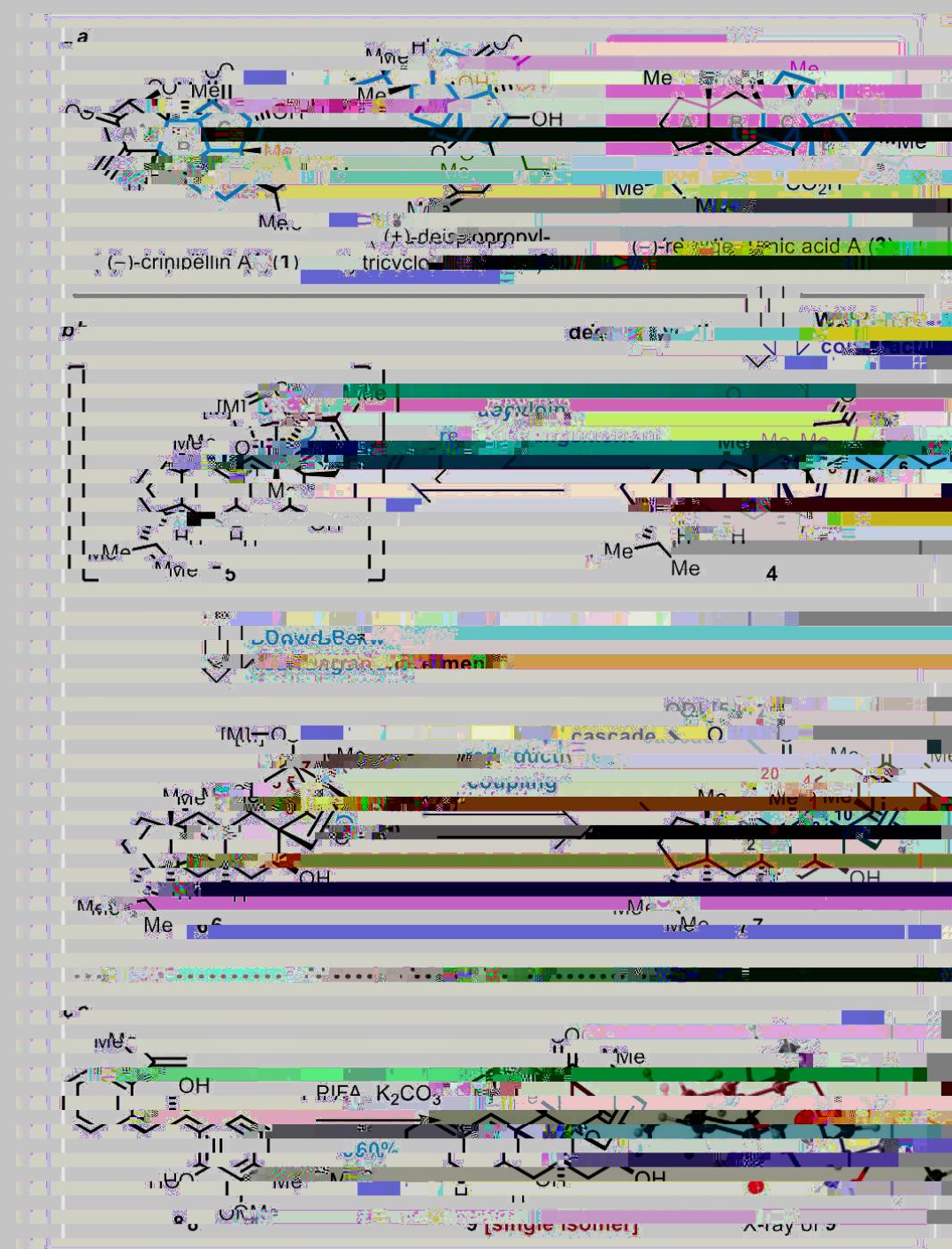


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# Retrosynthetic Analysis



**Table 1. Optimization of the Reductive Alkylation**



Run	Reaction Conditions	Yield (%)	Yield (%)
1 <sup>d</sup>	$n\text{-Bu}_3\text{BiCl}_2$ , AlBN, toluene, 90 °C	0	0
2 <sup>d</sup>	$\text{TiCl}_4$ , Zn, THF, 90 °C	0	0
3 <sup>d</sup>	$\text{VCl}_4$ (THF), Zn, $\text{CH}_2\text{Cl}_2$ , 25 °C	0	0
4	$\text{CSm}_2$ , THF, 25 °C	35	0
5	$\text{CSm}_2$ , THF, $\text{Me}_2\text{S}$	35	0
6	$\text{CSm}_2$ , THF/ $\text{Et}_2\text{O}$ , 25 °C	75	0
7	$\text{CSm}_2$ , THF, 70 °C	70	0
8	$\text{CSm}_2$ , THF/ $\text{Et}_2\text{O}$ , 90 °C, then KOH	35	65

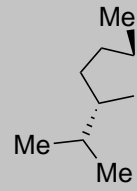
<sup>d</sup> Reaction conditions: 10a (0.5 mmol) and R<sub>2</sub>NH (1.0 mmol, 2.0 equiv) in solvent/ cosolvent (4.5 mL/ 7.0 mL) at 25 °C for 24 h. No reaction for 10a (3a) and 10b (3b) under the same conditions.

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$C'' < 0;$



;RO: )&(')O&+

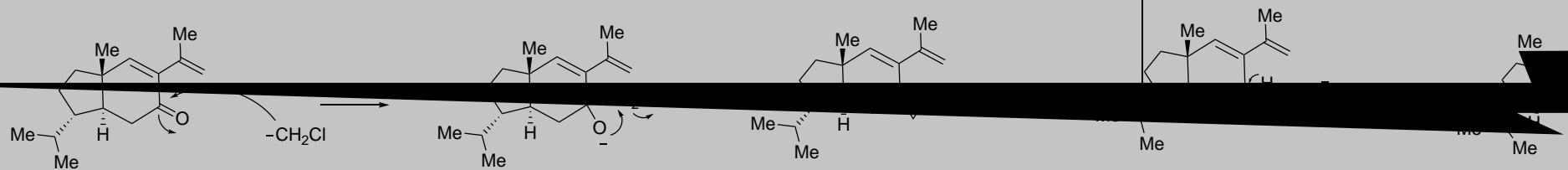
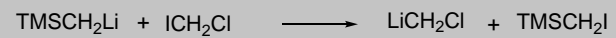
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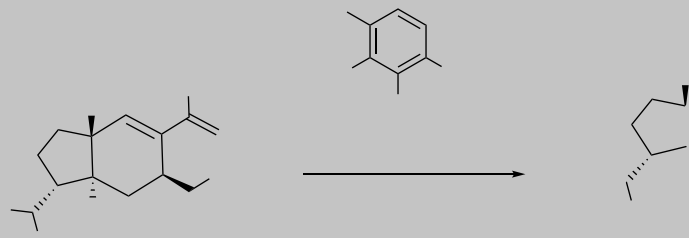
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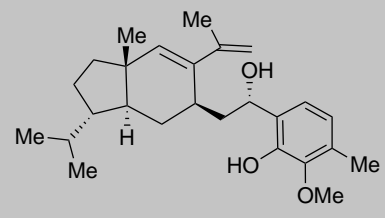


S#) < "\$)Q(')O&+



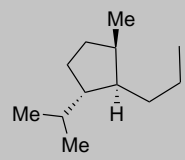




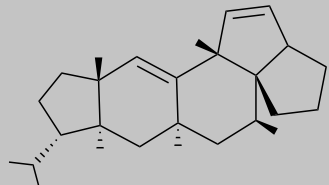


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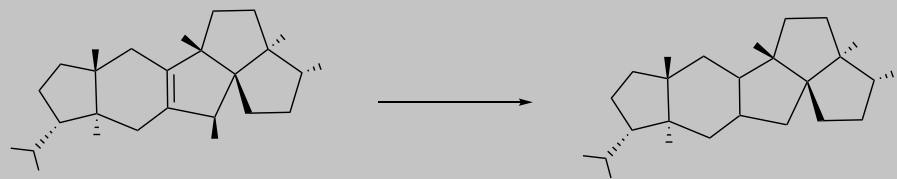
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Thanks!  
Questions?