Synthesis and Radical Addition of Xanthates Bearing Oxime Functionality

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Organic xanthates are widely used in synthesis due to the radical addition reaction. There are many examples of using xanthates with different functional groups (e.g. carbonyl, phosphoryl, etc.) in literature, but there is no information on using oxime functional group. Nevertheless a-oxime-xanthates could be used as building blocks during the synthesis of different chemical compounds, e.g. polysubstituted amines that may be important for pharmacology. First part of our project was based on synthesis of two types of oxime-xanthates: acyclic oxime ethers and cyclic oxime ethers (1,2-oxazines). For the synthesis of acyclic oxime ether we used bromoacetophenone. Bromine was substituted by xanthate and then oximation was performed. The oxazine synthesis strategy is based on [4+2] cycloaddition, following by synthesis of 3-halomethyl-1,2-oxazine and substitution with potassium ethyl xanthate. Second part was based on performing radical addition reaction on our oxime ethers. Organic peroxides were used as catalysts. We tried allyl acetate and vinyl acetate as reaction partners. The structures of obtained compounds were confirmed by 1H and 13C NMR spectroscopy and high-resolution mass-spectrometry.

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