



## VITVO FREQUENTLY ASKED QUESTIONS



### WHAT IS VITVO?

- VITVO is a 3D bioreactor . It looks like a small box composed by a blue frame in continuity with two transparent oxygenation membranes . VITVO contains a 3D matrix inner core based on woven-non woven tissue ( polyester hydrophilic fibers)

### WHICH CELL TYPES HAVE BEEN TESTED IN VITVO?

- Tumor cell lines: A673, TC71, BxPC3, MIA-PACA, Bt549, Sy5y, SkBr3, A172, U87MG
- Primary tumor: Lung Adenocarcinoma. Glioblastoma
- Healthy Lymphocytes , Mesenchymal Stromal/Stem Cells (MSC) from Bone Marrow (BM) and Adipose Tissue (AT)

### HOW MANY DAYS CAN THE CELLS STAY CULTURED IN VITVO?

- VITVO is conceived to obtain fast results. Depending on the cell type and the analysis purpose VITVO is usually recommended for 3-7 days cell culture experiment

### WHICH QUANTITY OF CULTURE MEDIA IS REQUIRED TO FILL VITVO?

- VITVO can contain  $1.4 \pm 0,2$  ml of media



### **WHICH IS THE TIME INTERVAL SUGGESTED FOR CULTURE MEDIA REPLACEMENT IN VITVO?**

- It is usually recommended to change media every 24h but it's depending on cell type, growth rate and experimental setting

### **WICH QUANTITY OF CELLS CAN I LOAD?**

- Tumor cell lines: 560.000 cells/VITVO
- Primary tumors: 0,5-2M cells/VITVO
- BM and AT MSC: 120.000-240.000 cells /VITVO
- Consider 5-7 fold increase in cell number /cm<sup>2</sup> compared to seeding on flat surface

### **WHICH IS THE 3D MATRIX SURFACE?**

- 3D Matrix surface is 4 cm<sup>2</sup>

### **IS VITVO REUSABLE?**

- No, VITVO is a single use product

### **IS VITVO GAS PERMEABLE ?**

- Yes, VITVO has two oxygenation membranes that allow for gas exchange (O<sub>2</sub> and CO<sub>2</sub>)

### **HOW CAN YOU MONITOR 3D CELL GROWTH IN VITVO ?**

- Live cells in VITVO can be visualized by fluorescence microscope using fluorescent cells or staining normal cells with fluorescent dyes (i.e. calceinAM). Cells growth can be monitored and quantified using Real Time GLO assay (Promega) or other cell viability assay methods based on bio-luminescence or fluorescence



### **IS IT NEEDED TO COAT VITVO 3D MATRIX ?**

- No, the 3D matrix of VITVO is conceived for cells engraftment and growth without need of any coating method, but it's possible to use synthetic biologic matrix to mimic ECM

### **WHICH IS THE DISTANCE WITHIN THE MATRIX FIBERS?**

- The random distribution of fibers involves a fiber to fiber distance of about 10 microns (intended as mode of a Gaussian Distribution)

### **CAN YOU MAKE HISTOLOGICAL ANALYSIS?**

- Yes, the 3D matrix of VITVO can be embedded in methacrylate to prepare tissue slides for histology. 3D matrix is not suitable for paraffin embedding.

### **DOES VITVO CONDITIONS THE CULTURE ?**

- No, in VITVO cells maintain their natural shape and morphology and they are also able to form aggregates and spheroidal structures

### **CAN YOU RECOVER CELLS FROM VITVO?**

- Yes, partially cell recover is possible. By trypsinization you can recover enough cells to analyze them at cytofluorimeter.



### **WHY VITVO IS PROVIDED WITH A TRAY?**

- VITVO tray allows to directly read the device ,using a plate reader, setting the instrument for the reading of the two central wells of a 6 multiwell plate.

### **IS VITVO A STATIC CULTURE MODEL?**

- Yes, VITVO works in a static system. It can also be easily implemented in a dynamic situation using its connection ports and a pump