# Directed Magnesiation of Haloaromatic Oxazolines using the mixed lithium/magnesium base TMPMgCl.LiCl

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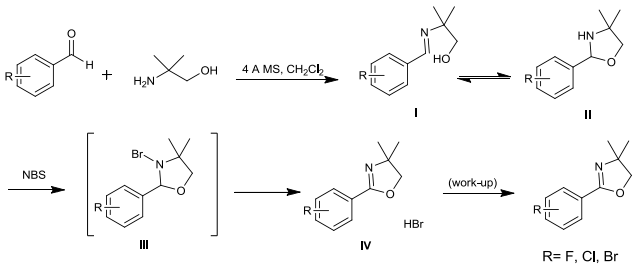
## INTRODUCTION

The metallation of aromatics is a convenient approach to the functionalization of unsaturated scaffolds[1]. Polyfunctional aryl halides are of high importance as agrochemicals, pharmaceuticals and building blocks[2]. Recently, mixed lithium/magnesium amides such as TMPMgCl.LiCl and $TMP_2Mg.2LiCl$ have proven to be interesting bases for functionalization of arenes under mild conditions[3]. In this work we wish to report the use of magnesium amides for the magnesiation of several haloaromatics oxazolines and subsequent reactions with electrophiles.

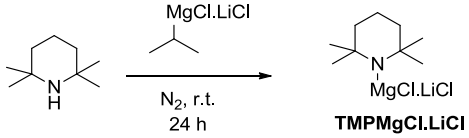
## RESULTS AND DISCUSSION

The oxazolines were prepared by condensation of aldehydes with aminoalcohol, providing the products with yields ranging from 75 to 90% (Scheme 1).



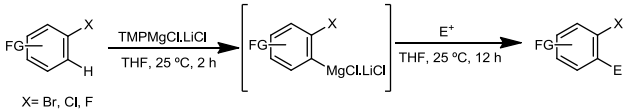

**Scheme 1**: Preparation of oxazolines.

The mixed Li/Mg base was obtained through the direct reaction of 2,2,6,6-tetramethylpiperidine (TMPH) with *i*-PrMgCl.LiCl (Scheme 2).




**Sheme 2**: Preparation of TMPMgCl.LiCl

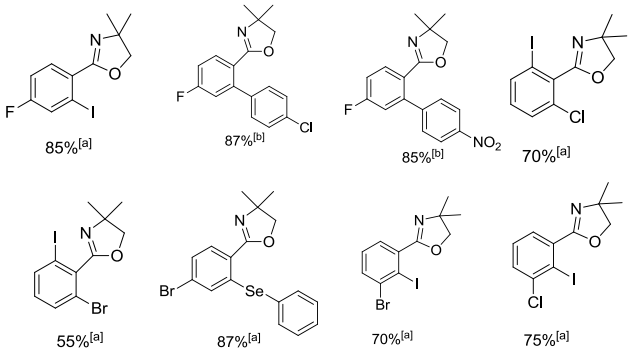
The magnesiation of haloaromatics oxazolines with TMPMgCl.LiCl was achieved within 2 h at room temperature. Further reaction several electrophiles led to the expected functionalized oxazolines in good yields (Scheme 3, Table 1).




24 examples

**Scheme 3:** Magnesiation of oxazolines

**Table 1.** Products obtained after directed magnesiation of oxazolines




[a] Yield of isolated, analytically pure product.
[b] A transmetalation with $ZnCl_2$ (1.1 equiv.) and Pd-catalyzed cross-coupling using 2 mol% $Pd(dba)_2$ 4 mol% and tfp were performed.

## CONCLUSION

The metallation of haloaromatic oxazolines using TMPMgCl.LiCl was successfully achieved under mild conditions. The resulting Grignard reagents can be combined with a large number of electrophiles to provide highly functionalized oxazolines in good yields.

## ACKNOWLEDGEMENTS

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