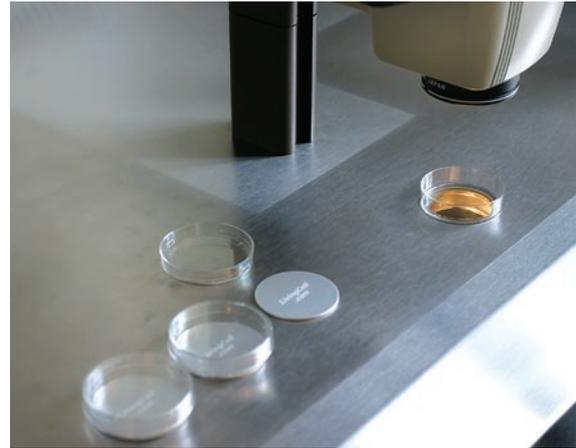


When
thermal control
is the key to
success



How cold are your dishes when you work on a heated surface?

An empty culture dish is 2.5-3.0 °C colder than the heated surface itself

How to verify

Place one LCThermometer™ inside a culture dish and another LCThermometer™ directly on the heated surface. The values of the LCThermometer™ will change colour from red to green to blue with green being the actual temperature. Compare the reading of the two indicators to verify the temperature difference.



Your dish drops to 29 °C in just 5 minutes

An air gap under the dish (0.4 - 1.6 mm) prevents direct heat transfer from a heated surface to the dish. As air is a very poor thermal conductor, the gap causes the temperature of a dish taken from the incubator and placed on a heated surface to drop drastically.

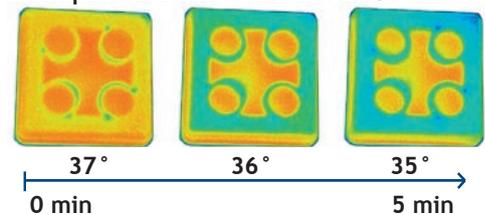
Raising the temperature of the heated surface may minimize the problem but it does not eliminate the problem. The only real solution to the problem is to eliminate the air gap.

Thermal loss reduced with the ThermoCoin™

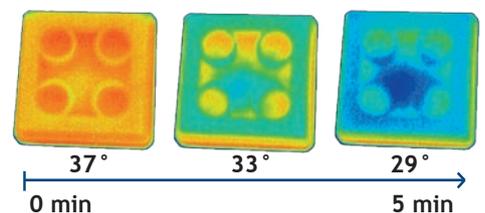
The ThermoCoin™ eliminates the air gap while providing a direct heat transfer to the dish. The ThermoCoin™ will thus reduce the thermal loss by several degrees while the dish resides on the heated surface.

Thermographical study - 5 min

Temperature loss with ThermoCoin™



Temperature loss without ThermoCoin™



Did you ever check your heated surface?

Heated surfaces are unstable

How to verify

Place an LCThermometer™ on a ThermoCoin™ or inside an empty culture dish and leave it on the heated surface for constant monitoring of heat stability.

Heated surfaces have cold/warm spots

How to verify

Place a LCThermometer™ on a ThermoCoin™ and move it around on the heated surface to verify the uniformity. (The surface temperature may need adjustment to be within the range of the LCThermometer™).



How fast do your dishes recover inside the CO₂ incubator?

Thermal recovery takes > 20 minutes

“When placed inside the incubator ... the lack of direct heat transfer to the culture dish causes temperature regain from 35° C to 37° C to last > 20 minutes”.

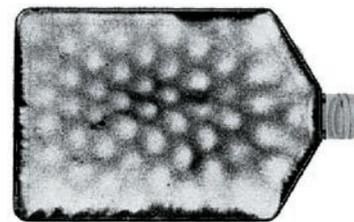
Ref: Cooke et. al. Objective Assessments Using In Vitro Culture Techniques, Journal of Assisted Reproduction and Genetics, Vol. 19, No. 8, Aug. 2002



Thermal recovery is very uneven

Furthermore, thermal recovery is highly influenced by the incubator shelf holes, and..... “In monolayer culture, images of incubator shelf holes are formed when the culture medium initially has a lower temperature than the incubator”.

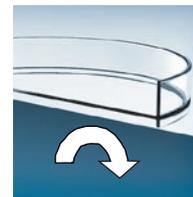
Ref: NUNC Bulletin 3 (1)



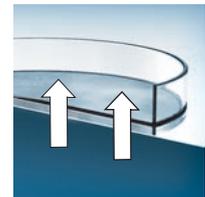
ThermoCoin™ provides a fast and even recovery of your dishes inside the CO₂ incubator

The ThermoCoin™ eliminates the air gap and direct heat transfer is obtained in a simple and very effective way. Additionally, uneven recovery is eliminated with the ThermoCoin™, and ... “with direct heat transfer, temperature recovery from 35.0° C to 37.0° C is limited to just 5.5 min.”

Ref: Cooke et. al. Objective Assessments Using In Vitro Culture Techniques, Journal of Assisted Reproduction and Genetics, Vol. 19, No. 8, Aug. 2002



No direct heat contact without ThermoCoin™



Direct heat contact with ThermoCoin™

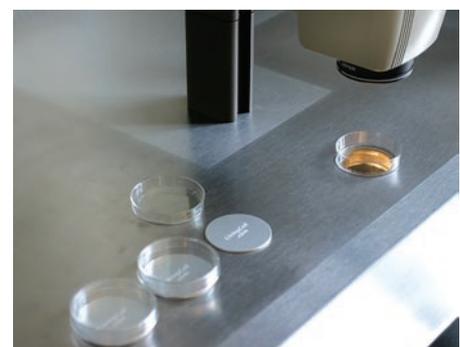
How to use the ThermoCoin™

On the heated surface

Keep several of ThermoCoins™ on the heated surface. Dishes with follicular fluid and dishes taken out of the incubator should always be placed on a ThermoCoin™ sitting on a heated surface, in order to minimize the thermal loss.

Inside the incubator

Keep several of ThermoCoins™ inside the CO₂ incubator. All dishes returned to the incubator should be placed on a ThermoCoin™ to reduce recovery time to a minimum.



The Products

ThermoCoin TC-4W

for Nunc 4-well dishes
Dimension: 60x60 mm
Packaging: 6 units per box



ThermoCoin TC-60

for 60 mm dishes
Dimension: Ø 50 mm
Packaging: 6 units per box



ThermoCoin TC-1006

for Falcon 1006 & Center-well dishes
Dimension: Ø 45 mm
Packaging: 6 units per box



ThermoCoin TC-35

for 35 mm dishes
Dimension: 32 mm
Packaging: 6 units per box



LCThermometer LCT-01

Temperature indicator Ø 32 mm
Range: 35-38°C with increments of 0.5°C
Packaging: 12 units per sleeve



The Company

LivingCell ApS

Symbion Science Park
Fruebjergvej 3 - box 53
DK-2100 Copenhagen
Denmark

P: +45.7025.1530
F: +45.7025.1531
E: info@LivingCell.com

LivingCell ApS develops disposables and utensils that help improve the daily work of scientists working in vitro with living cells.

Product ideas are based upon a broad and very strong network within the industry. Development is coordinated by LivingCell and carried out in close collaboration with leading industrial companies.

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