The chitotriosidase (CT), also known as chitinase, is secreted by activated macrophages. It is a glicosilhidrolase which hydrolyzes chitin. CT activity is increased in plasma of Gaucher disease (GD), Niemann-Pick disease, GM1 gangliosidosis and Krabbe disease patients. However, it is not known because the activity of this enzyme is increased in these diseases. The measure of CT activity in plasma is considered the gold standard for the diagnosis of GD. This measure can also be performed on dried blood spots (DBS), but as a screening method. This study aimed to establish the effect of storage time of the DBS on the measure of CT activity in samples stored at 4°C. The measure of CT was determined using the artificial substrate 4-methylumbelliferyl-β-DN-N'-N'-N'-triaceitilquitolotrioside in DBS of 1.2 mm. This assay was incubated at 37°C and the reaction stopped with glycine-NaOH buffer pH10,3. The fluorescence was read at 365 and 450nm in fluorometer. Measures were made three days, one week and one month after collection and analyzed by one-way ANOVA. We observed that the CT activity remains stable until one month after collection compared with that after three days of collection (time between the collection and transportation of samples to the laboratory). Our results are very important as they allow us to conclude that the CT is a stable enzyme and can be stored in the refrigerator until it is sent to the laboratory.

Key-words: chitotriosidase, Gaucher Disease, DBS

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