Zinc complexes supported by methyl salicylato ligands: synthesis, structure, and application in ring-opening polymerization of L-lactide.

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Streszczenie

Two novel zinc alkoxides supported by chelating methyl salicylato (MesalO; MesalOH = methyl salicylate) ligands were successfully synthesized and characterized. Reaction of MesalOH with $ZnEt_2$ (2 : 1) gives a tetranuclear cluster $[Zn(MesalO)_2]_4$ (**1**), which by addition of pyridine is transformed to the mononuclear compound $[Zn(MesalO)_2(py)_2]$ (**2**). Compounds **1** and **2** were characterized by elemental analysis, NMR, IR, and single crystal X-ray diffraction. The catalytic activity of both compounds was tested for the ring-opening polymerization (ROP) of L-lactide (L-LA). It was found that compounds **1** and **2** are efficient initiators of the ROP of L-LA, yielding cyclic PLLA with weight average molecular weights up to 100 kDa for **2**. The treatment of **2** with 1 equiv. of BnOH in toluene afforded a dimeric compound $[Zn(OBn)(MesalO)(py)]_2$ (**3**). The addition of L-LA to a combination of **1** and 4 equiv. of BnOH in THF or **2** and 1 equiv. of BnOH in toluene led to the rapid and efficient generation of PLLA with end-capped BnO groups.

Adres publiczny

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Strona internetowa wydawcy

https://www.rsc.org/