

containing 25% benzene gave an oily material which included about 3% of active luciferin IV as judged by luminescence assay with luciferase. Thin layer chromatography with hexane containing 20% 1,2-dichlorohexane revealed only two substances in the oily material; one with $R_f = 0.48$, identical with that of aldehyde III, and the other with $R_f = 0.51$, identical with that of luciferin IV. The two were satisfactorily separated in this manner on a thicker layer of silicic acid using the same solvent pair.

The mass spectrum (70 eV, indirect sample introduction, M^+ : m/e 236) of the synthetic enol formate IV was identical with that of natural luciferin; both spectra show minor peaks characteristic of aldehyde III (M^+ : m/e 208), which, as noted earlier¹, results from the breakdown of the unstable luciferin both during and prior to mass spectrographic analysis. Synthetic IV was active in light emission with Latia luciferase.

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