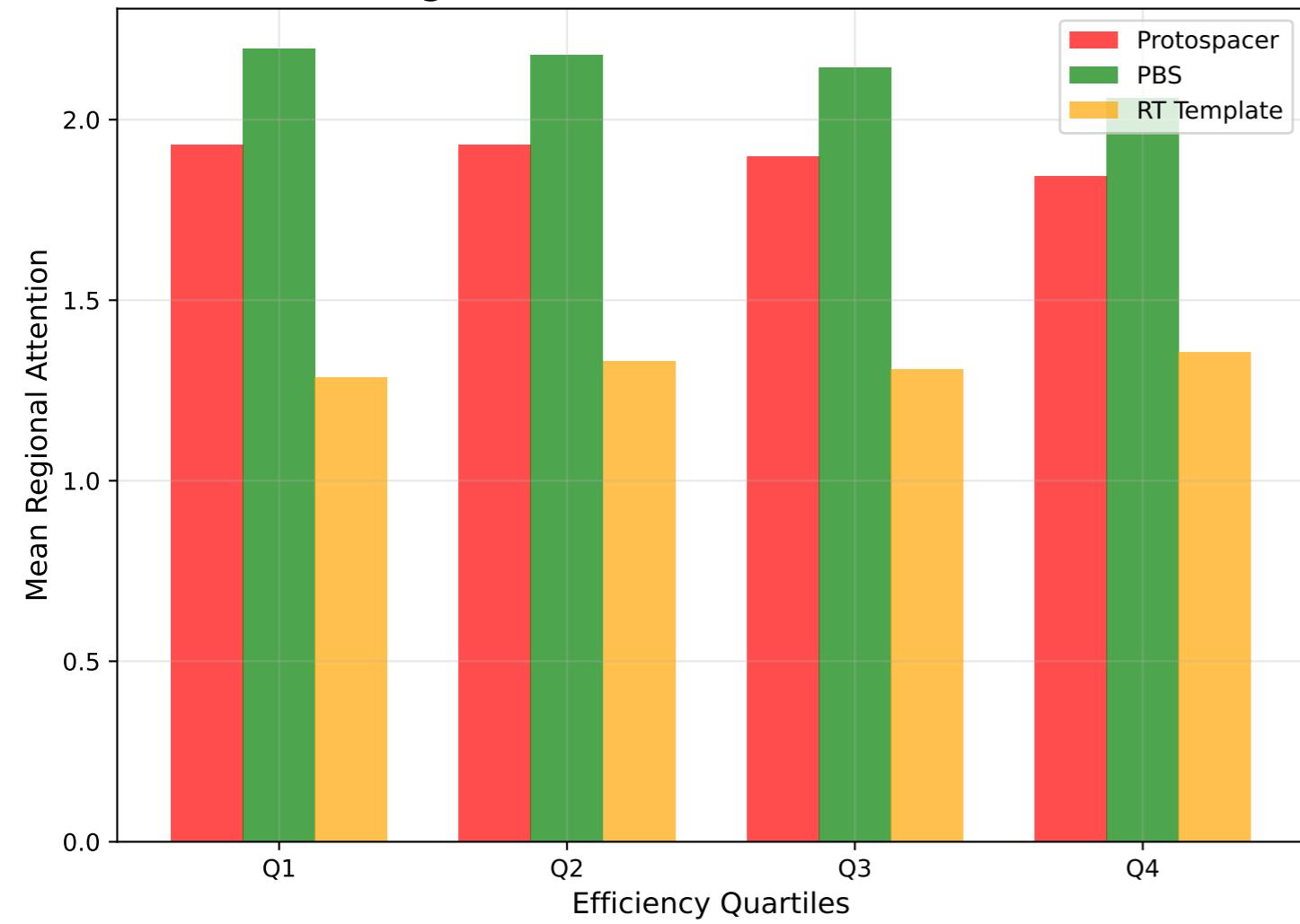
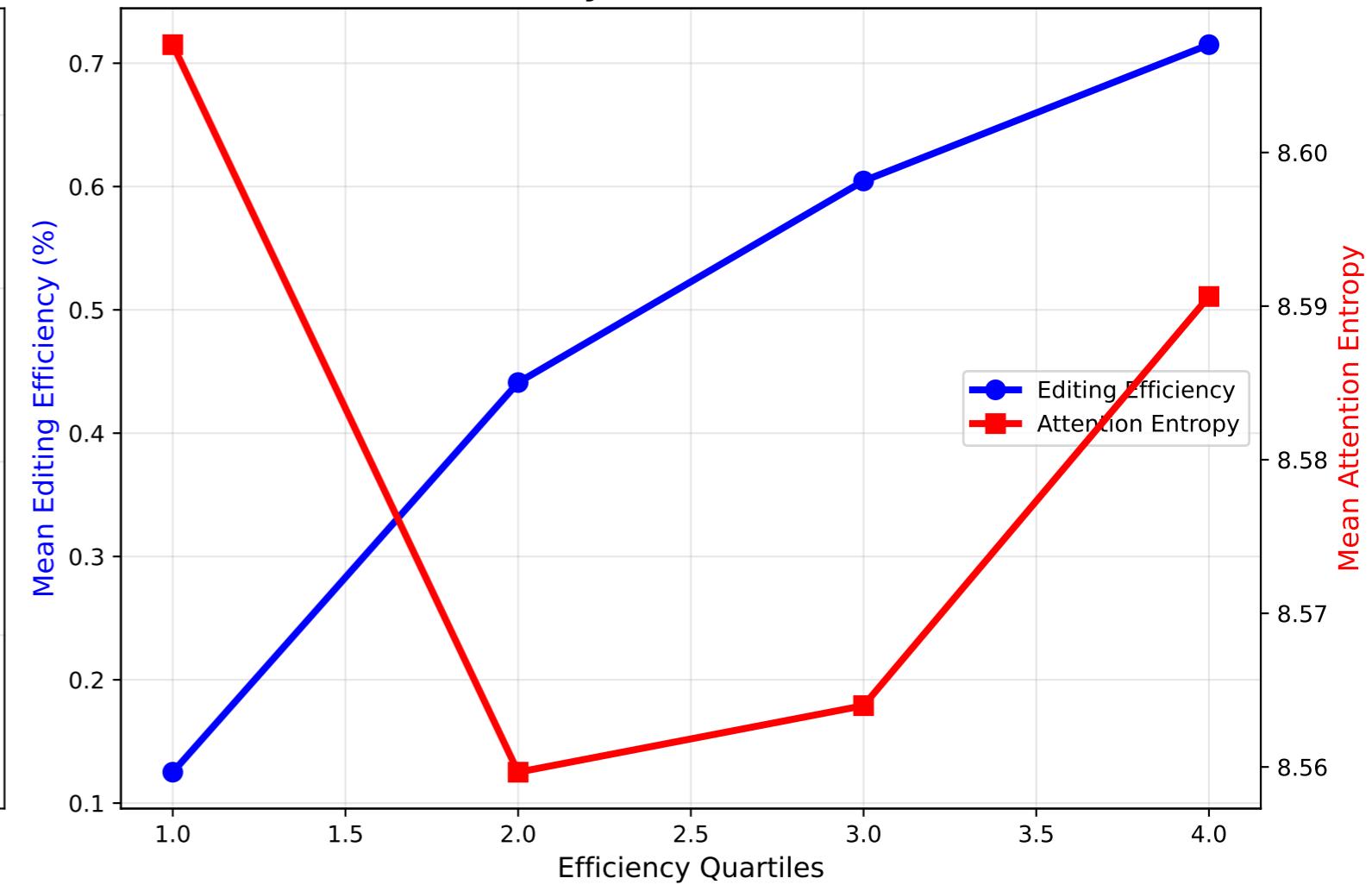


# Detailed Quartile Analysis: Attention Patterns by Editing Efficiency

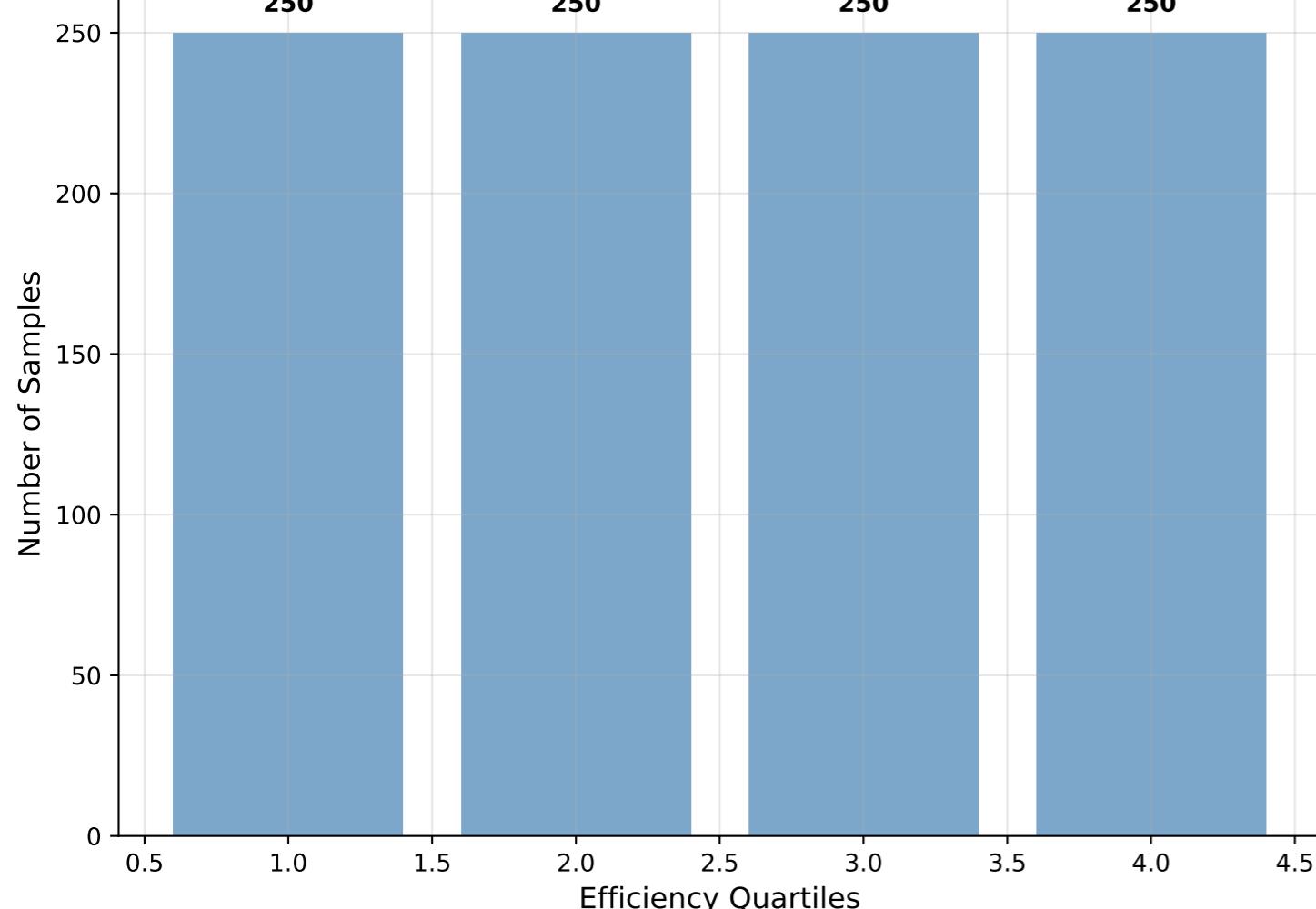
## Regional Attention Across Quartiles



## Efficiency vs Attention Focus



## Sample Distribution Across Quartiles



### KEY BIOLOGICAL INSIGHTS

- ✓ RT Attention  $\leftrightarrow$  Higher Efficiency ( $\rho = +0.106$ )  
Model focuses MORE on editing template regions for successful prime edits
- $\times$  Protospacer Attention  $\leftrightarrow$  Lower Efficiency ( $\rho = -0.113$ )  
Model focuses MORE on target recognition for difficult/unsuccessful sequences
- $\times$  PBS Attention  $\leftrightarrow$  Lower Efficiency ( $\rho = -0.103$ )  
Model focuses MORE on primer binding site for challenging sequences
- Attention Entropy  $\leftrightarrow$  Lower Efficiency ( $\rho = -0.038$ )  
More FOCUSED attention correlates with better editing outcomes

CONCLUSION: crispAIPE has learned biologically meaningful attention strategies!