Supporting information

One pot conjugate addition - trapping of zinc enolates by activated electrophiles.

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General Procedures.

All reactions were conducted under inert atmosphere. All commercially available reagents were used without further purification unless otherwise noted. All solvent were dried on alumina columns and degassed before used. The evolution of reactions was monitored by GC–MS (EI mode). Flash column chromatography was performed with silica gel 32-63 μm , 60 Å. ^1H (400 MHz) and ^{13}C (100 MHz) NMR spectra were recorded in CDCl_3 , and chemical shift (δ) are given in ppm relative to residual CHCl_3 . The high-resolution mass spectra (HRMS) were recorded in the EI (70 eV) mode. Optical rotations were measured at 20 °C in the stated solvent; $[\alpha]_{\text{D}}$ values are given in $10^{-1} \text{ deg cm}^2 \text{ g}^{-1}$. Enantiomeric excesses were determined by chiral-GC (capillary column, 10 psi H_2) or chiral-SFC (Supercritical Fluid Chromatography) with the stated column. Temperature programs are described as follows: initial temperature (°C) - initial time (min) - temperature gradient (°C/min) - final temperature (°C) - final time (min). Gradient programs are described as follows: initial methanol concentration (%), initial time (min), percent gradient of methanol (%/min), final methanol concentration (%). Retention times (R_{T}) are given in min. Ligand **L1** and starting substrates **2** and **4** were prepared according to the literature. The preparation of **1**, **3**, and **5** was slightly modified as follows.

3-(5,5-dimethylpropanoate)-2-propenyl-diethylphosphonate (5):¹H-NMR of **5**

Sebastien PROTON CDCl3 u guest 3

¹³C-NMR of 5

Sebastien - C13CPD CDCB u guest 3

³¹P-NMR of **5**

Sebastien: P3ICPD2 CDCl3 u guest 3

allyl(p-tolyl)sulfane:

¹H-NMR

¹³C-NMR

¹³C CPD-Spectrum

1-(9,10-Dibromo-propane-8-sulfonyl)-4-methyl-benzene:

¹H-NMR

¹³C-NMR

1-(9-Bromo-prop-8-ene-8-sulfonyl)-4-methyl-benzene (3):¹H-NMR of **3**

^{13}C -NMR of **3**

(3)-ethyl-(2)-[(8-nitro)-allyl]-cyclohexanone (8a):Chiral-SFC of compound **8a**

¹H-NMR of **8a**

^{13}C -NMR of **8a**

ethyl 2-((2-ethyl-6-oxocyclohexyl)methyl)acrylate (8b):

Chiral-GC of compound **8b**

Chiral-GC of compound **8b**

¹H-NMR of **8b**¹H Spectrum

^{13}C -NMR of 8b ^{13}C CPD-Spectrum

3-ethyl-2-[8-toluene-10-sulfonyl]allyl]-cyclohexanone (8c):

Chiral-SFC of compound 8c

¹H-NMR of **8c**¹H Spectrum

^{13}C -NMR of 8c ^{13}C CPD-Spectrum

(3-methyl-(2)-[(8-nitro)-allyl]-cyclohexanone (12a):Chiral-SFC of compound **12a**

¹H-NMR of **12a**¹H Spectrum

¹³C-NMR of **12a**:

MARCH C13CPD CDCL3 u guest 2

ethyl 2-((2-methyl-6-oxocyclohexyl)methyl)acrylate (12b):

Chiral-GC of compound **12b**

¹H-NMR of 12b¹H Spectrum

¹³C-NMR of **12b**:

C13 Spectrum

3-methyl-2-[8-toluene-10-sulfonyl)allyl]-cyclohexanone (12c):

Chiral-SFC of compound **12c**

¹H-NMR of 12c

^{13}C -NMR of **12c** ^{13}C CPD-Spectrum

(3)-ethyl-(2)-[(9-nitro)-allyl]-cycloheptanone (15a):Chiral-SFC of compound **15a**

¹H-NMR of **15a**¹H Spectrum

^{13}C -NMR of **15a** ^{13}C CPD-Spectrum

ethyl 2-((2-ethyl-7-oxocycloheptyl)methyl)acrylate (15b):

Chiral-GC of compound **15b**

¹H-NMR of **15b**¹H Spectrum

¹³C-NMR of **15b**¹³C CPD-Spectrum