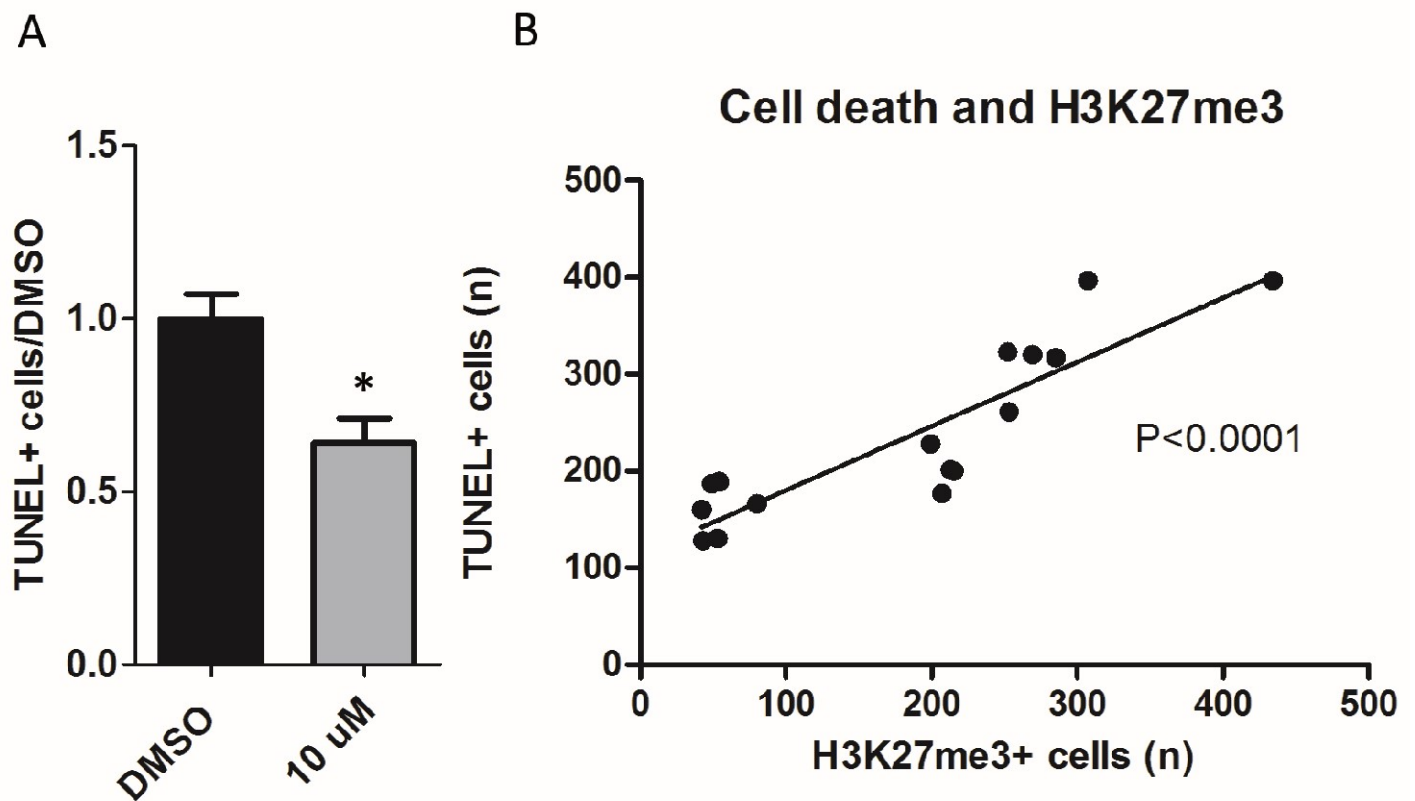


**Figure S1:** Inherited retinal degeneration in the *rcd1* dog is also characterized by H3K27me3 accumulation in the ONL. No accumulation of H3K27me3 mark was detected in the WT retina, whereas cell nuclei in the ONL of the *rcd1* dog contain high level of H3k27me3 (arrows). Note that the H3K27me3 accumulation is already present at 4 weeks of age which is 1 week after the onset of rod loss in this model. ONL = Outer Nuclear Layer



**Figure S2:** EPZ6438 treatment in the *Rd1* eye. (a). EPZ6438 injected at PN8-PN9 in *Rd1* retina reduced the number of TUNEL-positive cells. The mice were injected with 10  $\mu$ M of EPZ6438 and analyzed at PN12. Statistical analysis: Mann Whitney test,  $n = 4$ ,  $p = 0.029$  (\*). (b) All *Rd1* retina used in this study including non-injected retina, retina injected with DMSO, 5 or 10  $\mu$ M of EPZ6438, with injection leakage or not, were analyzed for the potential relation between cell death and H3K27me3<sup>h</sup>-positive cell number. The Pearson correlation analysis clearly shows a strong relationship between decreased level of H3K27me3<sup>h</sup> and cell survival ( $P < 0.0001$ ).