

COMPARISON OF CYTOKINE CONCENTRATION IN FROZEN PLASMA COMPARED TO LYOPHILISED PLASMA FROM PATIENTS WITH MDS USING THE LUMINEX TECHNIQUE

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INTRODUCTION

In myelodysplastic syndromes, most studies focus on haematopoietic progenitors. However, the profile of cytokines present in plasma has been little studied. Another problem that exists in laboratories is the preservation of frozen samples. One alternative to freezing is **lyophilisation**, a method of dehydrating samples that allows them to be stored at room temperature for long periods of time.

300K Solutions is a company that has developed its own technology, providing a tool for stabilising dry samples by combining precision freeze-drying technology with sample protection reagents and vial formats that maintain traceability in laboratories.

OBJECTIVES

Measure the cytokine profile of patients diagnosed with myelodysplastic syndrome and compare their concentrations between plasma stored at room temperature and plasma frozen at -80°C.

METHODS AND MATERIALS

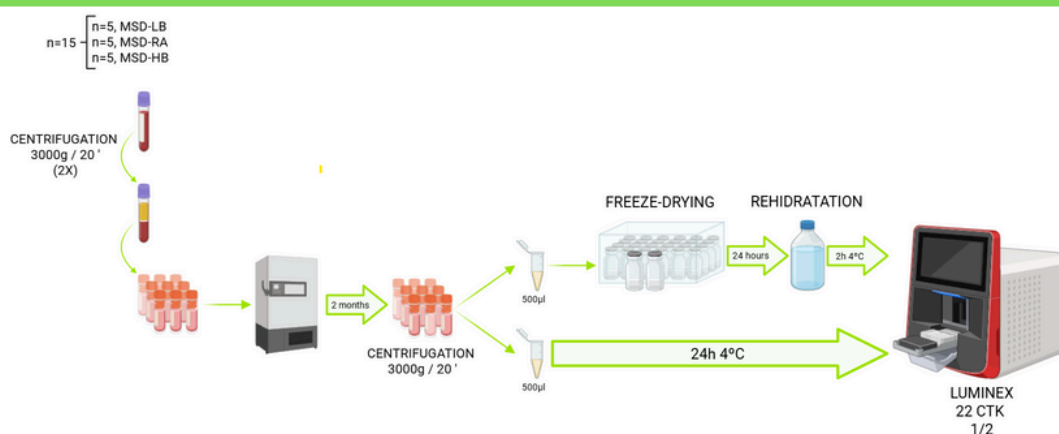


Fig. 1: Experiment outline: peripheral blood plasma (PB-EDTA) obtained from n=15 patients with MDS (5 patients with MDS-LB (low risk), 5 patients with MDS-RA (ring sideroblasts), and 5 patients with MDS-HB (high risk)). Centrifugation and separation of 2 aliquots from each patient. Freeze-drying and rehydration of one of the aliquots. Performance of the Luminex technique. Centrifugation and separation of 2 aliquots from each patient. Lyophilization and rehydration of one of the aliquots. Performance of the Luminex technique on both plasma aliquots.

RESULTS

Of the 22 cytokines studied, only one was affected by the lyophilization process (CXCL10).

Five others show a variable pattern, as lyophilization preserved them better in some cases and freezing in others. This variability may be due to previous factors affecting the preanalytical phase (sample extraction, transport, etc.).

The remaining 16 cytokines show no significant differences between the two stabilization methods.

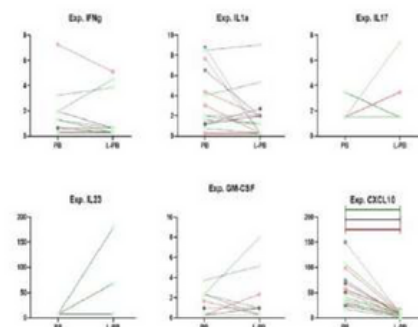


Fig. 2: Variation in cytokine concentration between frozen plasma and lyophilized plasma.

CONCLUSIONS

The stabilization of plasma samples obtained from peripheral blood using the lyophilization process **is a valid procedure** for their preservation at room temperature, also allowing their use for cytokine analysis using the Luminex technique.

Further studies will be necessary to determine their stability over time.

This publication is translated from Spanish