Heterocyclic compounds – synthesis and biological studies (MRP(S)-0630/13-14/KLCA030/UGC-SWRO)

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Abstract

A modified procedure for the synthesis of curcuminoid with significant improvement in yield, reaction time and purity of isolated product is introduced. It is now possible to completely avoid the use of boron oxide, boric acid and trialkoxyborates in the procedure for the synthesis of curcuminoids. All the compounds were characterised using NMR techniques. Selected curcuminoids were screened for anti microbial activity.

Key words: Curcuminoids, boron free, acetylacetone and antimicrobial.

CONCLUSION

We have introduced a new and novel method for the preparation of curcuminoids, without the use of boron compounds. It was found that the C-3 position of acetyl acetone is protected and prevented from reactions thereby avoiding unnecessary products. The method was found to be more acceptable with increased yield and use of less hazardous solvents. Lack of the use of any metal catalysts and the use of greener solvents implies that the current procedure is the greener approach. The products were identified using spectral techniques and also by comparing the melting point with the reported values. Most of the synthesised compounds exhibited antimicrobial activity comparable to the reference standard.