



## USER MANUAL

# Notice

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Thank you for your interest in MCT Unit. Meta Cell Technology strives to provide our customers with the highest quality devices, systems, and services.

This manual describes how to operate the MCT Unit system with the MCT Kit consumables. Please thoroughly familiarize yourself with this manual to make the most effective use of the device and the consumables.

Observe all cautionary instructions, safety messages, and warnings that appear in this manual. Due to continued technological improvements, this manual may not contain the most updated information and is subject to change without prior notice. You can find the latest version of this manual at [www.metacelltech.com/manuals](http://www.metacelltech.com/manuals).

Additional learning resources available at <https://metacelltech.com/elearning/>.

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## 01. DEVICE

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**Commercial product name:** MCT UNIT

**Model number:** MCT UNIT

**Intended purpose**

MCT UNIT is designed to be used in combination with the MCT Kit for the rapid obtention of platelet derivatives, such as growth factors and/or biological mediators, through the application of light and temperature.


**Contraindications:**


There are no known contraindications when used as directed.


**Warnings / Precautions:**


The warnings are related to the electrical risks for the operator.


The device should only be used by authorized and qualified staff.

 If there is a power outage or a treatment protocol is interrupted, the sample must be discarded and started over, using a new MCT Kit.

 It is mandatory to wear CE marked medical device gloves to operate and clean the equipment.

 Never spray water or detergent directly on the MCT Unit.

 Do not plug the unit into the wall outlet until the moisture from cleaning has evaporated.

 Do not operate any appliance with a power cord other than the official one supplied with the MCT Unit.

Do not use any attachments/parts not supplied by the manufacturer. The use of parts not recommended or provided by the manufacturer may cause serious hazardous situations including personal injury.

Do not use containers other than the MCT Kit®: the use of other non-original containers prevents photothermal conditioning. In addition, it may damage the unit tray.

### MCT® UNIT

Improves biological autologous material through the controlled emission of electromagnetic energy.



### MCT® KIT®

Device that stores the autologous material to be boosted. Patented and developed with geometry and chemical composition specific to the effective photothermal activation of autologous materials.



## 02. TECHNICAL SPECIFICATIONS

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<b>Technology</b>	Peltier, LED
<b>Compatibility</b>	Cassette MCT®
<b>Capacity</b>	10ml
<b>Maximum cooling temperature</b>	4°C
<b>Maximum heating temperature</b>	45°C
<b>Maximum air cooling rate</b>	2°C/min
<b>Maximum air heating rate</b>	5°C/min
<b>Temperature uniformity</b>	≤ ±0.5°C
<b>Precision of temperature measurement</b>	≤ ±0.5°C
<b>Temperature control mode</b>	Infrared sensor (contactless)
<b>Increase rate</b>	0.1°C
<b>Refrigeration</b>	Forced air
<b>Tray</b>	Removable and with locking system
<b>Maximum energy emission at 620nm (red)</b>	12 joules/min.
<b>Maximum energy emission at 530nm (green)</b>	10 joules/min.
<b>Maximum energy emission at 467nm (blue)</b>	10 joules/min.
<b>Maximum energy emission at 591nm (amber)</b>	7.5 joules/min.
<b>Maximum energy emission at 850nm (infrared)</b>	10 joules/min.
<b>Radiation emission</b>	Pulsed
<b>Screen</b>	7" colour LCD, capacitive touch screen
<b>CPU</b>	Arm®, Cortex®-M7, 1Gbit NAND. Firmw. Updated by USB 2.0
<b>Approximate dimensions</b>	300mm (l) x 300mm (w) x 400mm (h)
<b>Approximate weight</b>	8kg / 18lb
<b>Power supply</b>	230 VAC, 50 Hz, 150W
<b>Fuse</b>	3.15A-250V
<b>Maximum power</b>	400W
<b>Altitude</b>	2000 m
<b>Pollution degree</b>	Type 2
<b>Storage and transport conditions</b>	0°C-50°C (32°F-122°F)





### 03. PROTOCOLS

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The device has three pre-set automatic protocols. They are individual and to be applied only once with each sample.

#### Protocol #1. **PRP.**

Photo-thermal stimulation of Platelet Rich Plasma to obtain a higher concentration of ATP and growth factors, with a more prolonged and physiological release. It lasts 15 minutes and applies four degrees and  $1 \text{ J}/\text{Cm}^2$  of red light.



#### Protocol #2. **Cells stimulation.**



Photo-thermal stimulation for metabolism and a greater synthesis of ATP. It lasts 10 minutes and applies  $1 \text{ J}/\text{Cm}^2$  of red light.

### Protocol #3. **Exosomes.**

Photo-thermal modulation for the stimulation of exosomes releasing.

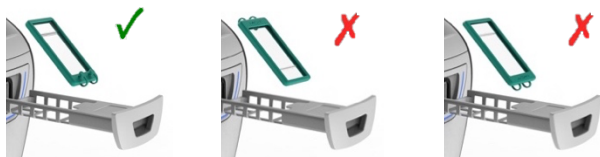


## 04. PROCEDURE

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When the device is switched on, the software is loaded, and a start screen appears where the treatment can be selected.

Place the MCT® KIT® in the tray (with the autologous material inside).



Reposition the tray in its slot in the MCT® UNIT.

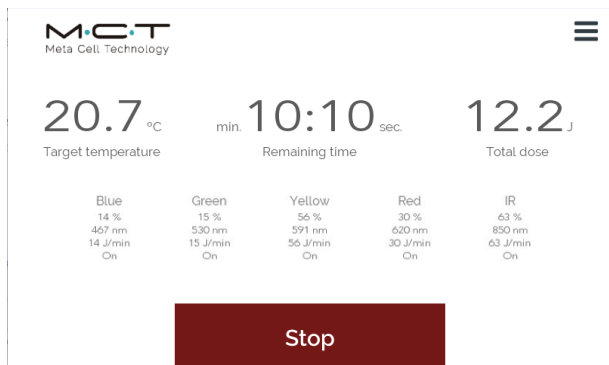
Select the desired preset.



When selecting any of the presets, the energy parameters will be applied automatically. The MCT® UNIT will show the session screen, with the session time and total energy (J).

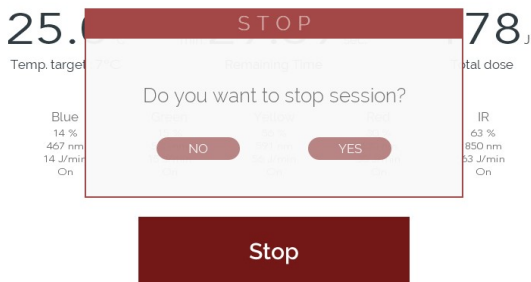
By pressing Start, the MCT® UNIT will begin the session.

Once started, a timer will show the session's remaining time and the settings.



A pop-up and an acoustic warning will indicate the session has ended and the MCT® KIT® may be removed from the MCT® UNIT's tray.

In addition, the session may be interrupted at any time by pressing the STOP button, which will display a message asking you to confirm this action.



## 05. MAINTENANCE

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**Cleaning:** Unplug the unit from the wall outlet before you begin cleaning it. Wipe the LCD screen gently with a soft cloth. When cleaning the body, wipe gently with a soft cloth lightly dampened in pure water. Stubborn stains may be removed with a solution of mild soap and warm water. We recommend the use of disinfectants for devices such as Instrunet Superficies.

To clean the fans, suck the dust with an electronic vacuum cleaner or carefully wipe the outer blades with a damp cloth.

**User is responsible of proper decontamination in the event of spillage of the sample or other hazardous material on or inside of the equipment. Cleaning and disinfection must be done right away.** It may drip to the bottom of the screen or exterior parts and enter the unit and may cause damage to the component parts.

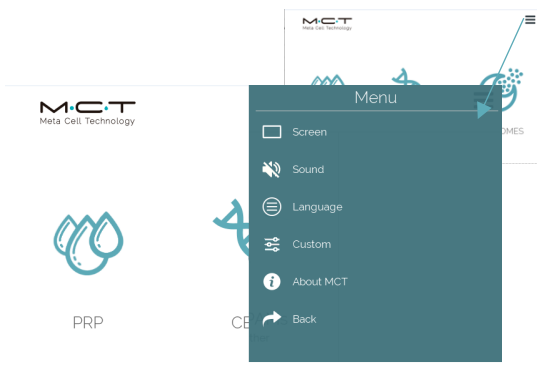
**User is expected not to use decontamination or cleaning agents that could cause a hazard as a result of a reaction with parts of the equipment or with material contained in it.**

**The manufacturer or its agent should be consulted if there is any doubt about the compatibility of decontamination or cleaning agents.**

## 06. CONFIGURATION

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The device has a menu where you can configure other interface options. There is an icon in the home screen's top right corner, which will open the following menu when selected:

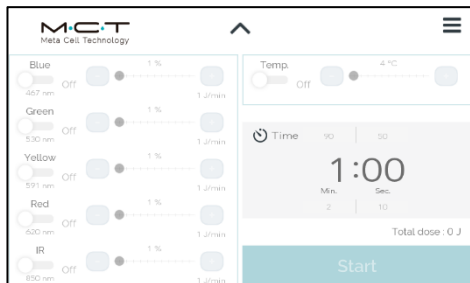


1. **Screen:** Allows you to change the screen brightness with a simple intensity slider.
2. **Sound:** Allows you to change the software's volume.
3. **Language:** Allows you to choose between English, French and Spanish.



4. **Custom:** This program allows the session to be freely configured so personalized protocols may be developed.

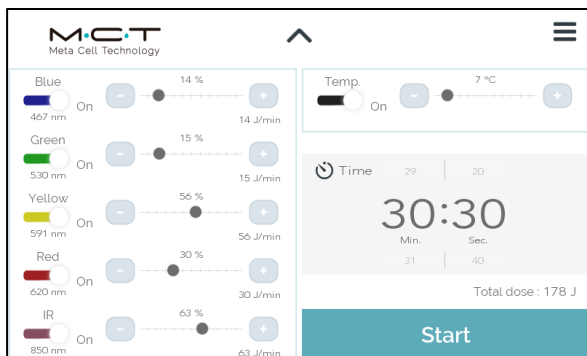
If you select the CUSTOM program, you must manually configure all light and temperature parameters:



- a) select the wavelength or light color you wish to apply (specific button)
- b) adjust the intensity of each wavelength to be employed (slider or the +/- buttons)
- c) adjust the temperature value (slider or +/- buttons)
- d) adjust the session time (scroll clock)



Below the session time you will see the total energy (J) to be applied depending on the configuration set. By pressing Start, the MCT® UNIT will begin the session and change to the specific screen.



5. **About MCT:** Information on the software version.

## 07. DEVICE SAFETY MEASURES AND TROUBLESHOOTING

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**Location:** MCT Unit should be used correctly placed on a flat surface, ensuring all four rubber feet are in place to allow proper air circulation and enough space to allow easy disconnection of the power cord.

The product must be connected to an electrical installation correctly protected and equipped with a protective earth.

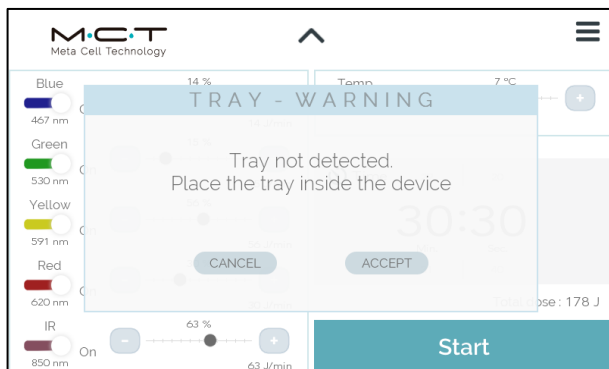
The equipment is designed to be used in basic electromagnetic environments. The standard applied is EN IEC 61326-1 (Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements).

The equipment should only be used by personnel who have read and understood this instruction manual or have been adequately qualified in the operation of this equipment. Non-qualified personnel should only use the equipment for occasional maintenance or adjustments, following the indications of the manufacturer's authorized technical service.

### Alarms and troubleshooting:










- When the MCT® Kit® tray is not correctly positioned or in its place, a warning screen will





indicate that the session cannot be started until the incident is resolved.



- If a code and an alarm text appear on the screen, you must contact the CLINIPRO technical service indicating the error code.

## 08.SYMBOLS

	Symbol MANUFACTURER. This symbol is accompanied by the name and the address of the manufacturer
	Symbol SERIAL NUMBER
	Symbol "Catalogue number"
	Symbol for CONSULT INSTRUCTIONS FOR USE
	Symbol RAEE
	Symbol "Caution"
	Symbol "Risk of electrical shock"
	Symbol "Alternating current"
	Symbol "Fuse"

	Symbol "Temperature limit"
	Symbol "Keep away from sunlight"
	Symbol "Fragile, handle with care"
	Symbol "Mandatory use of gloves"

## 09. TERMS OF WARRANTY

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MCT Unit is covered by a warranty lasting 2 years from the date of purchase on the fiscal document delivery (accompanying document confirming the date of purchase) and / or invoice.

Warranty is limited to replacement or repair of individual components or pieces with manufacturing defects.

The guarantee does not cover:

- Malfunction or damage due to negligence in handling or error on the part of the customer
- Malfunction or damage due to third party repair or modification
- Malfunction or damage due to the use of the product with a device not authorized by Clinipro
- Malfunction or damage due to use of the product for a purpose other than its intended purpose
- Malfunction or damage caused by natural disasters.

**Be sure to read the entire operation manual before using the product.**

The warranty is void if the device has been opened, tampered with, or repaired by unauthorized personnel. Defective devices must be reported and returned to an authorized distributor.



## 10. LIFESPAN AND DISPOSAL OF THE PRODUCT

MCT Unit has a lifespan of at least 9 years, provided it is used under the stated operating conditions and specified maintenance is performed.

MCT Unit is an electrical/electronic device and must therefore be disposed of properly. Consult a local waste management center.

