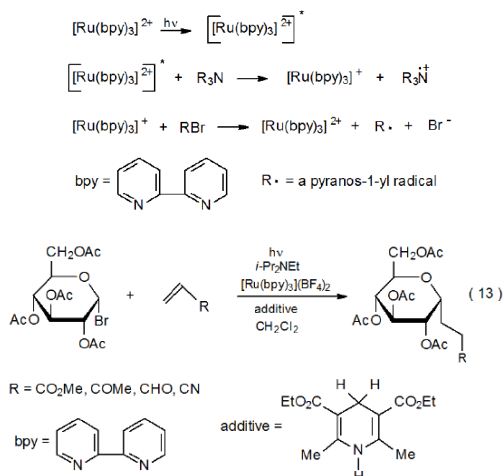


III. Electron Donation by a Ruthenium Complex

Ruthenium is a transition metal that, like titanium, can transfer an electron to a glycosyl halide. Photochemical reaction of $[\text{Ru}(\text{bpy})_3]^{2+}$ with a tertiary amine produces $[\text{Ru}(\text{bpy})_3]^+$, a complex that then donates an electron to a glycosyl bromide to form a pyranos-1-yl radical (Scheme 10).^{29,30} The radical formed in this way from the bromide **20** is capable of adding to a variety of electron-deficient alkenes (eq 13). The role of the additive in this reaction is to improve product yield by suppressing oligomerization.²⁹

Scheme 10



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