The invention relates to medicine and biochemistry and can be used for selecting biologically active compounds affecting the production of endogenous hydrogen sulfide, assessment of the activity of new agents in the prevention of complications of cardiovascular and neurodegenerative diseases, diabetes mellitus and other diseases.

Summary of the invention consists in that the test substances in various concentrations are mixed with a 0.05 M phosphate buffer solution with the pH 7.4 containing tissue homogenate, namely from liver tissue, with a concentration of 1.0…3.0 mg protein/mL, which are incubated at 37°C for 5…10 min, then is added a mixture, containing 0.05 M phosphate buffer solution with the pH 7.4, L-cysteine (final concentration of 0.8…1.6 mM/L) and pyridoxal-5'-phosphate (final concentration of 0.08…0.16 mM/L). The samples are closed with a cover, containing on the inside a layer of agarose gel, prepared by mixing a 1% agarose solution with a solution, containing 0.18 M sodium and potassium tartrate and 0.08 M copper (II) hydroxide, in a ratio of 4:1, with the pH 9.0…9.7. The samples are incubated at 37°C for 2 hours, after which the cover with the agarose gel is introduced into a plate reader and is measured the absorbance at a wavelength of 320 nm, then is calculated the hydrogen sulfide production capacity under the influence of the test substances according to the formula:

CP (%) = 100 -[1-(Apr-Ab)/(Ak-Ab)]*100, where:

CP (%) - hydrogen sulfide production capacity;

Apr - absorption of the test sample;

Ak - absorption of the control sample;

Ab - absorption of the blank sample;

in the event if the hydrogen sulfide production capacity exceeds 100%, the test substance activates the hydrogen sulfide production capacity, and if it is less than 100%, the test substance inhibits the hydrogen sulfide production capacity.

Claims: 1