

# Comparative Clinical Study of 3 holding solutions in BHTransplant

Jose M de la Lama, MD, MBA, PhD  
Private Practice (Spain)



## Objectives

To compare different holding solutions by using a standard tool in humans  
To figure out if this tool is valid to be used in the clinical setting

## Methods

Clinical Study on human volunteer as own control  
Motorized punch 0,9 mm from human leg  
Standard local anesthesia & Tumescence

## 3 different holding solutions

- Group 1: 5 FUs 10 cc **Saline** (Braun) at 4°C x 2 h
  - Group 2: 5 FUs 10 cc **Ringer Lactate** (Baxter) 4°C + 4 cc **Cyanocobalamin** x 2 h
  - Group 3: 5 FUs 10 cc **Hypothermosol** (Biolife Solutions) 4°C x 2 h
- One additional FU was left at room temperature to be used as **control**

Digital microscope Colemeter USB 400X similar light conditions

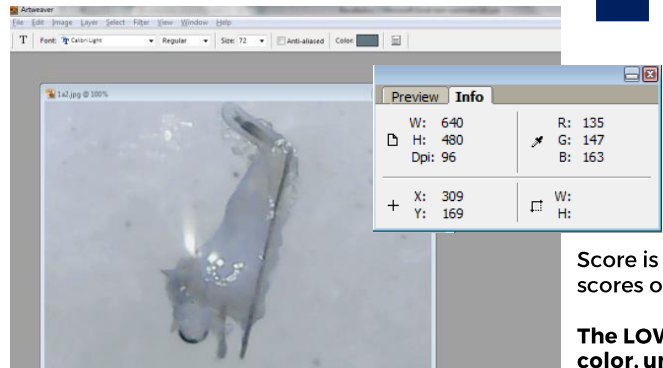
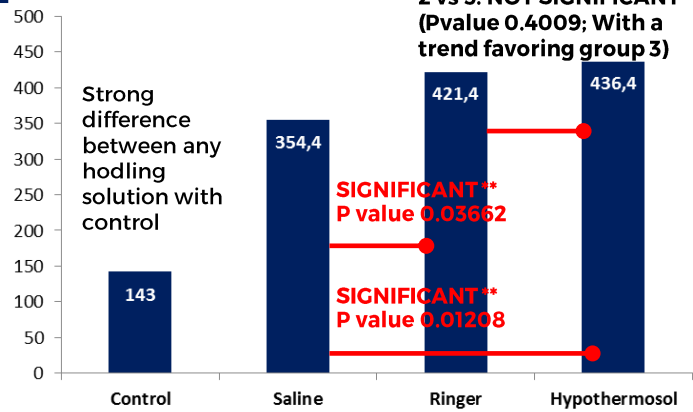
Cellular viability measured using 0.1% **trypan blue** solution for 15 min, color score by using a software standard tool (Artweaver 0.5.7 version, 2008) to arrive to a score for each sample

## Conclusions

We can use Trypan blue to observe the impact of a solution on **cell viability** and a software to compare graft colors, minimizing the subjectivity

Saline has a poor result compared to those "superior" solutions: Ringer's and Hypothermosol (no statistical differences but trend favoring last one)

## Results



Score is calculated adding the individual scores of each major color scale

The **LOWER** the score, the **DARKER** the color, under Trypan blue solution added