

Abstract

The oxidation of the drug pindolol, [1-(indol-4-yloxy)-3-(isopropylamino)-2-propanol (**I**)] by permanganate in the medium of aqueous H₂SO₄ is accompanied by the emission of chemiluminescence (CL) radiation. The CL signal is enhanced by hexametaphosphate. This CL reaction was used for devising automated sequential injection analysis (SIA) assay of **I** in pharmaceutical preparations. The PC-controlled SIA setup consisted of a Cavro XL 3000 2.5-ml syringe pump, Vici-Valco 10-port selection valve and Spectra-Physics FS970 flow-through fluorescence detector equipped with a lab-made CL detection module. The net CL signal of **I** increased by a factor of 4.4 (compared to purely aqueous test solution of **I** injected) if the test solution contained 80% (v/v) of methanol. Optimal order, concentrations and volumes of aspirated zones of reactants were: 43 μl of 80mM Na hexametaphosphate, 30 μl of **I** in 80% (v/v) methanol, 28 μl of 2M H₂SO₄ and 1 μl of 5mM KMnO₄. Calibration curve relating the intensity of CL (peak height) to the concentration of **I** was linear in the range 1 - 10 μM **I**; the limit of detection (S/N = 3) was 0.15 μM **I**. The sample throughput was 90 h⁻¹. The repeatability of the peak heights was characterized by RSD 1.8% for 30 replicate injections of 8 μM **I**. The SIA-CL method was used for the assay of **I** in APO-PINDOLOL 5mg tablets (including content uniformity test). The mean value found was 4.67 mg of **I** with RSD 1.6% (n = 6). The result did not show any statistically significant difference from that found by a reference HPLC method [1].