TECHNOLOGY PARAMETERS DEVELOPMENT OF MAGNESIUM S-LACTATE DIHYDRATE PRODUCTION FROM TECHNICAL PRODUCTS

Snegirova D.V, Snegirov V.P, Almakaeva L.G, Bevz N.Y.
The National University of Pharmacy, Kharkiv, Ukraine
dsnegireva@mail.ua

Magnesium lactate is used as an active pharmaceutical ingredient in the form of R,R-; S,S- and R,S- isomers mixture in some medicines, that are represented at the pharmaceutical market of Ukraine and many foreign high-tech countries.

Usage of individual S,S-isomer is expected to have increased pharmacological efficiency because of improved affinity to the S-structures of biological objects. However, it wasn't found. The relevance of this compound and of its production technology also increases because of growing compared to euro dollar course, and especially growing compared to hryvnya. That's why such production can become competitive in Ukraine.

The main purpose of our work is the technology parameters development of magnesium S- lactate dihydrate production in order to obtain quality product with high yield.

As a basic substances we have used cheap and accessible water cleared (SPhU 1.4. p.389), technicals magnesium oxide and S-lactic acid.

Theoretical organic chemistry, quantitative calculation of possible admixtures, instrumental physicochemical, titrimetric types of analyses and technological methods were used as research methods.

As a result we have developed technology parameters of magnesium S-lactate dihydrate production. The technology is carried out in two stages, using water as a solvent, under heating, with subsequent filtration and product drying. Thus, all insoluble in hydrochloric acid admixtures from the orginal oxide, and also polilactic acids and products of their decomposition from lactic acid are removed from the end-product.

The quality of the obtained product corresponds to the requirements of the European standards (Ph Eur 2008, monograph 2322). At the same time some additional indexes were added to the analytical documentation project. Particularly, the determination of a specific optical rotation was added. The average magnesium S-lactate dihydrate yield was found out as 86,8% of theoretical one.

Therefore the developed technology is quite simple; it doesn't need any fire dangerous or explosive solvents. And it also posses high economic parameters. That's why this technology is offered to the Ukraine manufacturers in order to use it at the industrial production.