## **Supporting Information**

Palladium(II) acetate mediated oxidative cyclization of  $\omega$ -unsaturated  $\alpha$ -cyano ketones for facile construction of methylenecyclohexane ring system

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NMR spectrum of 12



NMR spectrum of 13



NMR spectrum of  ${\bf 14}$ 



NMR spectrum of 15



NMR spectrum of 17



NMR spectrum of 18



NMR spectrum of 19



NMR spectrum of 20



NMR spectrum of 21



NMR spectrum of 22



NMR spectrum of 23



NMR spectrum of  ${\bf 24}$ 



NMR spectrum of 25



NMR spectrum of 26



NMR spectrum of 27



NMR spectrum of 28



NMR spectrum of 29a







NMR spectrum of 30



NMR spectrum of 31



NMR spectrum of **32** 



NMR spectrum of 33



NMR spectrum of 24a



NMR spectrum of 34



NMR spectrum of 35



NMR spectrum of **36** 



NMR spectrum 37



The X-ray crystallographic picture of **24a**, a 2,4-DNP derivative of the major component of **24**, which was deposited as CCDC 851796 in Cambridge Crystallographic Data Centre.

The X-ray crystallographic picture of **28** was deposited as CCDC 851795 in Cambridge Crystallographic Data Centre.

