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MYKODERMO*ASSAY* DTM

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***In vitro* diagnosticum**

Special agar for the qualitative detection of veterinary relevant dermatophytes in pocket pets, pets and farm animals

INSTRUCTIONS FOR USE

Supplied Excusively To The UK
Veterinary Market By
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1. INFORMATION ON THE TEST-KIT

TEST-KIT COMPONENTS

1 Test-kit **MYKODERMO*ASSAY* DTM** contains:
– 12 agar vials with dermatophyte special agar
– 1 instructions for use

STABILITY AND STORAGE

Storage optionally at 2–8 °C or at 15–25 °C*

Expiry date – see label

* shelf life reduced by 12 months at 15–25 °C

APPLICATION

For veterinary use only

In vitro diagnosticum

Follow instructions for use precisely

LOT Lot number

! Do not use test-kit components from different kits, lot numbers or beyond stated expiry date.

LIABILITY

The entire risk due to the performance of this product is assumed by the purchaser. The manufacturer shall not be liable for indirect, special or consequential damages of any kind resulting from the use of this product.

2. INTRODUCTION

Dermatophytoses/ringworm belong to the most frequent infectious dermatoses in pocket pets, pets and farm animals, but also in humans (zoonosis).

They are caused by dermatophytes, filamentous fungi using keratin (skin, hair, claws and horns) as carbon source.

The clinically most relevant vet. species are Trichophyton (*T. verrucosum*), Nannizzia (*N. gypsea* [earlier *Microsporum gypseum*], *N. persicolor* [earlier *Microsporum persicolor* / *Epidermophyton persicolor* / *Trichophyton mentagrophytes*]) and Microsporum (*M. canis*). Beside age and immunosuppression, familiar, breeding (especially persian cats) and keeping conditions (breeding, animal shelter, hunting dog, multiple species keeping), travelling, lactation (transmission of infection to puppies) as well as e.g. ectoparasite based diseases and debilitated animals play an important role in developing a ringworm disease. Warm and humid climate is an additional trigger.

In case of clinical suspicion of an ongoing dermatophytosis (spotted, patchy areas of alopecia, often non-pruritic), mycological cultivation using dermatophyte specific media is known to be the most reliable technique.

The **MYKODERMO*ASSAY* DTM** is a classical dermatophyte medium in agar vials with tilted agar. It ensures a fast evaluation of the clinical suspected diagnosis through colour change of the agar.

This enables the veterinarian in suspicious cases to identify a dermatophytosis and initiate a specific therapy.

3. INFORMATION ON THE SPECIMEN MATERIAL

Sampling should be done optimally before therapy!

Taking an optimal sample (amount/purity degree) is the most critical step for the growth of potential dermatophytes. The more hair, dandruff and/or scrabs as well as feathers are used, the less the likelihood to get a false negative fungal culture result.

The growth and therefore the identification of the dermatophytes in the agar depends on the amount and the selected site of the suspicious sample material.

4. SPECIMEN COLLECTION AND PREPARATION

a. Clean the chosen sampling area with 70 % alcohol to reduce a potential bacterial and/or saprophytic contamination.

b. Remove scraping from skin (with a scalpel) or hair with root, dandruffs and crusts (with clippers) **from the edge of the lesions**.

5. TEST PROCEDURE

1. With help of a new sterile scalpel, spread the obtained material evenly and generously on the surface of the agar. Leave a small seam at the edge of the tilted agar, so that approaching moulds can be recognized as contaminants.
2. Press the spread material well onto the agar surface so that the contact of the hyphae and/or spores to the agar is ensured. The tighter the contact, the faster and more intense the colour changes in the presence of dermatophytes (within 2–3 days) and their growth thereafter.
3. Close the lid lightly but not completely and incubate at 25–32 °C (77–90 °F) at daylight (no direct sunlight!). Higher temperatures (30–32 °C/86–90 °F) slow down the growth of mould cultures.
4. Check the inoculated agar vials daily up to 21 days for **colour change** and **colony growth**.
5. To avoid false positive test interpretation, it is important to recognize the growth of unwanted saprophyte colonies (mould growth).

6. READING OF THE TEST RESULT

- **Colour change**: from orange to red, first after 2–3 days, on average 3–7 days. First indication for dermatophyte growth.
- **Colony growth** on average after 5–10 days. Normally, whitish and partially stained colonies appear. In this case, they are yellow-brown at the agar side of the colony (turn over agar vial!)

Only a red discolouration around a whitish, softly yellowish to light orange, woolly-fluffy colony refers to the growth of a pathogen dermatophyte.

Mould colonies can be recognized on normally coloured (black-grey-green-brown) growth on the inoculation side of the colonies. Should a colour change of the agar happen, it appears significantly delayed by moulds.

- **Macroscopic-visual evaluation** of the colonies:
  The identification can be made due to colony size, shape and colour as well as their surface structure and texture of the margin.
- **Microscopic evaluation** (100–400× magnification):
  Take samples with an inoculation loop from different colony areas and/or at different times. In "cotton-woolly-like" areas rather hyphae can be found, whereas in powdry-plaster-like areas rather spores can be found. The identification results via following criteria: manifestation, width and septation of the hyphae, uniformity of the mycelium, forming of spiral hyphae and/or chlamydospores, formation of micro- (esp. *Trichophyton*) and/or macroconidia (esp. *Microsporum*).

7. PRECAUTIONS FOR USERS

- The guidelines for working in medical laboratories must be observed. It is recommended to wear disposable gloves and other personal protective equipment (protective clothing, possibly a face mask). Wash and disinfect hands after completing the test.
- Label sample material and associated agar vial to ensure a precise assignment.
- Use a new agar vial with tilted agar for each sample.
- The sample material must be seen as potentially infectious and disposed of accordingly, together with the used agar vials, before or after test procedure.

8. TEST PRINCIPLE

MYKODERMO*ASSAY* DTM contains a specific selective nutrient special agar optimised for the diagnostics of dermatophytes. It contains specific dermatophyte nutrients, colour indicators and growth inhibiting substances against bacteria and saprophytes (esp. moulds).

The agar belongs to the selective agar media specifically supporting the growth of dermatophytes. Furthermore, it contains phenol red as colour indicator. Dermatophytes particularly use proteins in the first days of growth. The substances resulting thereby cause the colour change of the agar after 2–3 days from orange to red. This colour change is an early hint for the growth of dermatophytes in the agar

This enables the veterinarian a fast and targeted initiation or continuation of an already initiated therapy.

9. INFORMATION FOR THE INTERPRETATION

- The interpretation of the test result should always be based on anamnestic and clinical data as well as the therapy and prophylaxis possibilities.

Agar	Colour indicator	Interpretation
DTM (Dermatophyte test medium) Special dermatophyte agar	**Colour change from day 2–3 on** orange → red	**Growth of dermatophytes** → optical differentiation of dermatophyte species

- Example pictures of growing dermatophytes on DTM agar can be downloaded from www.megacor.at/product/mykodermoassay_dtm.html
- A growth and a colour change from orange to red within 2–3 days indicate the presence of dermatophytes! In rare cases, also unspecific moulds, so-called "blackness fungi" (e.g. *Scopulariopsis, Chrysosporium*) can grow.
- In case of obvious mould growth (without/with colour change), the culture must be discarded! A new sample should be taken (considering issues 4. a+b!) and a new agar vial should be inoculated herewith.
- Treatment should be executed consistently until success of therapy (minimum 6–8 weeks).
- The success of therapy should be controlled with a new cultural testing with **MYKODERMO*ASSAY* DTM**. In case of a new positive test result, continue with treatment!
- At least two negative culture results at an interval of 4 weeks ensure a therapy success.