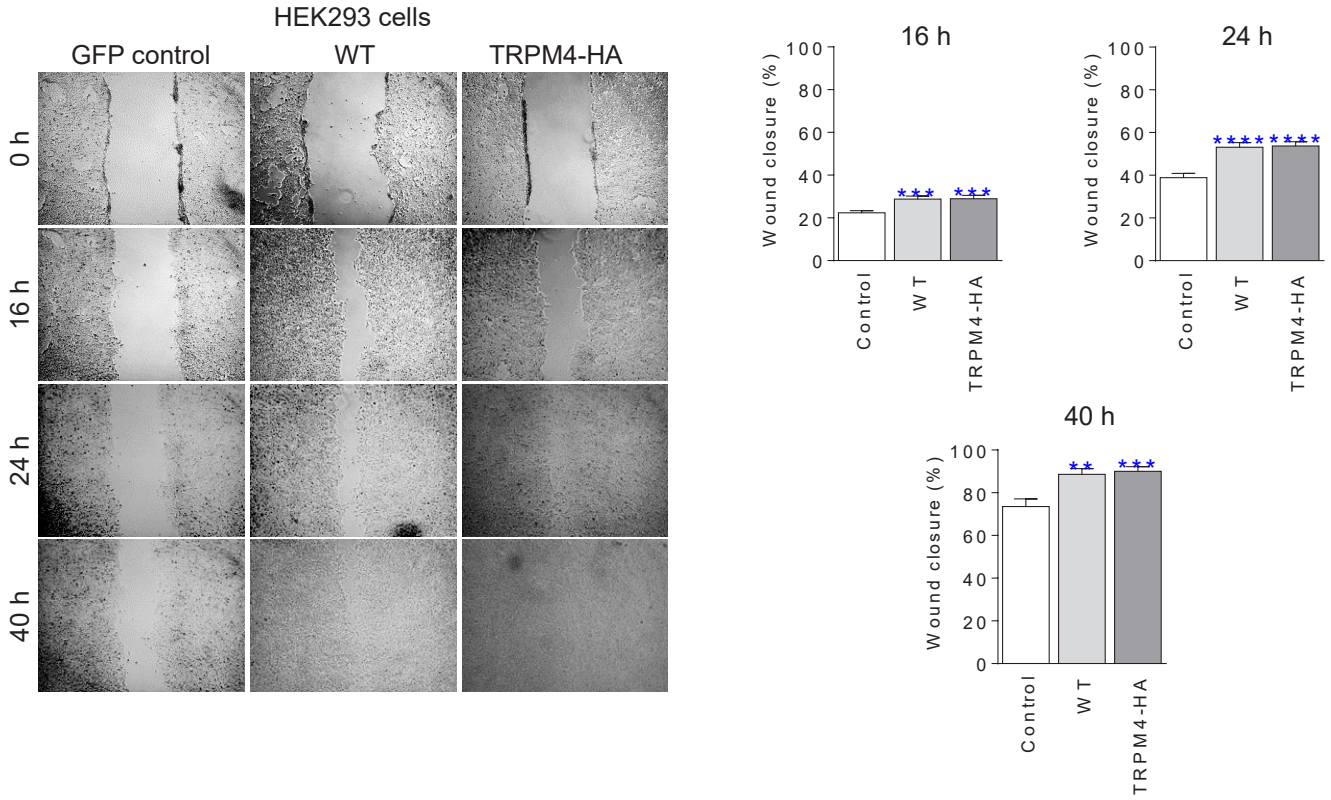
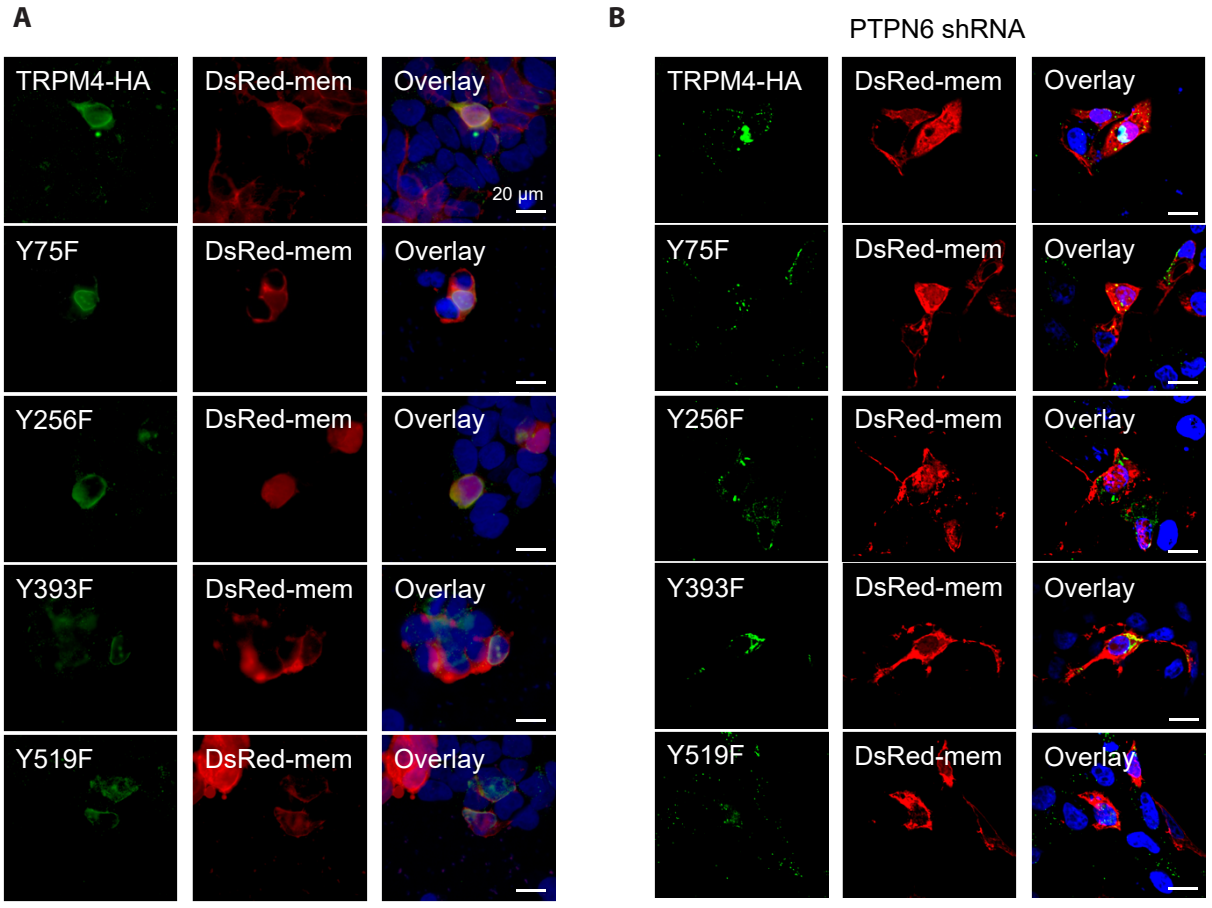


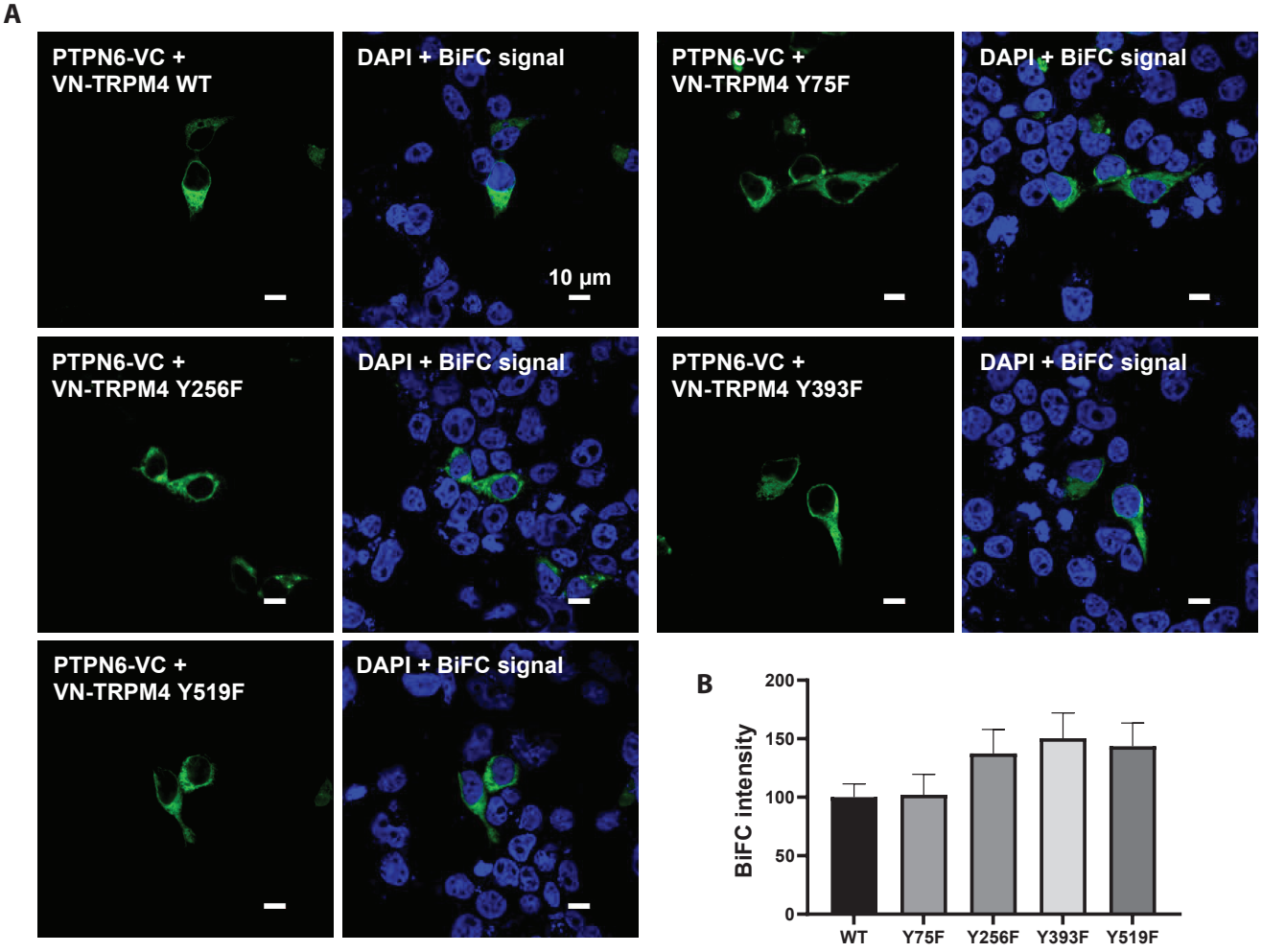

**Supplementary Fig. 1. The basal current densities of both TRPM4 (WT) and TRPM4-HA remain consistent.** (A, B) Variations in current densities inhibited by 9-phenanthrol in cells transfected with WT or TRPM4-HA. (C) Dominant inhibition of channel currents at +100 mV compared with −100 mV by impermeable NMDG in both WT- and TRPM4-HA-transfected cells. Statistical analysis revealed significant differences compared with the control, with *p < 0.05, **p < 0.01, ***p < 0.001, ****p < 0.0001. All data are presented as means ± SEM. HA, hemagglutinin; TRPM4, transient receptor potential melastatin 4; NMDG, N-Methyl-D-glucamine; WT, wild-type.




**Supplementary Fig. 2. Determination of an hour elapsed time fit to assess wound healing after initiating the scratch assay with HEK293 cells.** In the left, images taken elapsed hours after the scratching assay performed on cells overexpressed GFP only (left), wild-type TRPM4 (center), and TRPM4-HA (right) are shown. In the right, quantitative charts represent statistical differences for the wound-closures 16, 24, and 40 h after scratching. **p < 0.01, ***p < 0.001, ****p < 0.0001. All data are presented as means ± SEM. HA, hemagglutinin; TRPM4, transient receptor potential melastatin 4.




**Supplementary Fig. 3. Surface expression levels of TRPM4-HA and its YF mutants remain constant.** (A) Surface expression changes in cells expressing YF mutants of TRPM4-HA analyzed by confocal microscopy. No significant differences between TRPM4-HA and all YF mutants. (B) Surface expression images of TRPM4-HA and all YF mutants in the presence of PTPN6 shRNA. Scale bar = 20 μm. HA, hemagglutinin; TRPM4, transient receptor potential melastatin 4; PTPN6, protein tyrosine phosphatase, non-receptor type 6.




**Supplementary Fig. 4. BiFC analysis in cells expressing TRPM4-HA or its YF mutants and PTPN6.** No significant changes were observed in the confocal images (A) or densitometry analysis (B). Scale bar = 10 μm. All data are presented as means ± SEM. HA, hemagglutinin; TRPM4, transient receptor potential melastatin 4; PTPN6, protein tyrosine phosphatase, non-receptor type 6; BiFC, bimolecular fluorescence complementation; WT, wild-type.