

## QUALITATIVE DETERMINATION OF LACTOSE IN LACTOSE FREE MILK

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**Introduction.** Milk – one of the most perfect foods, created by nature. It contains the most complete and balanced set of essential nutrients. Lactose, or milk sugar, is the main carbohydrate of milk. The collapse of the lactose is under the action of the enzyme lactase, which is the highest activity observed in humans at birth. It remains quite high throughout life, if milk is included in the diet constantly. At the same time, some people milk sugar can't be acquired. After consumption of milk products there irregularities in the digestive system (diarrhea, pain, bloating, nausea, vomiting). This phenomenon is due to insufficient production or lack of lactase. Especially for people who suffer from lactose intolerance, there is milk without lactose. That is why it is appropriate to develop a method of determination of lactose in lactose free milk and to check lactose content in samples of lactose free milk of domestic producers.

**Aim.** Our aim is to develop methods of qualitative detection of residual lactose which left after fermentation in lactose free milk.

**Materials and methods.** The object of our study “Milk drinking ultrapasteurized lactose free, 2.6% of fat” brand “На здоровье”, produced by “Lustdorf” Ukraine was selected. lactose free milk was produced according to Specification 10.5-33548609-015: 2012. Ingredients, given on the label: cow's milk, the enzyme lactase. The label also states that the lactose content in this product is less than 0.01%. To verify the presence of lactose in the sample, it was decided to hold a series of reactions of identification of lactose and TLC. Chromatographic studies were performed on plates with a layer of silica gel G P, mobile phase composition: water-methanol-glacial acetic acid-ethylenchloride (10 : 15 : 25 : 50), as developer solution thymol in a mixture of sulfuric acid and 96% alcohol was used.

**Results and discussion.** The TLC method was developed and tested directly in the sample - lactose free milk without prior sample preparation, as well as the test sample after preliminary training, which included stage processing of milk lactose 70% solution of trichloroacetic acid to precipitate proteins.

**Conclusions.** During this investigation methods of the determination of lactose in lactose free milk by TLC was developed. Investigated sample doesn't contain lactose.