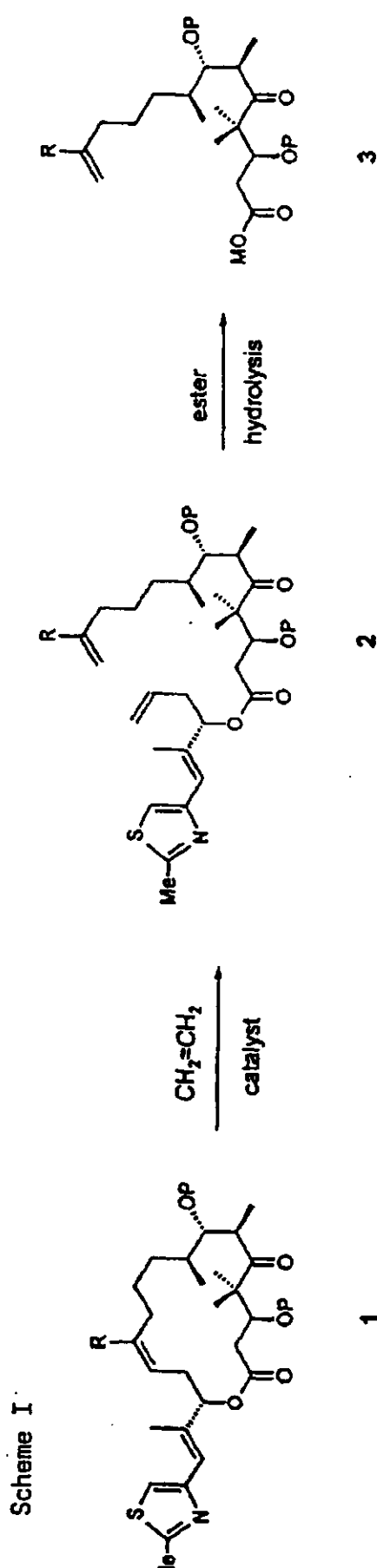


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R = H, Methyl

P = H, protecting group e.g. trialkylsilyl

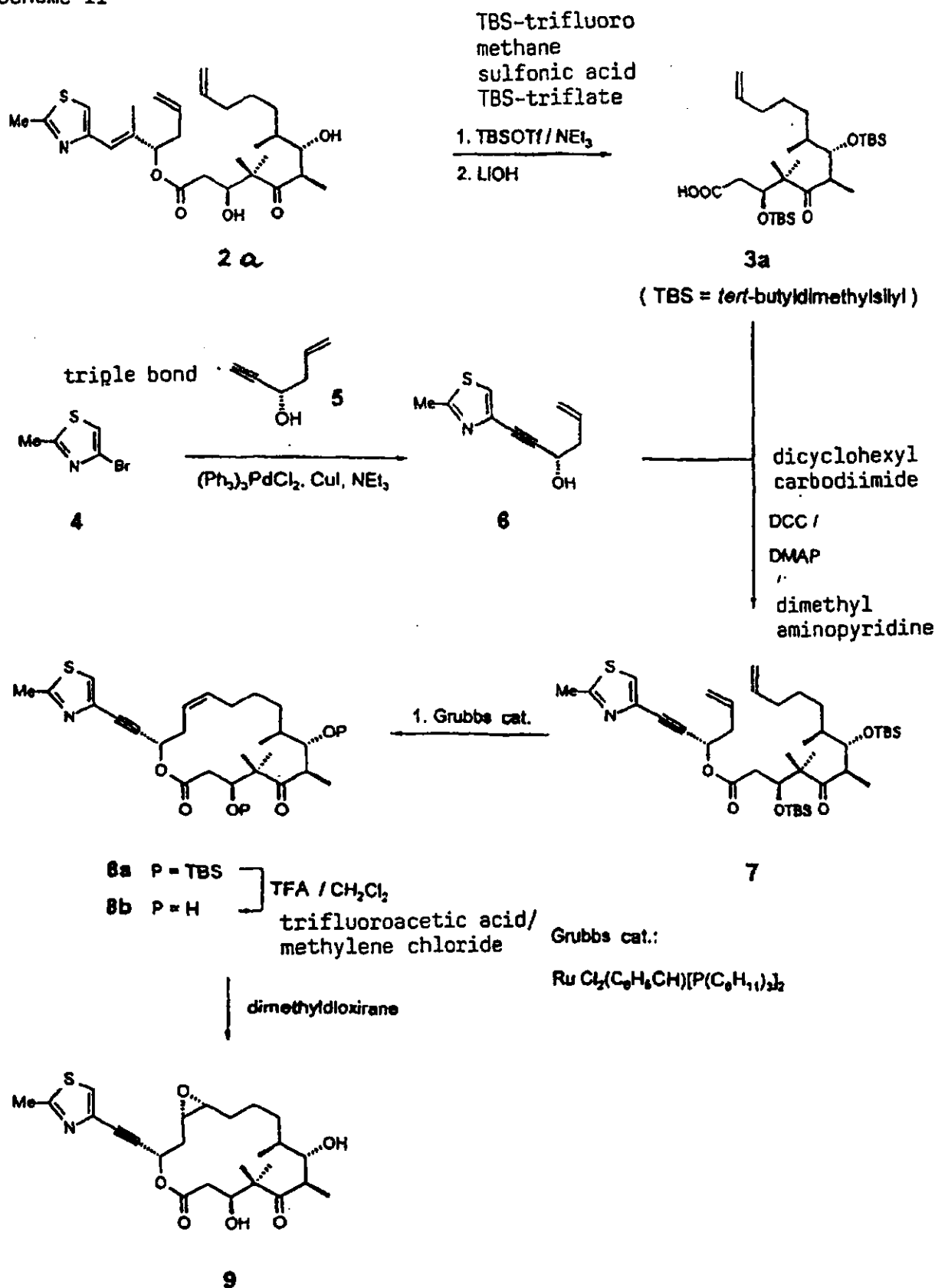
M = alkali metal, H

catalyst = e.g. Ru, Mo metathesis catalysts

ester hydrolysis by base or hydrolytic enzymes, e.g. pig liver sterase

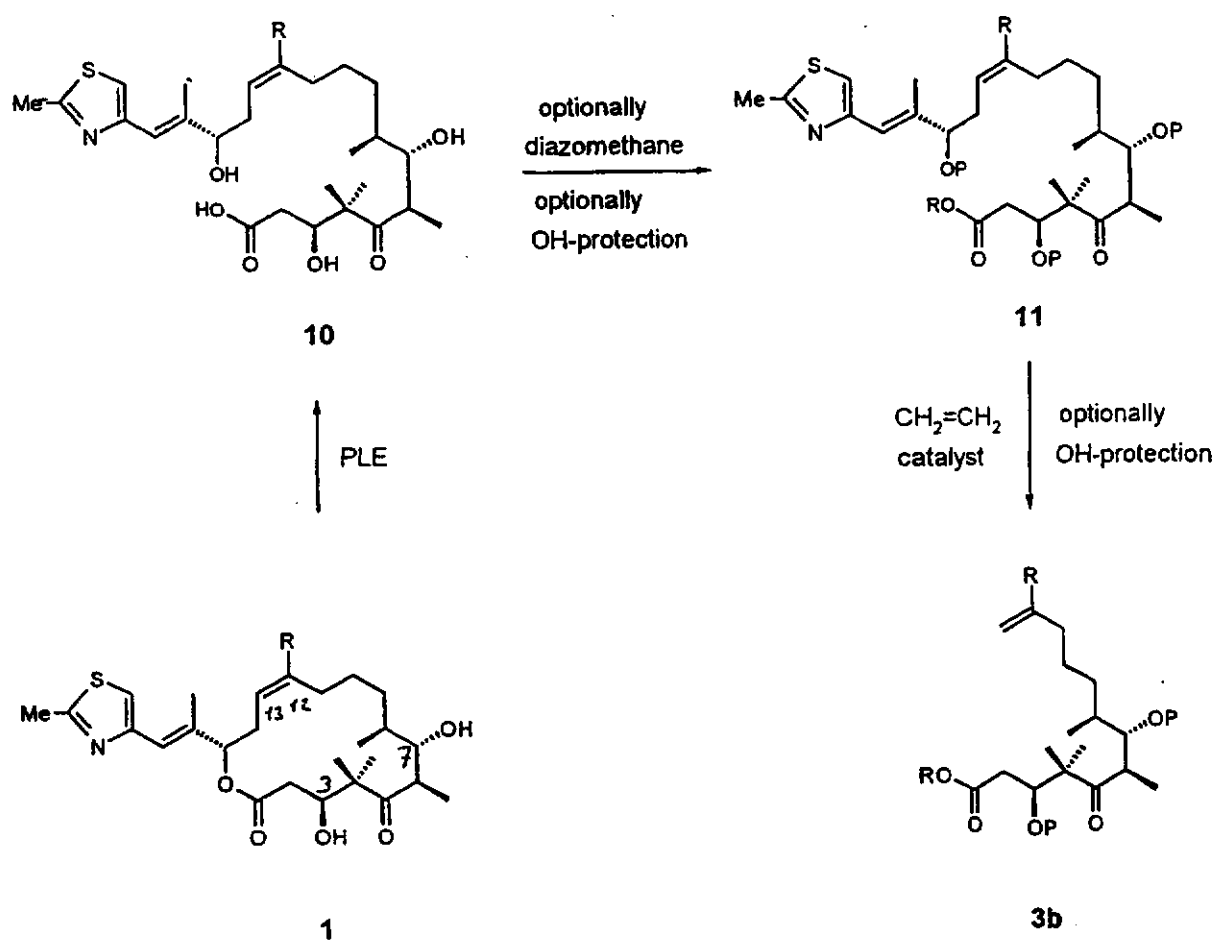
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Scheme II



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Scheme III



R = H, Methyl

P = H, protecting group e.g. trialkylsilyl, p-methoxybenzyl

catalyst = e.g. Ru, Mo metathesis catalysts

ester hydrolysis by base or hydrolytic enzymes, e.g. pig liver sterase