

Cryptococcosis



- **Cryptococcus neoformans**
- **Cryptococcus Gati**



❖ Cryptococcus neoformans

➤ A significant human pathogen

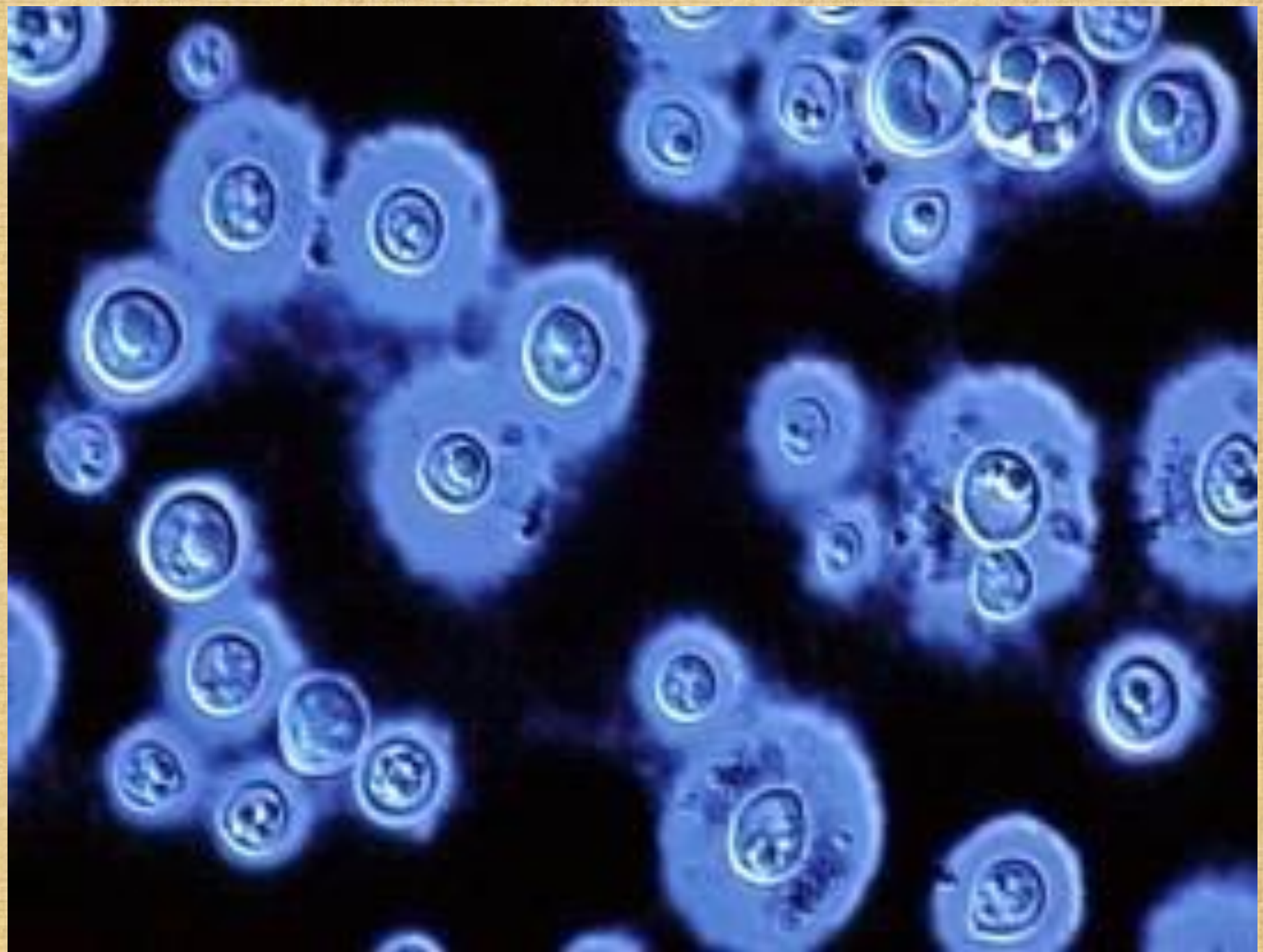
➤ Round or oval: 4-6 μm

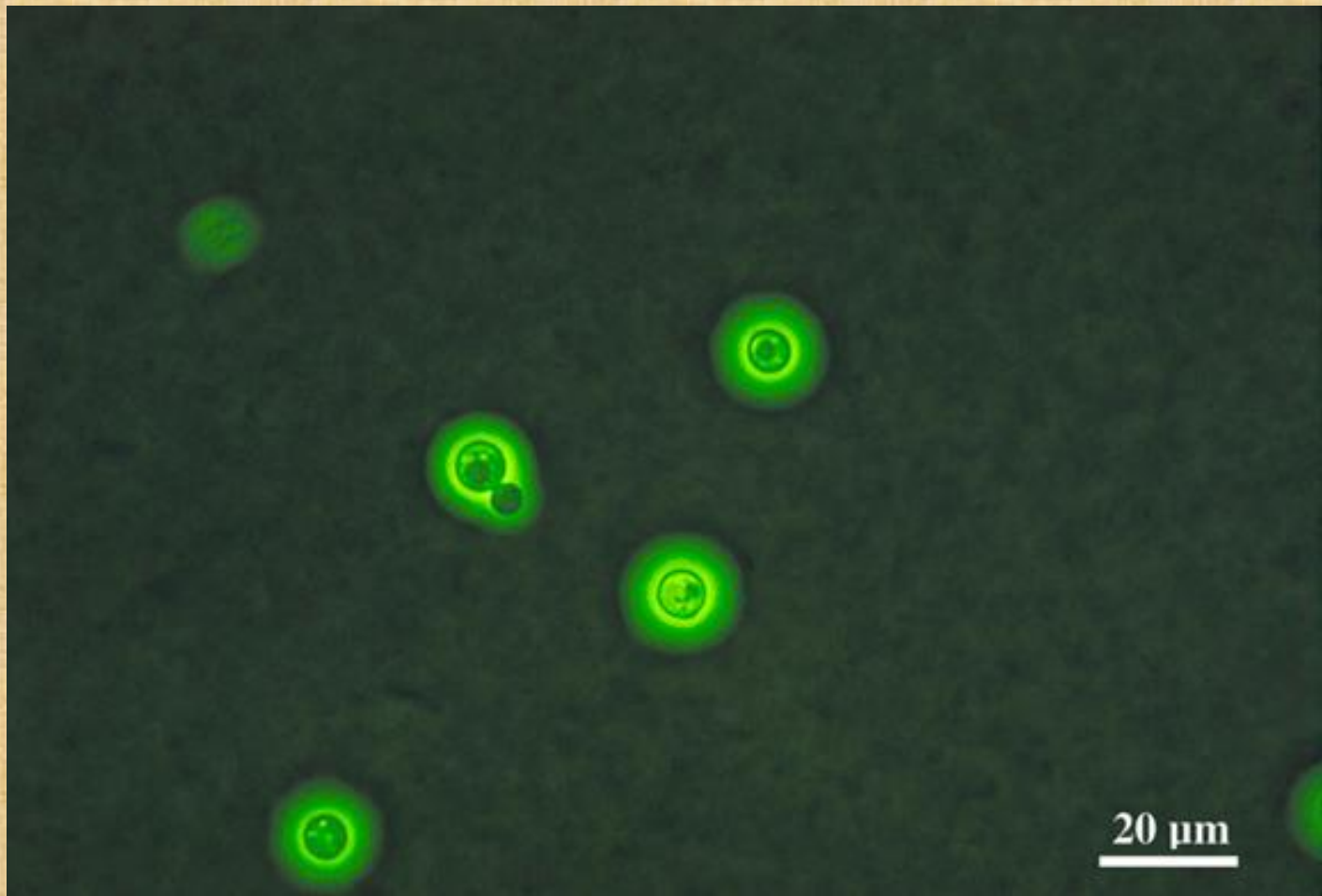
➤ Polysaccharid capsul:

❖ Glucuronoxylomannan (GXM)

Five serotypes: A(Grubii), B, C,
D, AD

➤ **Albidus. Laurentii**





Predisposing factors:

- ❖ neoformans

- **AIDS**

- ❖ In USA:

- 5-10% prevalence among **AIDS** patients

Predisposing factors:

- ❖ Gatii

- Tropical

- NO AIDS

Pathogenesis:

➤ **1-Cryptococcal capsular polysaccharide:**

- ❖ **Glucuronoxylomannan (GXM)**
- ❖ **Important virulence determinant**

➤ 2-Melanin production

(phenol oxidase enz.).dopamin

➤ 3-Growth at 37°C

➤ 4- Ureases

❖ 5- Phospholipases

❖ Mannitol (hydrophilic)

➤ Respiratory system

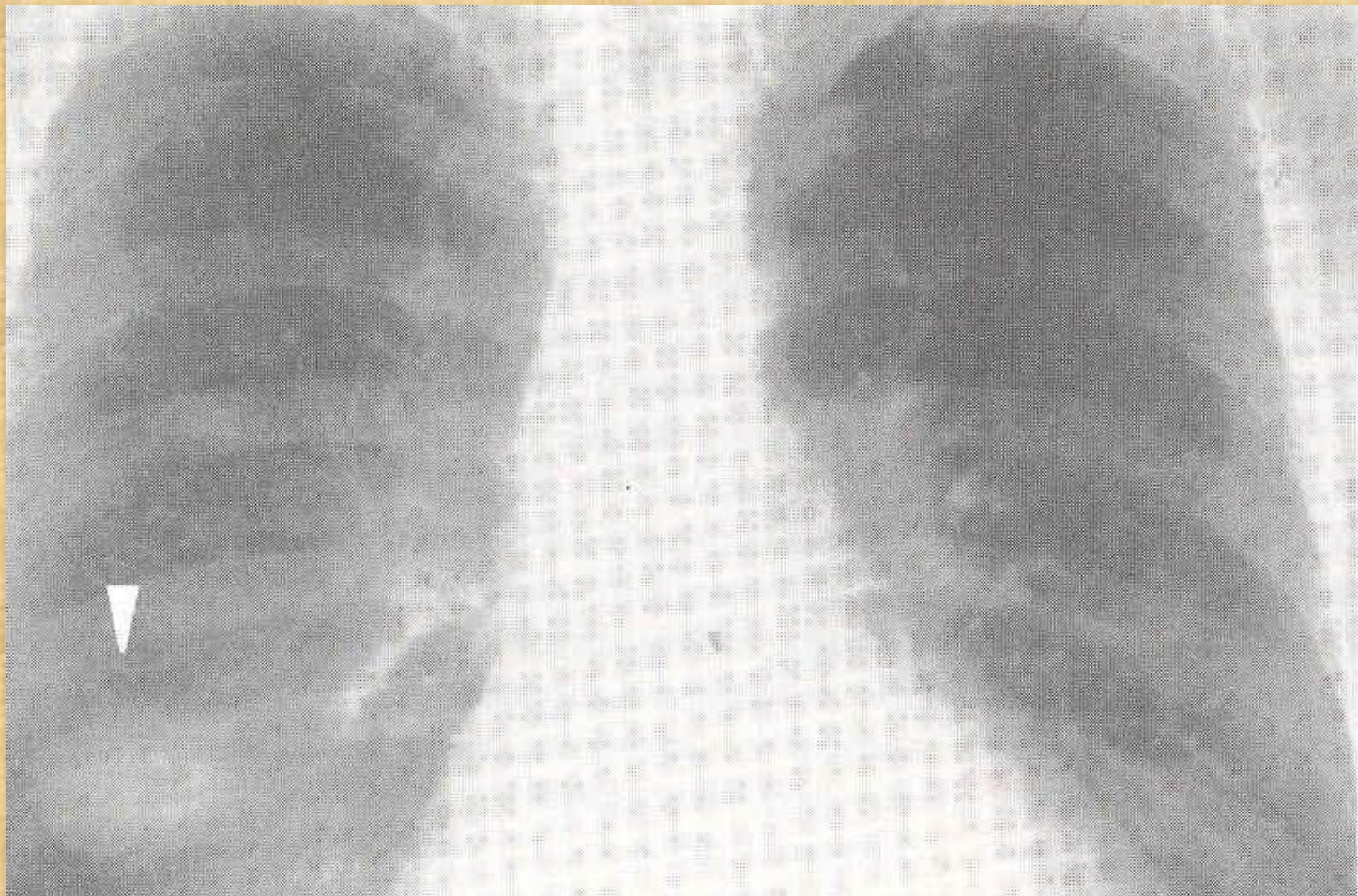
➤ CNS system

➤ Other sites

Respiratory system

- Asymptomatic or
- Only scant, sometimes blood-streaked sputum
- Cough and dyspnea
- Chest pain

Asymptomatic nodule



Patients with AIDS:

acute

- Fever
- Cough
- Dyspnea
- Pleuritic chest pain

Radiologic findings:

- Lymphadenopathy
- Diffuse infiltrates

CNS system:

Meningo-encephalitis

✓ Meningitis

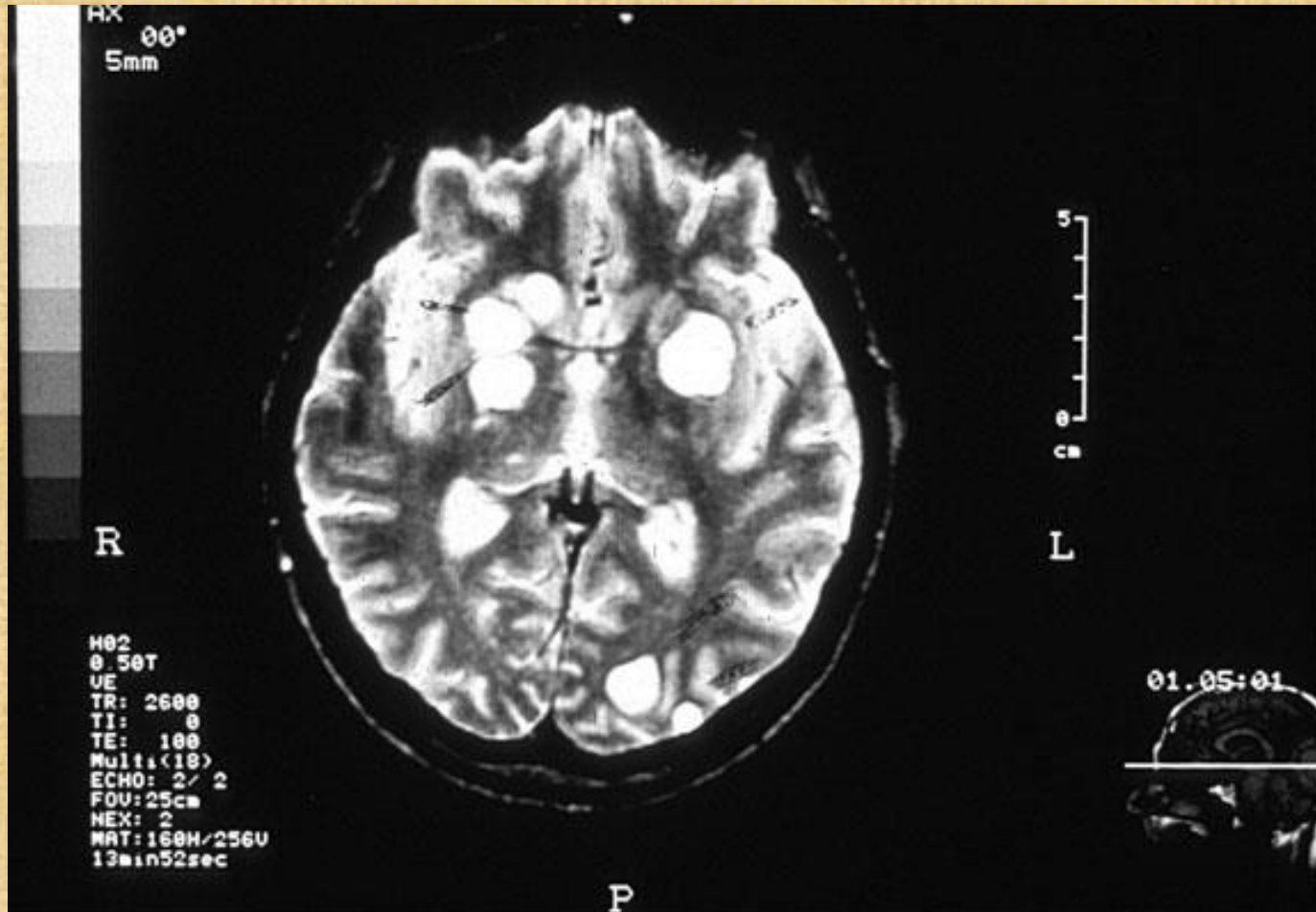
Cryptococcoma..tomography

Headache..neck

Meningo-encephalitis



MRI scan: Multiple cryptococcomas (white masses)



Other sites:

➤ Skin lesions (single or multiple):

3th(lung.CNS)

➤ In 5-10% of patients:

❖ Painless lesions of the face and scalp

Cutaneous cryptococcosis



Molluscum contagiosum: The multiple small dome-shaped umbilicated papules



➤ Bone lesions:

- ❖ In 5-10% of patients; osteomyelitis
- ❖ Joint or muscle involvement is unusual.

Epidemiology:

4th in AIDS..A(Grubi)..99%

1-Collection of samples:

Skin

Bone

Sputum

BAL

CSF..5-10 ml

2-Direct examination:

India ink preparation



Lung tissue; Mayer's mucicarmine



3-Culture

❖ Media:

➤ Niger seed (bird seed) agar(37)

➤ SC

But Blood:

lysis centrifugation isolator method
or Bactec

4-PCR

➤ DNA probes

➤ Sensitive, specific, and rapid

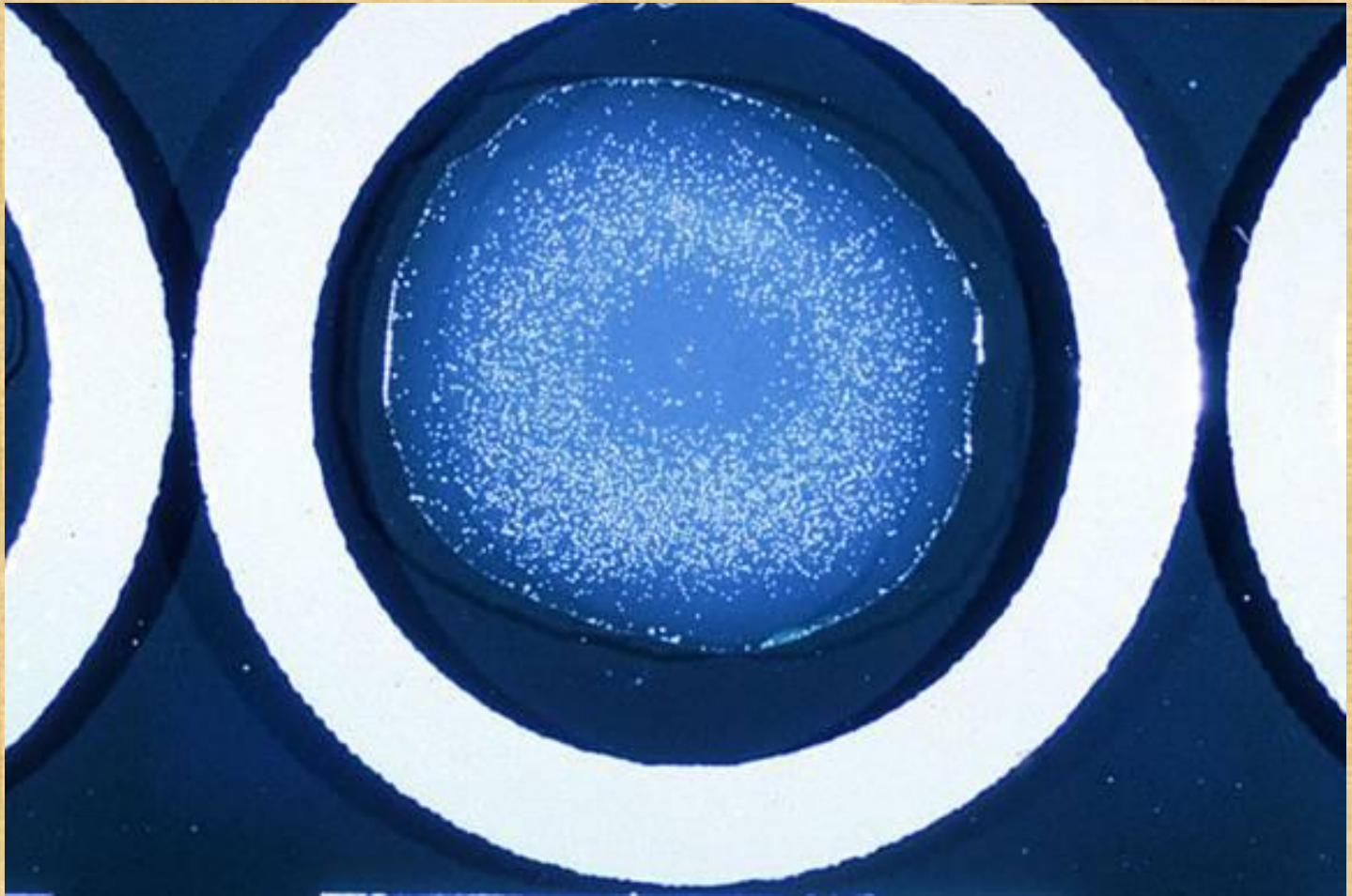
5-serology:

❖ Antigen detection test: LA

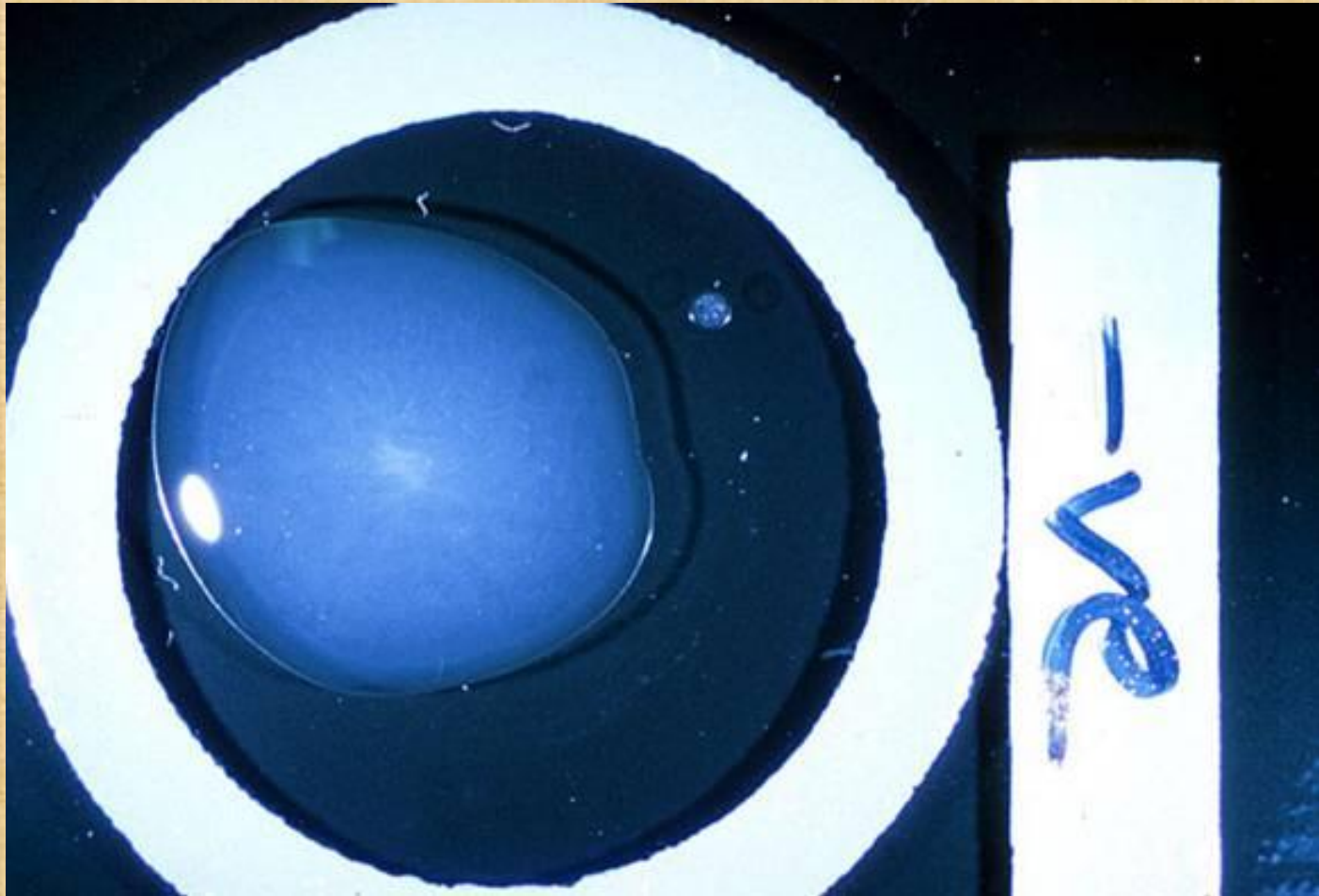
➤ In AIDS patients: 100%

➤ In non-AIDS patients: 60%

A positive LA test



A negative LA test



Anticryptococcal antibodies:

- Not useful for diagnosis

In HIV patients:

CNS cryptococcosis:

- Amphotericin B + Flucytosine (2 weeks)
- Fluconazole (400-800)...8-10 weeks
- Fluconazole (200)

