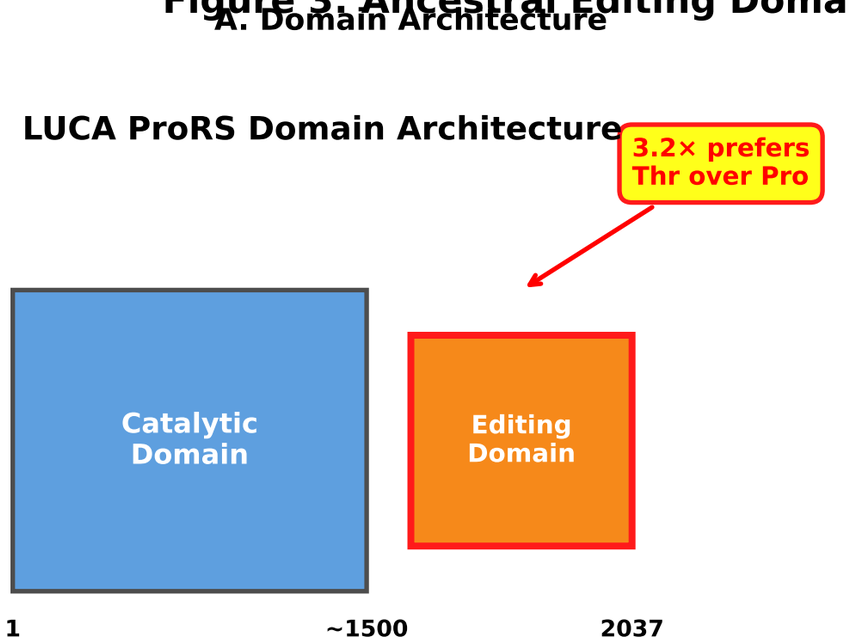
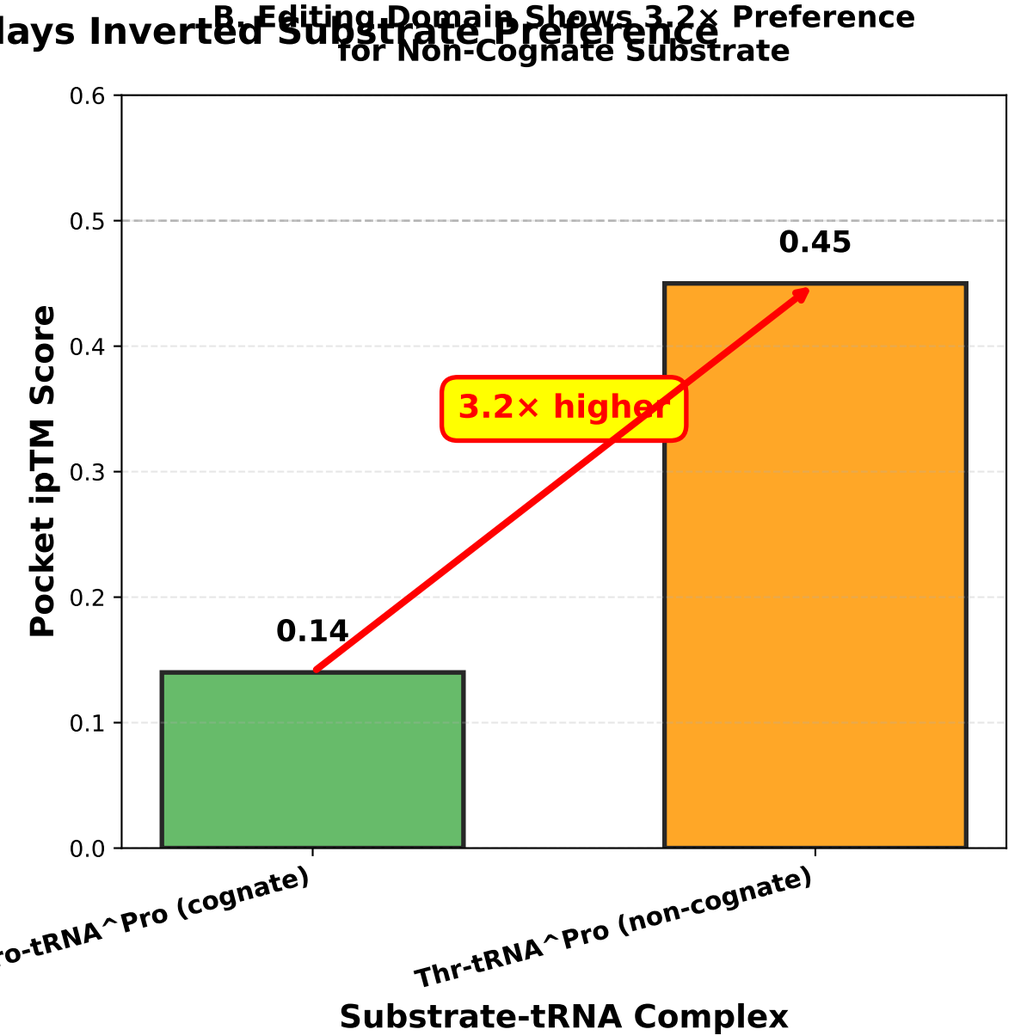
Figure 3: Ancestral Editing Domain Displays Inverted Substrate Preference





INVERTED PREFERENCE:

Editing domain PREFERS the WRONG substrate (Thr-tRNA^Pro) over the correct one (Pro-tRNA^Pro).

This is OPPOSITE to the catalytic domain, which binds both equally (promiscuity).

BIOLOGICAL FUNCTION:
The editing domain's job is to HYDROLYZE mis-acylated tRNA (Thr-tRNA^Pro), so it SHOULD preferentially bind the error product, not the correct product.

This inverted preference validates the editing domain's proofreading function in ancestral ProRS.