

Determination of *N*-Acetylcysteine in Tablets by Means of Chemiluminescence Inhibition Method

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The technique for quantitative determination of N-acetylcysteine in pharmaceutical preparations using a new chemiluminescence inhibitor – N-acetylcysteine in the system H_2L (luminol)– H_2O_2 –Hemoglobin was developed. The objects of research were tablets containing N-acetylcysteine. The method of N-acetylcysteine quantitative determination in pharmaceuticals based on the inhibition of chemiluminescence in the system H_2L – H_2O_2 –Hemoglobin was developed. The calibration curve was linear over the concentration range 0.06 – 0.82 $\mu\text{g/mL}$, LOD (3S) = 0.02 $\mu\text{g/mL}$, LOQ (10S) = 0.06 $\mu\text{g/mL}$. No interferences were observed in the presence of common components of the tablets such as microcrystalline cellulose, lactose monohydrate, corn starch, magnesium stearate, Opadry II 85F28751 White, polyethylene glycol 6000, polyvinyl alcohol, talc, titanium dioxide (E 171), citric acid, sodium bicarbonate, lemon flavor, adipic acid, povidone and aspartame (E 951). RSD = $\pm 1.45\%$ ($\delta = -1.05\%$), RSD = $\pm 0.64\%$ ($\delta = -0.50\%$) and RSD = $\pm 1.13\%$ ($\delta = -0.16\%$) for the "Acetylcystein 200 Heumann Brausetabletten" (Germany), "AC-FS" ("Farmastart", Ukraine) and "Acestad" tablets (Germany), respectively. The proposed method is promising for further research on the subject of its application for the determination of N-acetylcysteine in drugs, in the absence of ascorbic acid.

Keywords: N-acetylcysteine, luminol, inhibitor, chemiluminescence method
