

OF ORGANIC SUBSTANCES BY THIN LAYER
CHROMATOGRAPHIC METHOD

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Annotation: An important advantage of chromatographic methods is speed, i.e. express method. In chemical analysis, there are more types of surface chromatography performed on paper or a thin layer of sorbent.

Thin layer chromatography - substances in the mixture are separated due to the different distribution of the mobile eluent (mixture of solvents) and the thin layer of the sorbent uniformly attached to the plate [2,3,7]. To perform chromatography on a thin layer of a sorbent, a sorbent-plaster mixture is evenly spread on the surface of a glass or foil plate using a special device and dried. A starting line is drawn with a soft pencil at a distance of 1.5 cm from the bottom edge of the plate . A small drop of the test solution and the standard solution of the substance to be detected is dropped in a thin capillary device at a distance of 1.0-1.5 cm from the start line. At the bottom of the plate, a glass (column) with a 1 cm thick eluent is placed vertically, and the mouth of the glass is closed[4,6,8]. The eluent moistens the sorbent and moves to the finish line by dissolving the substances brought to the starting-line.

Key words: (TLC), silica gel, aluminum oxide, theophedrine tablets, mixture , cellulose , kieselguhr , polyamide.

Main part: In thin-layer chromatography, the mixture of solvents should be selected in such a way that the mixtures are symmetrically arranged in the chromatogram and the Rf value should be greater than 0.5. Mobile hard phase as a sorbent, silica gel, aluminum oxide, KSM brand silica gel, silica gel-aluminum oxide mixture , cellulose , kieselguhr , polyamide is used as a mobile solid phase sorbent. The characteristic weight of the functional groups of the substance, which should be determined when choosing a sorbent, is also important. Thin-layer chromatography is used later in the analysis and separation of organic substances , especially natural compounds. Thin layer chromatography (TLC) sensitivity It differs from other chromatographic methods by its high speed, fast analysis, long storage of chromatograms, and the possibility of desorbing substances from them much easier. It

takes only 10-30 minutes to do this. It is performed on thin layers of sorbent that does not stick to a special glass plate or sticks to it. For this, the adsorbent is placed on a plate 15-20 cm long and 4-20 cm wide using a special thin layer forming device. The plate is placed in a chromatographic chamber with a solvent system, with the side with the droplet points facing the solvent, but without the points touching the solvent. The top of the chromatography chamber is tightly closed. The plate is installed at an angle to the camera. A wide glass , desiccator, etc. can be used as a camera[5,7,8] . Chromatography is stopped when the solvent rises to the top and remains 0.5-1 cm from the opposite end of the plate. For this, the plate is removed from the chamber and dried. Paper chromatography is also a form of thin-layer chromatography, which is used to separate and identify complex compounds, especially oxylys, carbohydrates, fats, antibiotics , hormones, glycosides, alkaloids, phenols, and other natural substances. In this method, water adsorbed on the paper is the stationary phase, and a solvent immiscible with water is used as the mobile phase.

Research method: Separation of organic substances by thin-layer chromatographic method is carried out on unsealed plates. The sorbent layer strengthening for $5\pm 20\%$ binder is added [1,4,5]. It should not affect the separation process of supplements B. Such binders include gypsum, starch, agar-agar. 5 g of KSM brand silica gel, 0.2 g of calcium sulfate and 12 ml of water are mixed in the same well with a glass rod in a stirrer and a thin layer plate with sorbent is prepared. The prepared mixture is poured onto a glass plate measuring 13x18 (14x16; 8x15) cm and leveled until the thickness of the layer is uniform (2 5 0 -5 0 0). mg) . Next, the plate is dried horizontally in a drying cabinet at a temperature of 120 ° C for 1 hour . Plates are stored in anhydrous calcium chloride desiccators.

Theofederine Tablet : Tablet composition :

Theophylline 0.05 g Ephedrine hydrochloride 0.02 g

Theobromide 0.05 g Phenobarbital 0.02 g

Caffeine 0.05 g Belladonna extract 0.004 g

Amidopyrin 0.2 g Cytisine 0.0001 g

Phenacetin 0.2 g, until a tablet with a mass of 0.48 g is formed.

Conclusion: Currently, this method is widely used in pharmaceuticals, it is used to separate drugs used against various diseases, to determine their purity, and to quickly and efficiently separate them . It is also used to separate organic and inorganic substances. Such to binders Gypsum , starch , agar-agar are included . 5 g KSM brand silica gel , 0.2 g of calcium sulfate and 12 ml of water glass rod in the mixer with one different in the well mixed and sorbent thin layered plate is prepared . Thin-layer chromatography is used later in the analysis and separation of organic substances , especially natural compounds[1,3]. With the help of this method, it is possible to control the progress of chemical reactions, to monitor the separation of complex

mixtures separated into some components using a chromatographic column, to quickly identify substances, and to completely isolate and purify a very small amount of organic substances from the mixture. In chemical analysis, there are more types of surface chromatography that are performed on paper or a thin layer of sorbent [2,4,8]. Thin layer chromatography is separated due to the different distribution of the substances in the mixture in a mobile eluent (mixture of solvents) and a thin layer of sorbent uniformly attached to the plate.

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