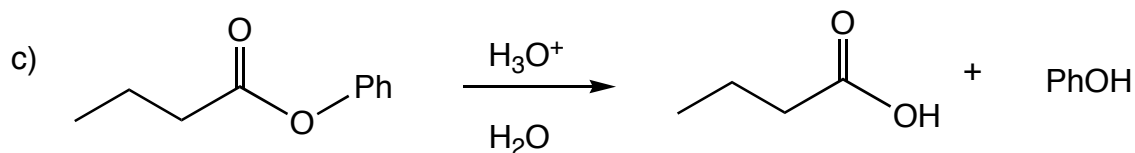


4. continued



5. (24 points) An unknown compound, A, has a formula $\text{C}_6\text{H}_8\text{O}$ and shows a singlet methyl in its ^1H NMR spectrum. When treated with hydrogen gas and palladium it absorbs 1 equivalent of H_2 to give a product, B, with the formula $\text{C}_6\text{H}_{10}\text{O}$. The infrared spectrum of compound B shows that it has a carbonyl group. Compound B reacts with NaOD in D_2O to give a product shown by mass spectrometry to have the formula $\text{C}_6\text{H}_7\text{D}_3\text{O}$. Compound B reacts with peroxyacetic acid, $\text{CH}_3\text{CO}_3\text{H}$, to give C, which has the formula $\text{C}_6\text{H}_{10}\text{O}_2$. The ^1H NMR spectrum of C contains one and only one absorption due to a CH_3 group, a doublet with $J = 8$ Hz at $\delta = 1.2$ ppm. Propose structures for compounds A, B, and C.

A	B	C
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