PROTOCOL FOR THE CONDITIONING AND TRANSPORT OF BIOMATERIALS

The aim of this protocol is to describe the shipment of biological material, DNA, lymphoblastoid cell lines at room temperature and in dry ice (cell line vial).

A- INTRODUCTION

1.1 Classification

The transport regulations (ADR for road transport and IATA for air transport) define 9 classes of dangerous goods, of whom class 6 is related to: **Toxic (Poisonous) and Infectious Substances**

The lymphoblastoid cell lines belong to:

Class 6.2 – Infectious material

DNA is not mentioned in the transport of biological material regulations.

Each **class** is divided into sections (identified with a **UN number**).
Human biological material belongs to the following 6.2 sections:

UN 2814	MATERIALS INFECTIOUS FOR HUMAN

or

UN 3373	CLINICAL SAMPLES FOR DIAGNOSIS

1.2 Dry Ice

Dry ice is a dangerous material for air transport (other transport means are not concerned) and it thus belongs to **UN 1845, Class 9** section. Therefore, each package containing dry ice (shipment at -80°C) for the shipment of dangerous material by air, must display a label with this identification.

1.3 Regulatory obligations related to the UN numbers

UN #	Documents	Packaging	Labelling & marking
UN 3373	None	Triple packaging (leak-proof)	UN 3373 Diagnosis sample
UN 2814	- ADR/IATA declarations - Transport instructions - List of the transported products	Triple packaging (leak-proof) certified 6.2	**Label 6.2** and UN 2814 **Infectious substance affecting human (compulsory for IATA only)** **Arrows** (in case of liquid product)
UN 1845 *Dry ice* *(+ other MD)*	- IATA declaration (not under ADR)	Packaging allowing release of sublimate CO_2	**Label 9** and **UN 1845** **Dry Ice**

B- PROTOCOL FOR THE CONDITIONING AND TRANSPORT OF DNA

DNA is not mentioned in the regulations for the transport of biological material, and thus packaging and transport are not subjected to these regulations.

Materials

- 1,8 ml Nunc tube
- M250 Gilson Microman pipette

Procedure

1. Stick a label with sample reference onto tube.
2. Aliquot with a Microman pipette the required quantity (50ul, 100 or ....ul)
3. Tubes should be packed in suitable packaging composed of a primary receptacle (tube containing the DNA) and a secondary packaging (leak-proof shipment box).
4. Label the package-box clearly so that it is easy to read and to identify the **sender**'s and **recipient**'s addresses, on two separate labels.

DNA must be transported at room temperature.

C- PROTOCOL FOR TRANSPORTING CELLS AT ROOM TEMPERATURE

Lymphoblastoid cells belong to following class:

Class 6.2 – Infectious material
UN 2814

Materials

- Bottle
- Parafilm
- Packaging: Triple packaging (double leak-proof) certified 6.2
- ADR/IATA declaration

Process

1 - Stick a label with sample reference onto culture bottle containing the sample.
2 - Cover the bottle cap with parafilm.
3 - Pack the culture in rigid, appropriate packaging (triple packaging), containing absorbent paper in case the culture medium leaks and, if possible, add shock-proof material (polystyrene chips).
4 - Labels with addresses of sender and consignee must be affixed to the parcel
5 - Transport labels related to the contents of the package must be clearly displayed on the parcel, as well as the ADR or IATA declaration.

D- PROTOCOL FOR TRANSPORTING FROZEN CELLS

Describes the transport conditions of cells and dry pellets frozen in DMSO.
They are suitable for established cell lines and primary cultures.

Transport on dry ice belongs to the following class:

Class 9 - UN 1845

Materials

- Cryotubes
- Packaging allowing release of CO2
- IATA declaration

Process

1 - Stick a label with sample reference onto tube or cryotube.
2 –Pack the culture in rigid, dry ice-appropriate packaging which is required for cell preservation and allowing release of sublimate CO2.
3 - The quantity of dry ice must be adapted to the volume of transported material.
4 - Labels with addresses of sender and consignee must be affixed to the parcel
5 - Transport labels related to the contents of the package must be clearly displayed on the parcel, as well as the ADR or IATA declaration.