

## The NUPLA Project

Project title: New reagents, medical devices, blood products and drugs obtained from

placental blood (NUPLA)

Sponsor: MEDITALIA Srl

Duration: April 2018 - October

2019 Participants:

 Public cord blood banks belonging to the Italian Cord Blood Network (ITCBN) coordinated by the National Blood Center, Rome, Italy

Banc de Sang I Teixits, Barcelona, Spain

**Scientific rationale.** Placental blood (a.k.a. 'cord blood', the newborn's blood that remains in the placenta at the end of delivery) has been generously donated by the newborn's parents and stored in numerous public banks for many years to perform hematopoietic transplants in patients suffering from severe blood diseases. However, over 90% of donations cannot be used for this purpose because they do not contain enough stem cells to perform these types of transplants. The high percentage of non-suitability for transplantation use of collected donations has stimulated some investigators to promote alternative uses of placental blood, including the therapeutic use of platelets for the treatment of skin ulcers. Indeed, it is known that platelets contain numerous biological factors that perform important physiological functions promoting cell and tissue homeostasis. The purpose of the NUPLA project is to perform comparative studies with platelets obtained from placental blood and from adult donor's blood, with the aim of developing new reagents and therapeutic products from placental blood.

## **Objectives:**

- to evaluate the content of tissue regenerative factors present in placental blood platelets and their stability after lyophilization.
- to develop new reagents, medical devices, blood derivatives and drugs from placental blood through industrial procedures.



## Description of activities.

- optimization of a freeze-drying procedure of platelet lysates obtained from placental blood and evaluation of the content of tissue regeneration factors and their stability;
- comparative evaluation of the use of platelet lysate from placental blood versus fetal bovine serum as an additive for cell culture media;
- review of regulatory and legal aspects relating to blood components for topical use and promotion of their international harmonization;
- review of the ethical issues relating to the industrial pharmaceutical use of blood products obtained from placental blood.