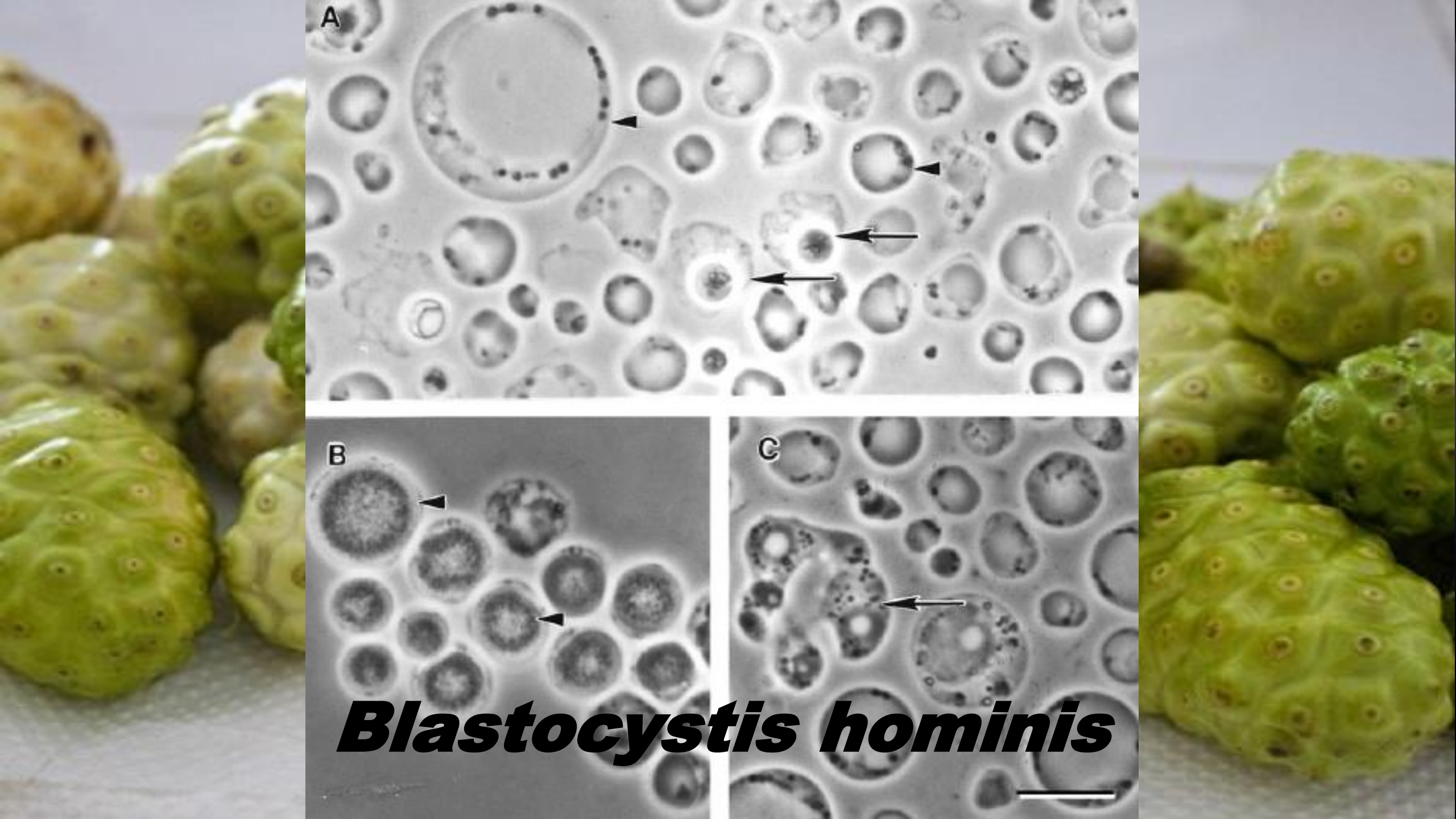
A
B
C
Blastocystis hominis


# *In vitro* antiprotozoal activity of *Morinda citrifolia* (Apatot) crude extract against *Blastocystis hominis*

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**Mentor: Jasmen Pasia, RMT, MSMT**

# OBJECTIVES

1. **To determine the viability percentage of the test organism when exposed to the following treatments:**
   - **Crude Extract of *M. citrifolia* (25uL, 50uL and 100uL)**
   - **Positive control (Metronidazole) (25uL, 50uL and 100uL)**

2. **To determine the significant difference between the mean viability percentage of the test organism when exposed to the treatments.**

# CONCEPTUAL FRAMEWORK

**Independent Variable**

**TREATMENTS:**

***a. Morinda citrifolia*** **dried fruit crude extract (100µg/mL) at 25 µL, 50 µL and 100 µL**

**b. Positive control (Metronidazole) (100 µg/mL) at 25 µL, 50 µL and 100 µL**

**Dependent Variable**

**Cell Viability of *Blastocystis hominis***

**Figure 1. Conceptual Paradigm of the Study**

Test for the Prepara extract


Oxidation Te
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No formation
thin 15 seconds

ATENEO DE DAVAO UNIVERSITY
Biology Department
Jacinto St., Davao City, Phil.

This is to certify that the specimen submitted for identification/certification was

In Vit Iridoid

Members:

Ayub, Jaime Jr.
Baliad, Heizyl-Gine
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Jr.
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Madrones, Lian Lou
Pastor Vincent Nathan
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arl Elson

FE M. BAGAJO
Curator/ Taxonomist

Date: May 17

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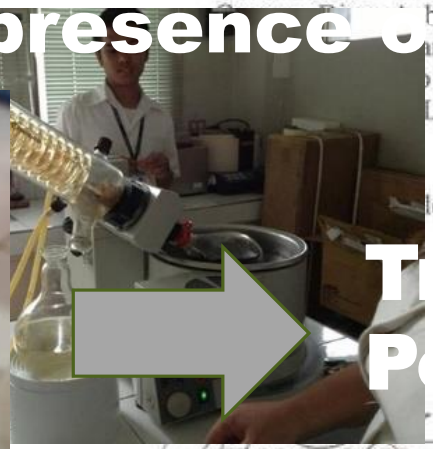

T
P


or Test
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A

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stis hominis

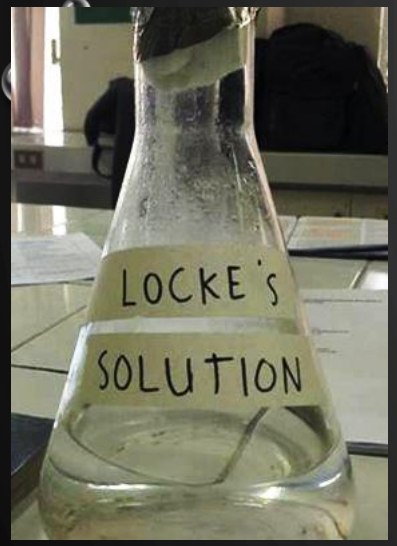
# Iridoid

- major phytochemical component in *Morinda citrifolia* (West et al., 2012; Deng et al., 2011)

- Bile acid independent choleretic action (Migayoshi et al., 1988)
- Hepatoprotective
- Purgative property (Tundis et al., 2008)
- Immunomodulator property
- Anti-inflammatory
- Yeast, gram positive and gram negative bacteria (West et al., 2012)
- Anticancer
- Antioxidant
- Anti-spasmodic

(Liu et al., 2012; Tundis et al., 2008)

# *In vitro* Testing





**Locke-Egg medium**


***In vitro* testing**

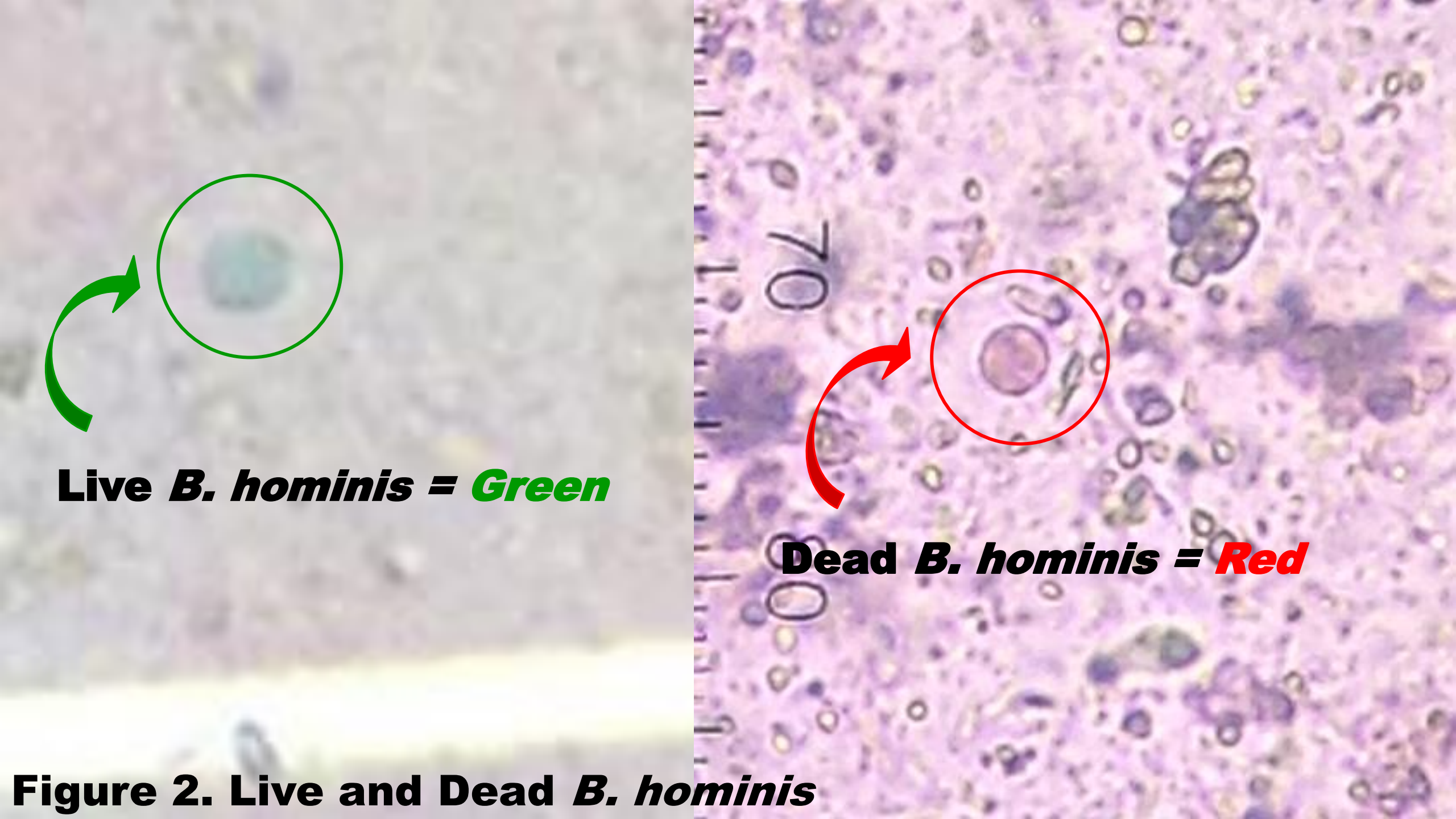



**Figure 2. Live and Dead *B. hominis***

Cells per mL= average count/square x dilution factor x 10^4

Total Cells= cells/mL x the original volume of culture tube

**Formula for Viability Count:**

$$\% \text{ Viability} = \frac{\text{Total number of viable cells} \times 100}{\text{Total number of viable and nonviable cells}}$$

# Figure 5. Mean viability percentage of *B. hominis* when exposed to the different treatments after 48 and 96 hours

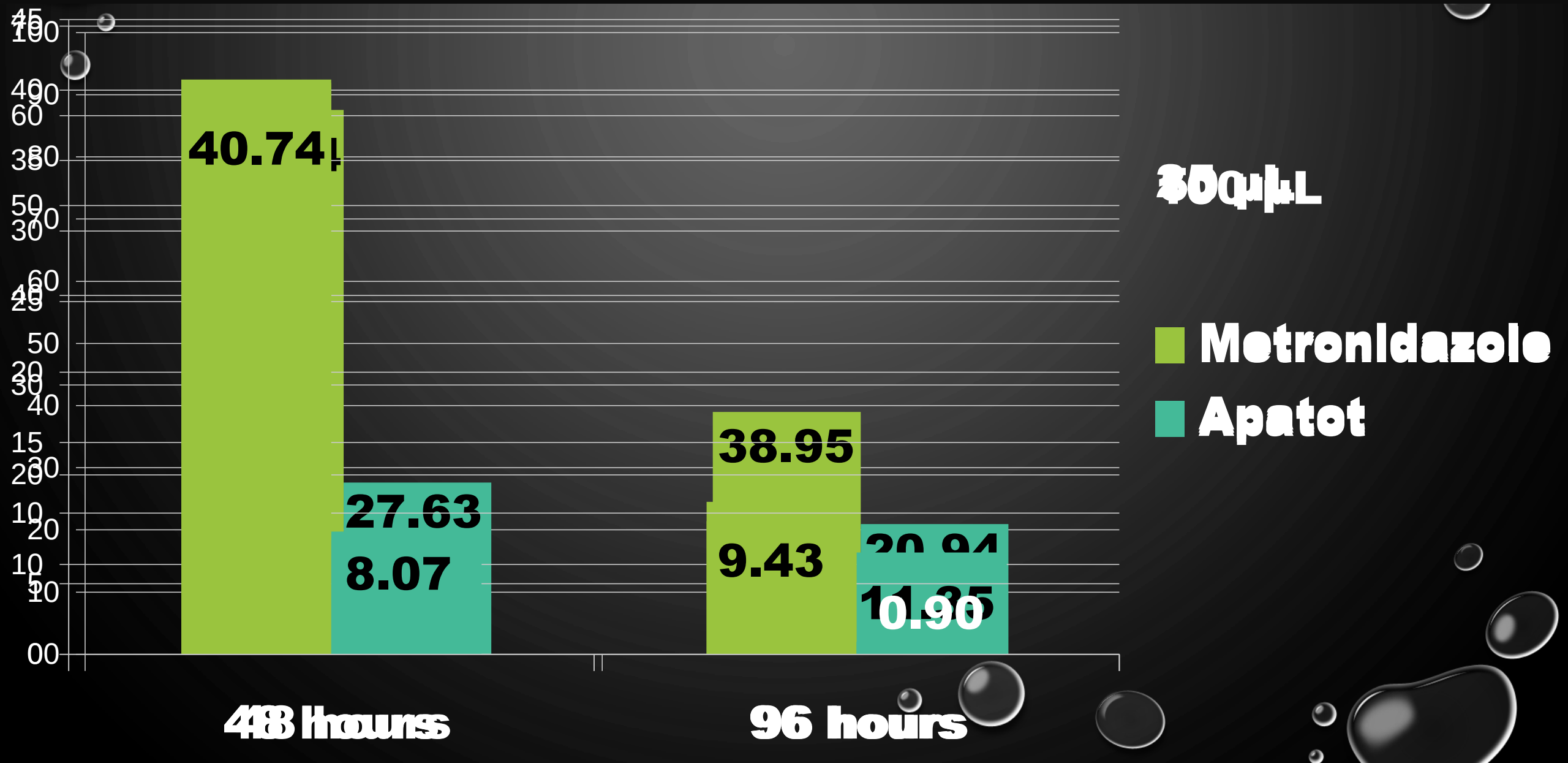


**Table 3. Test on the significant difference of the mean viability percentage of *B. hominis* exposed to the treatments**

| Treatment | | Volume | | | |
|---|---|---|---|---|---|
| | | 25 µL (48 hrs) | | 100µL (96 hrs) | |
| Mean | Metronidazole (100µg/mL) | 12.46 | 87.54 | 90.57 | 9.43 |
| | Apatot (100µg/mL) | 72.37 | 27.63 | 99.1 | 0.90 |
| T-value | | | 15.05 | | 5.20 |
| p- value | | | 0.0044 | | 0.0138 |

# CONCLUSION

***Morinda citrifolia* (Apatot) dried fruit crude extract exhibits antiprotozoal activity against *Blastocystis hominis.***

**It exhibits better and faster antiprotozoal activity than the standard drug, Metronidazole.**

# RECOMMENDATIONS

1. Antiprotozoal activity of *M. citrifolia* dried fruit crude extract be tested against *B. hominis* from animals
2. Perform in vivo testing using animals as subjects.
3. Plant extract should be used with other parasites especially *Entamoeba histolytica.*
4. Use HPLC for identification and isolation of the iridoid from *M. citrifolia*.
5. Compare extract of *M. citrifolia* with other antiprotozoal drugs aside from Metronidazole
6. Conduct further studies about *M. citrifolia* (Apatot).

# THANK YOU!