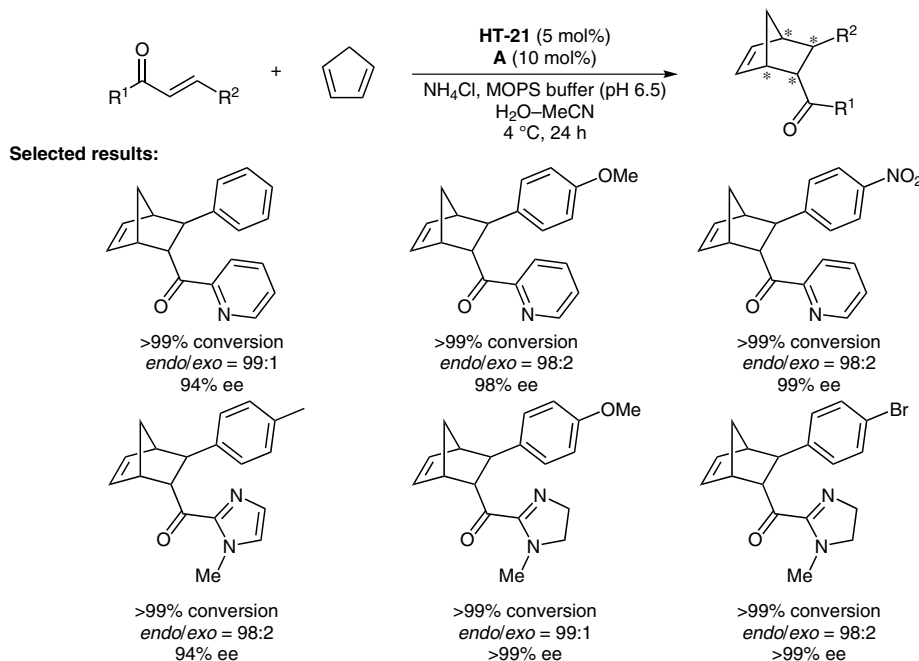
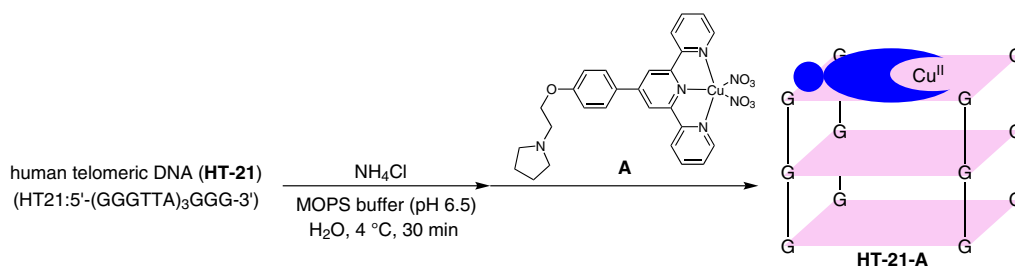


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 Terpyridine-Cu(II) Targeting Human Telomeric DNA to Produce Highly Stereospecific G-quadruplex DNA Metalloenzyme  
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## Copper/DNA G-Quadruplex-Catalyzed Diels–Alder Reaction



**Significance:** A terpyridine–copper(II) complex supported on human telomeric G-quadruplex DNA (**HT-21-A**) was prepared by treatment of **HT-21** with the copper–terpyridine complex **A** in the presence of  $\text{NH}_4\text{Cl}$ . **HT-21-A** catalyzed the enantioselective Diels–Alder reaction of azachalcones with cyclopentadiene to give the corresponding products in >99% conversion,  $\leq 99:1$  *endo/exo* selectivity, and  $\leq 99\%$  ee.

**Comment:** The formation of **HT-21-A** was confirmed by CD-spectroscopic analysis, UV melting, and ITC experiments. In the reaction of 3-phenyl-1-(pyridin-2-yl)prop-2-en-1-one with cyclopentadiene, **HT-21-A** promoted the enantioselective Diels–Alder reaction with about a 73-fold rate acceleration compared with the copper complex **A** alone.

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