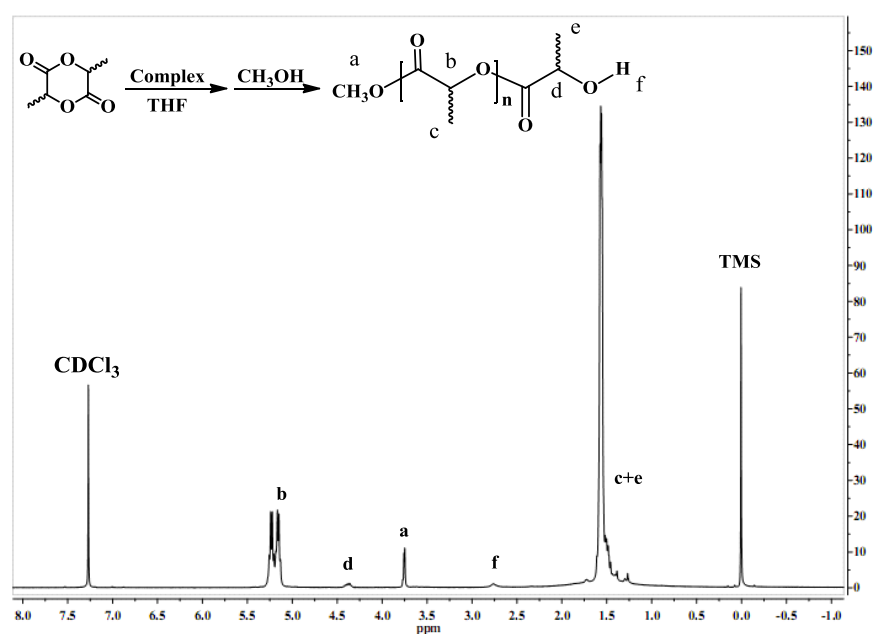


# New [ONOO]-Type Amine Bis(phenolate) Ytterbium(II) and (III) Complexes: Synthesis, Structure and Catalysis for Highly Heteroselective Polymerization of *rac*-Lactide

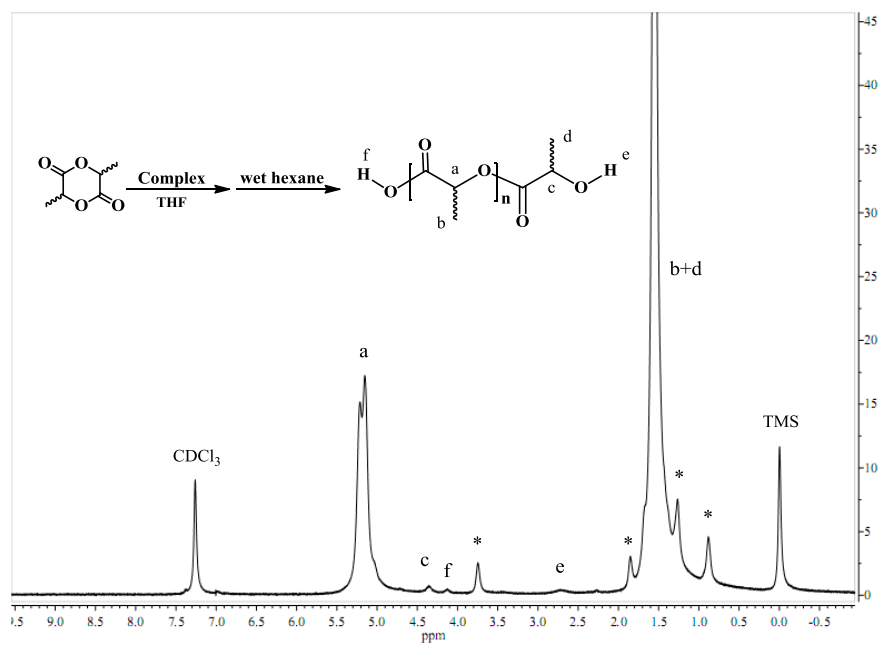
Sheng Yang, Kun Nie, Yong Zhang, Mingqiang Xue, Yingming Yao, and Qi Shen\*

## Supporting Information

### Representative Analytical Data of Products



**Figure S1.** <sup>1</sup>H NMR spectrum of the oligomer of *rac*-LA obtained from ROP initiated by complex **1** and quenching with CH<sub>3</sub>OH. Conditions: [LA]<sub>0</sub>/[Yb]<sub>0</sub> = 15, CDCl<sub>3</sub>, THF, 25°C.



**Figure S2.**  $^1\text{H}$  NMR spectrum of the oligomer of *rac*-LA obtained from ROP initiated by complex **1** and quenching with wet hexane (\*, free hexane and THF signals). Conditions:  $[\text{LA}]_0/[\text{Yb}]_0 = 15$ ,  $\text{CDCl}_3$ , THF,  $25^\circ\text{C}$ .

# New [ONOO]-Type Amine Bis(phenolate) Ytterbium(II) and (III)

## Complexes: Synthesis, Structure and Catalysis for Highly

### Heteroselective Polymerization of *rac*-Lactide

Sheng Yang, Kun Nie, Yong Zhang, Mingqiang Xue, Yingming Yao, and Qi Shen\*

#### Graphical Abstract

New Yb<sup>II</sup> complexes **1** and **2** supported by [ONOO]-type amine bis(phenolate) ligands L<sup>a,b</sup> and Yb<sup>III</sup> complexes **4** and **5** with ligands L<sup>c</sup> and L<sup>d</sup> were prepared. Complexes **1** and **4** were found to be extremely active for controlled ROP of *rac*-LA. Complexes **1**, **4** and **5** exhibited high stereoselectivity to give heterotactic polylactide with *Pr* ranging from 0.97 to 0.99.

