

SYNTHESIS OF A NEW LACTOSE OXIME BASED POLYMER

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Abstract

This project describes a new convenient, two-step synthesis, of aminoxy alkylamines **52-54**. The first step involved the preparation of protected aminoxy alkylamines **47**, **49** and **51**, which were deprotected to give the corresponding aminoxyalkylamines. The structures of compounds were confirmed by IR, $^1\text{H-NMR}$ and $^{13}\text{C-NMR}$. Aminoxyalkylamines have been found to be a potent inhibitors of several enzymatic pathways. In the present work our aim is to synthesis new lactose oxime based polymers, in which aminoxyalkylamines act as space arm between lactose moiety and the terminal polymerizable double bond.

New lactose oximes **56** and **57** were prepared by reacting the corresponding aminoxyalkylamines with lactose. The last mentioned oximes were reacted with acryloyl chloride to produce the corresponding lactose-O-acrylamidoalkyl oximes **58** and **59** (lactose monomers). The structures of oximes and monomers were confirmed by IR, $^1\text{HNMR}$, $^{13}\text{CNMR}$ and FAB MS.

Lactose polymer **60** was prepared from the free radical polymerization of **59** in aqueous solution. The average molecular weight of the polymer is 40,000 gm/ mole as determined by gel permeation chromatography.

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Chapter one

Introduction