# A simple access to Vicinal Tricarbonyl Compounds from Morita-Baylis-Hillman adducts

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## INTRODUCTION

Vicinal tricarbonyl compounds are important synthetic building blocks and have attracted the attention of many organic chemists due to the presence of highly active central carbonyl group.[1]

These compounds are useful precursors to elaborate heterocyclic compound and biologically important substances.[1,2,3] (Figure 1).

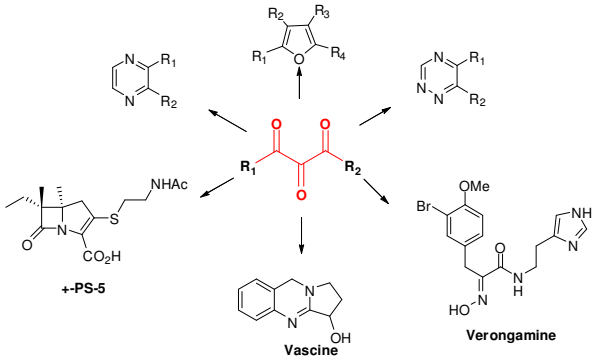
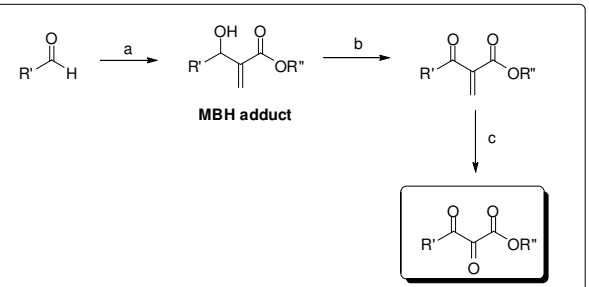



**Figure 1**

## RESULTS AND DISCUSSION

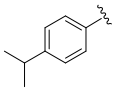
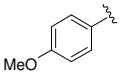
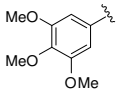
The study began with a synthesis of MBH adducts using a protocol developed by our research group.[4] After that MBH adducts were oxidized with 2-iodoxibenzoic acid (IBX) in acetonitrile providing 1,3-dicarbonyl compounds in excellent yields (Table 1). The derivatives were placed under ozonolysis conditions, using methanol as solvent at -78°C (Scheme 1).




Reagents and Conditions: a) DABCO, Methyl acrilate, ta; b) IBX, $CH_3CN$, 70°C; b) i. $O_3$, MeOH or $CH_2Cl_2$, -78°C; ii. $(CH_3)_2S$

**Scheme 1**

Table 1: Yields for each stage of our approach

| Entry | R' | R'' | Yield (%) | | |
|---|---|---|---|---|---|
| | | | a[a] | b | c[a] |
| 1 |  | Me | 98 | 72 | 20 |
| 2 |  | Me | 83 | 90 | 57 |
| 3 |  | Me | 66 | 98 | 76 |
| 4 |  | Me | 70 | 94 | 20 |
| 5 |  | Me | 71 | 100 | 10 |

[a] Isolated yields after silica gel column chromatography

## CONCLUSION

Vicinal tricarbonyl compounds are important and versatile intermediate of widespread application in organic synthesis. The described methodology is simple and allows the access to vicinal tricarbonyl compounds in three steps with an overall yield range from 7 to 49%. This approach is a gentler and fast alternative compared to existing methods allowing the preparation of this structural pattern.

## ACKNOWLEDGEMENTS

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