

## Selective end-group functionalisation of poly(lactide)s prepared by living ring opening polymerisation

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The synthesis of poly(ester)s by the living ring opening polymerization (ROP) of cyclic esters is an excellent way of producing polymers with very high levels of control over a range of parameters including molecular weight, polydispersity and stereochemistry.<sup>1</sup> In addition to the control over the chain length, living polymerization techniques enable the control over polymer chain functionality.

Metal complexes have been reported to be able to exert very high levels of control over the ROP of cyclic esters. Of these, the application of aluminum complexes bearing salen/salan ancillary ligands have been shown to be an extremely versatile family of compounds with subtle changes in ligand structure leading to enhanced control over tacticity of polymers produced.<sup>2-7</sup> These catalysts are particularly attractive as the application of the simply derived aluminum methyl complexes with an alcohol results in the *in situ* generation of initiating species allowing control over  $\alpha$ -chain end by choice of initiating alcohol.<sup>6,7</sup> Quenching the polymerization with an acid chloride has been demonstrated to lead to facile reaction with the propagating alkoxide chain end such that *in situ*  $\omega$ -chain end modification to produce the corresponding ester end group occurs with elimination of the metal chloride complex (Figure 1).

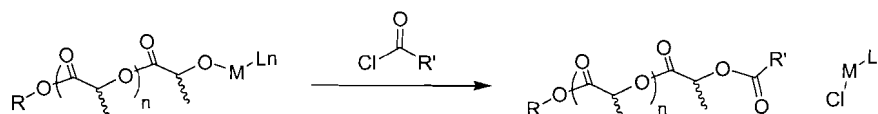


Figure 1. Reaction of propagating alkoxide chain end with an acid chloride.

### References

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