| | | | | | | |
|---|---|---|---|---|---|---|
| **PATIENT NAME:** Tulyp | | | **MRN:** 1080115 | | **VETERINARIAN:** | |
| **SPECIMEN ID:** | 505087 | | DRAW DATE: | 1-Apr-24 | FACILITY: | |
| SPECIES: | Canine | | RECEIVED DATE: | 4-Apr-24 | | |
| GENDER: | Female | | REPORT DATE: | 11-Apr-24 | | |
| AGE: | 2.5 | | SAMPLE TYPE: | Dried Serum - 2 | PH: | |
| WEIGHT: | 52.2 lb | | | | FAX: | |
| BREED: | Boxer | | | | | |

## Food Allergens

| Allergen | Class | Group | Allergen | Class | Group |
|---|---|---|---|---|---|
| Potato | 2 | Veg | | | |
| Pork | 1 | Meat | | | |
| Chicken | 1 | Meat | | | |
| Carrot | 1 | Veg | | | |
| Tomato | 1 | Fruit | | | |
| Gluten | 1 | Grain | | | |
| Melon | 1 | Fruit | | | |

*Only the top 38 allergen responses are displayed. See associated reports for full listing.*

## Environmental Allergens

| Allergen | Class | Group | Allergen | Class | Group |
|---|---|---|---|---|---|
| Orchard/Timothy Grass | 3 | Grass | Flea | 1 | Insect |
| Ryegrass | 3 | Grass | Sweet vernal grass | 1 | Grass |
| Cultivated rye | 3 | Grass | Mosquito | 1 | Insect |
| American dust mite | 2 | Mite | | | |
| Flour mite | 2 | Mite | | | |
| Cheese/mold mite | 2 | Mite | | | |
| Sheep's sorrel | 2 | Weed | | | |
| Bermuda Grass | 2 | Grass | | | |
| Bent grass | 2 | Grass | | | |
| European dust mite | 1 | Mite | | | |
| Alder/Birch | 1 | Tree | | | |
| Hazel | 1 | Tree | | | |
| Maple leaf sycamore | 1 | Tree | | | |
| Oak | 1 | Tree | | | |
| Acacia | 1 | Tree | | | |
| Cladosporium herbarum | 1 | Mold | | | |
| Aspergillus fumigatus | 1 | Mold | | | |
| Alternaria alternata | 1 | Mold | | | |
| Malassezia pachydermatis | 1 | Mold | | | |

*Only the top 38 allergen responses are displayed. See associated reports for full listing.*

| Total Class 1 | Total Class 2 | Total Class 3 |
|---|---|---|
| **19** | **7** | **3** |

### Responsive Groups

| | |
|---|---|
| Mite | Mold |
| Grass | Tree |

### Inflammation

**Normal**

**<0.5**

Normal: ≤ 4.0

### Vitamin D

**Sufficient**

**128.4**

Sufficiency:
100-150 ng/mL

### Clinical Signs Associated with Canine AD

*5+ is consistent with canine AD*

**The following criteria were indicated:**

- ■ Affected ear pinnae
- ■ Affected front feet
- ■ Age of onset <3 years
- ■ Chronic/recurring yeast infections
- □ Corticosteroid-responsive pruritis
- □ Mostly indoor lifestyle
- ■ Nonaffected dorsolumbar area
- □ Pruritis without skin lesions at onset

**5 Total - consistent with canine AD**

### Skin Microbiome & Infection

Bacteria/Fungi Ratio can help direct therapy based on overall composition.

| Bacteria | Fungi |
|---|---|
| **27%** | **73%** |

### Relevant Species

Species listed below are notable from the microbiome report. More details on microbiome pages.

| Species | Type | Signif. | Comments |
|---|---|---|---|
| Malassezia pachydermatis | yeast | High | promotes inflammation |
| Staphylococcus felis | bact. | Intermed | |
| Sphingomonas jaspsi | bact. | High | present in contaminated soil |
| Sphingomonas humi-swuensis | bact. | High | present in contaminated soil |

### Comments

Identifying the type of infection will help direct therapy and improve outcomes. If antibiotics will be used, reference the antibiotic resistance profile found at the end of the report.

Infections, secondary to hypersensitivites are common. The most common CAD associated environmental allergens are mites, pollens (grass, weed and/or tree), and mold, and common food allergens are beef, chicken, dairy, and wheat.

Clinical criteria have been developed to help distinguish Canine Atopic Dermatitis (CAD). Prior to a diagnosis of CAD, fleas and other ectoparasites should be ruled-out. Allergen tests are not diagnostic in isolation. Rather, they support a clinical diagnosis of CAD and are used to indicate which allergens may be triggering the disease. IgE has a relatively short half-life therefore class 1 allergens may represent weak allergic responses unrelated to CAD or prior allergy that the patient is not currently exposed to (ie, seaonal allergies) - care should be given to class 1 allergens accordingly. Class 2 and 3 allergens are moderate/strong reaction and worthy of immediate investigation.

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| | | | |
|---|---|---|---|
| **PATIENT NAME: Tulyp** | | **MRN:** **1080115** | **VETERINARIAN:** |
| **SPECIMEN ID #:** **505087** | | COLLECTION DATE: 1-Apr-24 | |
| SPECIES / SEX: Canine / F | | RECEIVED DATE: 4-Apr-24 | |
| BREED Boxer | | REPORT DATE: 11-Apr-24 | |
| AGE: 2.5 | | SAMPLE TYPE: Serum | |
| WEIGHT: 52.2 lb | | | |

| Class | Response | IU/mL | | Responses | | TOTAL ALLERGEN |
|---|---|---|---|---|---|---|
| 0 | None | ≤ 0.34 | NT = Not Tested | Class 1: | 19 | **RESPONSES** |
| 1 | Low | 0.35 - 3.49 | | Class 2: | 7 | **29** |
| 2 | Medium | 3.5 - 49.99 | | Class 3: | 3 | |
| 3 | High | ≥ 50 | | | | *See page 2 for more info* |

## FOOD ALLERGENS

### Meat  Responses: 2

| No | Name | Code | IU/mL | | Class |
|---|---|---|---|---|---|
| 1 | Pork | f26 | 0.78 | 1 | ▨ |
| 2 | Beef | f27 | <0.15 | 0 | |
| 3 | Duck | f581 | <0.15 | 0 | |
| 4 | Chicken | f83 | 0.38 | 1 | ▨ |
| 5 | Lamb | f88 | <0.15 | 0 | |
| 6 | Turkey | f284 | <0.15 | 0 | |
| 7 | Red deer | f867 | <0.15 | 0 | |
| 8 | Rabbit | f213 | <0.15 | 0 | |

### Vegetable, Fruit, Nut  Responses: 4

| No | Name | Code | IU/mL | | Class |
|---|---|---|---|---|---|
| 9 | Pea | f12 | <0.15 | 0 | |
| 10 | Soy bean | f14 | <0.15 | 0 | |
| 11 | Carrot | f31 | 2.88 | 1 | ▨ |
| 12 | Potato | f35 | 5.62 | 2 | ▨▨▨ |
| 13 | Sweet Potato | f54 | <0.15 | 0 | |
| 14 | Pumpkin | f225 | <0.15 | 0 | |
| 29 | Parsely | f86 | <0.15 | 0 | |
| 30 | Cabbage | f216 | <0.15 | 0 | |
| 31 | Cucumber | f244 | <0.15 | 0 | |
| 32 | Broccoli | f260 | <0.15 | 0 | |
| 33 | Cauliflower | f291 | <0.15 | 0 | |
| 34 | Radish | f310 | <0.15 | 0 | |
| 35 | Paprika | f218 | <0.15 | 0 | |
| 36 | Spinach | f214 | <0.15 | 0 | |
| 15 | Tomato | f25 | 1.86 | 1 | ▨ |
| 16 | Apple | f49 | <0.15 | 0 | |
| 17 | Orange | f33 | <0.15 | 0 | |
| 18 | Strawberry | f44 | <0.15 | 0 | |
| 19 | Blueberry | f288 | <0.15 | 0 | |
| 20 | Kiwi | f84 | <0.15 | 0 | |
| 21 | Melon | f87 | 1.78 | 1 | ▨ |
| 22 | Mango | f91 | <0.15 | 0 | |
| 23 | Banana | f92 | <0.15 | 0 | |
| 24 | Peach | f95 | <0.15 | 0 | |
| 25 | Pear | f94 | <0.15 | 0 | |
| 26 | Pineapple | f210 | <0.15 | 0 | |
| 27 | Plum | f255 | <0.15 | 0 | |
| 28 | Watermelon | f329 | <0.15 | 0 | |
| 37 | Peanut | f13 | <0.15 | 0 | |

### Dairy*  Responses: 0

| No | Name | Code | IU/mL | Class |
|---|---|---|---|---|
| 38 | Milk | f2 | <0.15 | 0 |
| 39 | Cheddar/gouda cheese | f81 | <0.15 | 0 |
| 40 | α-lactalbumin | f76 | <0.15 | 0 |
| 41 | β-lactoglobulin | f77 | <0.15 | 0 |
| 42 | Casein | f78 | <0.15 | 0 |
| 43 | Buttermilk | f805 | <0.15 | 0 |

### Egg  Responses: 0

| 44 | Egg white | f1 | <0.15 | 0 |
|---|---|---|---|---|
| 45 | Egg yolk | f75 | <0.15 | 0 |

### Yeast  Responses: 0

| 46 | Yeast, baker's | f45 | <0.15 | 0 |
|---|---|---|---|---|
| 47 | Yeast, brewer's | f450 | <0.15 | 0 |

### Grain*  Responses: 1

| No | Name | Code | IU/mL | | Class |
|---|---|---|---|---|---|
| 48 | Wheat | f4 | <0.15 | 0 | |
| 49 | Corn | f8 | <0.15 | 0 | |
| 50 | Rice | f9 | <0.15 | 0 | |
| 51 | Gluten | f79 | 0.85 | 1 | ▨ |
| 52 | Barley | f6 | <0.15 | 0 | |
| 53 | Oat | f79 | <0.15 | 0 | |
| 54 | Buckwheat | f11 | <0.15 | 0 | |
| 55 | Millet | f56 | <0.15 | 0 | |
| 56 | Lentil | f235 | <0.15 | 0 | |
| 57 | Sweet chestnut | f299 | <0.15 | 0 | |
| 58 | Linseed (Flax seed) | f333 | <0.15 | 0 | |

### Shellfish* & Fish*  Responses: 0

| No | Name | Code | IU/mL | Class |
|---|---|---|---|---|
| 59 | Crab / Shrimp | f23 / f24 | <0.15 | 0 |
| 64 | Blue mussel / Clam | f37 / f207 | <0.15 | 0 |
| 60 | Codfish | f3 | <0.15 | 0 |
| 61 | Tuna | f40 | <0.15 | 0 |
| 62 | Salmon | f41 | <0.15 | 0 |
| 63 | Mackerel | f206 | <0.15 | 0 |
| 65 | Trout | f204 | <0.15 | 0 |
| 66 | Herring | f205 | <0.15 | 0 |
| 67 | Sardine | f308 | <0.15 | 0 |
| 68 | Anchovy | f313 | <0.15 | 0 |
| 69 | Sea bass | f410 | <0.15 | 0 |

*Only groups marked with an asterisk are included in the responsive group classification on the first page.

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**PATIENT NAME:  Tulyp**          MRN:   **1080115**          **VETERINARIAN:**

| Class | Response | IU/mL | | |
|---|---|---|---|---|
| 0 | None | ≤ 0.34 | NT = Not Tested | |
| 1 | Low | 0.35 - 3.49 | | |
| 2 | Medium | 3.5 - 49.99 | | |
| 3 | High | ≥ 50 | | |

| Responses | |
|---|---|
| Class 1: | **19** |
| Class 2: | **7** |
| Class 3: | **3** |

**TOTAL ALLERGEN RESPONSES**

**29**

## ENVIRONMENTAL ALLERGENS

| **Animal** | | **Responses:** | **0** | |
|---|---|---|---|---|
| **No** | **Name** | **Code** | **IU/mL** | **Class** |
| 70 | Feline Dander | e1 | <0.15 | 0 |
| 71 | Wool, Sheep | e81 | <0.15 | 0 |
| 72 | Feather Mix | ex1 | <0.15 | 0 |
| 73 | Cattle Epithelium | e4 | <0.15 | 0 |

| **Insect* & Mite*** | | **Responses:** | **6** | |
|---|---|---|---|---|
| 74 | Flea | B22 | 1.18 | 1 |
| 75 | Cockroach | i6 | <0.15 | 0 |
| 76 | Bee venom | i1 | <0.15 | 0 |
| 77 | Fire ant | i70 | <0.15 | 0 |
| 78 | Mosquito | i71 | 1.02 | 1 |
| 79 | Silkworm pupa | - | <0.15 | 0 |
| 80 | European dust mite[1] | d1 | 3.4 | 1 |
| 81 | American dust mite[2] | d2 | 7.97 | 2 |
| 82 | Flour mite[3] | d70 | 7.53 | 2 |
| 83 | Cheese/mold mite[4] | d72 | 5.12 | 2 |
| 84 | Storage mite[5] | d73 | <0.15 | 0 |
| 85 | Tropical dust mite[6] | d201 | <0.15 | 0 |

| **Mold*** | | **Responses:** | **4** | |
|---|---|---|---|---|
| 86 | Penicillium notatum | m1 | <0.15 | 0 |
| 87 | C. herbarum | m2 | 1.36 | 1 |
| 88 | Aspergillus fumigatus | m3 | 0.7 | 1 |
| 89 | Candida albicans | m5 | <0.15 | 0 |
| 90 | Alternaria alternata | m6 | 0.38 | 1 |
| 91 | M. pachydermatis | m227 | 0.4 | 1 |

| **Other** | | **Responses:** | **0** | |
|---|---|---|---|---|
| 92 | House dust | h1 | <0.15 | 0 |
| 93 | CCD | o214 | <0.15 | 0 |
| 94 | Hevea latex | k82 | <0.15 | 0 |

| **Grass*** | | **Responses:** | **6** | |
|---|---|---|---|---|
| **No** | **Name** | **Code** | **IU/mL** | **Class** |
| 95 | Bermuda Grass | g2 | 6.20 | 2 |
| 96 | Orchard/Timothy Grass | g3 / g6 | >100 | 3 |
| 97 | Ryegrass | g5 | >100 | 3 |
| 98 | Cultivated rye | g12 | >100 | 3 |
| 99 | Sweet vernal grass | g1 | 2.76 | 1 |
| 100 | Common reed grass | g7 | <0.15 | 0 |
| 101 | Bent grass | g9 | 23.71 | 2 |

| **Tree*** | | **Responses:** | **5** | |
|---|---|---|---|---|
| 102 | Alder/Birch | t2 / t3 | 2.46 | 1 |
| 103 | Hazel | t4 | 0.43 | 1 |
| 104 | Maple leaf sycamore | t11 | 2.9 | 1 |
| 105 | Willow/Cottonwood | t12 / t14 | <0.15 | 0 |
| 106 | Oak | t7 | 0.72 | 1 |
| 107 | White Pine | t16 | <0.15 | 0 |
| 108 | Acacia | t19 | 1.64 | 1 |
| 109 | White Ash | t15 | <0.15 | 0 |
| 110 | Japanese cedar | t17 | <0.15 | 0 |

| **Weed*** | | **Responses:** | **1** | |
|---|---|---|---|---|
| 111 | Common ragweed | w1 | <0.15 | 0 |
| 112 | Plantain | w9 | <0.15 | 0 |
| 113 | Mugwort | w6 | <0.15 | 0 |
| 114 | Sheep's sorrel | w18 | 11.3 | 2 |
| 115 | Japanese hop | w22 | <0.15 | 0 |
| 116 | Ox-eye daisy | w7 | <0.15 | 0 |
| 117 | Dandelion | w8 | <0.15 | 0 |
| 118 | Russian thistle | w11 | <0.15 | 0 |
| 119 | Goldenrod | w12 | <0.15 | 0 |
| 120 | Common pigweed | w14 | <0.15 | 0 |

### Additional Information

1 *Dermatophagoides pteronyssinus*
2 *Dermatophagoides farinae*
3 *Acarus siro*
4 *Tyrophagus putrescentiae*
5 *Glycyphagus domesticus*
6 *Blomia tropicalis*

* Only groups indicated with an asterisk are included in the responsive group classification on the first page.

# Adverse Reaction to Food

**PATIENT NAME: Tulyp**   **SPECIMEN ID:** 505087   **MRN:** 1080115   **VETERINARIAN:**

## Background

Canine Adverse Food Reaction (CARF), can be a contributing factor to atopic dermatitis. CARF occurs when a dog's immune system reacts abnormally to certain components in their diet. This immune response triggers inflammation, which can manifest as skin symptoms such as itching, redness, and lesions (ie, atopic dermatitis).

**Clinical Presentation:** Dogs with CARF may exhibit signs of GI upset, such as vomiting and diarrhea, in addition to skin problems. The skin symptoms of CARF can be like those seen in atopic dermatitis, making it challenging to differentiate between the two conditions based solely on clinical signs.

**Diagnostic Approach:** Diagnosing CARF and its contribution to atopic dermatitis typically involves a combination of methods. These may include dietary elimination trials to identify allergenic ingredients, allergy testing, and response to treatment. Elimination diets are often used to identify specific food allergens that trigger the dog's symptoms.

**Diagnostic Challenges:** Cross-reactivity can complicate the diagnosis of food allergies and environmental allergies. Dogs with atopic dermatitis may exhibit clinical signs that overlap with both food and environmental allergies, making it challenging to determine the primary allergen triggering the symptoms. Understanding potential cross-reactivity patterns can aid in designing effective diagnostic strategies. The table below highlights known cross-reactivities.

**Treatment:** Management of CARF in dogs with atopic dermatitis usually involves dietary modification to eliminate the offending allergens. This may include feeding a hypoallergenic diet. In some cases, supplementation with EFA and symptomatic treatment with antihistamines or corticosteroids may be necessary to alleviate skin inflammation and itching.

It's important to note that while CARF can contribute to atopic dermatitis in dogs, not all cases of atopic dermatitis are caused by food allergies.

**KEY:**
- ● Indicates foods that have been linked to Adverse Food Reactions relating to pollen
- FOOD Foods in red text indicate those that had tested with a positive response (class I, II, III)
- Order Foods on the left are arranged by highest class of related pollen

### Primary Food-Pollen Cross Reactants

| Food | BIRCH (CLASS 1) | Timothy / Orchard Grass (CLASS 3) | Ragweed (No Response) | Mugwort (No Response) |
|---|:---:|:---:|:---:|:---:|
| Orange | | ● | | |
| Peach | ● | ● | | |
| Soybean | ● | ● | | |
| Tomato | | ● | | |
| Watermelon | | ● | ● | |
| Cantaloupe | | | ● | |
| Carrot | | | | |
| Celery | | | | |
| Honeydew | | | ● | |
| Peanut | ● | | | |
| Almond | ● | | | |
| Apple | ● | | | |
| Apricot | ● | | | |
| Banana | | | ● | |
| Cherry | ● | | | |
| Hazelnut | ● | | | |
| Kiwi | | | | |
| Pear | ● | | | |
| Plum | ● | | | |
| Barley | | | | |
| Bell Pepper | | | | ● |
| Broccoli | | | | ● |
| Cabbage | | | | ● |
| Cauliflower | | | | ● |
| Chard | | ● | | ● |
| Corn | | | | |
| Cucumber | | | | |
| Garlic | | | | ● |
| Millet | | | | |
| Onion | | | | ● |
| Parsley | | | | ● |
| Rice | | | | |
| Wheat | | | | |
| White Potato | | | ● | |
| Zucchini | | | ● | |

### Other Possible Food-Pollen Cross Reactants

| Food | Common reed grass (No Response) | Bent grass (CLASS 2) | Maple leaf sycamore (CLASS 1) | Oak (CLASS 1) | Russian thistle (No Response) | Japanese hop (No Response) |
|---|:---:|:---:|:---:|:---:|:---:|:---:|
| Orange | | | | | | |
| Peach | | | ● | | | |
| Soybean | | | | ● | | |
| Tomato | | | ● | ● | | |
| Watermelon | ● | | | | | |
| Cantaloupe | ● | | | | | |
| Carrot | ● | | | | | |
| Celery | ● | | ● | ● | | ● |
| Honeydew | ● | | | | | |
| Peanut | ● | | ● | ● | | |
| Almond | | | | | | |
| Apple | | | ● | | | |
| Apricot | | | | | | |
| Banana | | | ● | | | |
| Cherry | | | | ● | | |
| Hazelnut | | | | | | |
| Kiwi | | | ● | ● | ● | |
| Pear | | | | ● | | |
| Plum | | | | | | |
| Barley | ● | | | | | |
| Bell Pepper | | | | | | |
| Broccoli | | | | | | |
| Cabbage | | | | | | |
| Cauliflower | | | | | | |
| Chard | | | | | | |
| Corn | ● | | | | | |
| Cucumber | | | | | | |
| Garlic | | | | | | |
| Millet | ● | | | | | |
| Onion | | | | | | |
| Parsley | | | | | | |
| Rice | ● | | | | | |
| Wheat | ● | | | | | |
| White Potato | | | | | | |
| Zucchini | | | | | | |

See Cross-Reactivity pages for complete listing of possible cross reactants.

| PATIENT NAME: Tulyp | SPECIMEN ID: 505087 | MRN: 1080115 | VETERINARIAN: |
|---|---|---|---|

**Background**

Allergy cross-reactivity occurs when proteins in one substance resemble those in another, triggering an immune response. Common in food allergies, it's prevalent among similar plant species (e.g., pollen and certain fruits/nuts). For instance, a birch pollen allergy may lead to reactions to apples or hazelnuts due to shared proteins. Understanding possible cross-reactivity helps diagnose allergies and manage reactions.  Pet parents should be aware of these related triggers, and avoid them when possible.  However please note that cross-reactivity to an allergen does not automatically mean an immune response will occur in the presence of that substance. Consulting your veterinarian is crucial for tailored management plans, ensuring safety and minimizing allergic episodes.

| Allergen | Possible Cross Reactivities |
|---|---|
| Potato | Birch, grasses, mugwort, latex, tomato. |
| Pork | Cat serum, chicken serum. |
| Chicken | Egg yolk, fish, turkey, goose, and duck meat. |
| Carrot | Birch, celery, mugwort, apple, nuts, soybeans. |
| Tomato | Bell peppers, pineapple, banana, carrot, birch, Brazil nut, grass pollens, Japanese cedar, mugwort, apple, celery, latex. |
| Gluten | N/A at this time. |
| Melon | Peel of other gourds, latex. |

**PATIENT NAME:** Tulyp     **SPECIMEN ID:**   505087     **MRN:**   1080115     **VETERINARIAN:**

## Background

Allergy cross-reactivity occurs when proteins in one substance resemble those in another, triggering an immune response. Common in food allergies, it's prevalent among similar plant species (e.g., pollen and certain fruits/nuts). For instance, a birch pollen allergy may lead to reactions to apples or hazelnuts due to shared proteins. Understanding possible cross-reactivity helps diagnose allergies and manage reactions.  Pet parents should be aware of these related triggers, and avoid them when possible.  However please note that cross-reactivity to an allergen does not automatically mean an immune response will occur in the presence of that substance. Consulting your veterinarian is crucial for tailored management plans, ensuring safety and minimizing allergic episodes.

| Allergen | Possible Cross Reactivities |
|---|---|
| Orchard/ Timothy Grass | Cocksfoot, timothy grass, ryegrass, wheat pollens, perennial rye, lugrass/june, fescue, orchard, sweet vernal, redtop/bent/velvet, corn. |
| Ryegrass | Velvet grass, timothy, ryegrass, canary grass, orchard, members of Pooids and Chloridoids family. |
| Cultivated rye | Timothy, meadow, cocksfoot, false oatgrass, velvet grass, redtop grass, sweet vernal grass, perennial rye, other Pooideae family grasses. |
| American dust mite | Crustaceans (shrimp, crab, lobster), insects (cockroach, grasshopper), mollusks (snail, clams, oyster, squid). |
| Flour mite | Storage mites, house dust mites. |
| Cheese/mold mite | Storage mites, house dust mites, silkworm. |
| Sheep's sorrel | Buckwheat, Japnese Knotweed, rhubard, grass pollens. |
| Bermuda Grass | Timothy grass, giant Bermuda grass pollen. |
| Bent grass | Grasses, cereal pollen, beans, peas, peanut, melon, watermelon, carrot, celery. |
| European dust mite | Crustaceans (shrimp, crab, lobster), insects (silverfish, cockroach, grasshopper), mollusks (snail, clams, oyster, squid). |
| Alder/Birch | Birch, hazel, alder, oak, beech, hornbeam, chestnut, many fruits. |
| Hazel | Alder, birch, hornbeam, ash, olive, lilac, privet. |
| Maple leaf sycamore | Tree, weed, or grass pollen, corn, tomato, apple, kiwi, peach, banana, celery, peanut, peach, Alternaria altnerata, C. herbarum. |
| Oak | Birch, timothy grass, alder, peanut, hazelnut, soy, celery, cherry, chestnut, kiwi, pear, raspberry, soybean, strawberry, tomato, walnut. |
| Acacia | Saltwort, amaranth, white gooseneck, summer cyprus, mesquite, ryegrass. |
| Cladosporium herbarum | Mildew, molds, mushrooms, yeast (feremented foods and drinks), natural rubber latex. |
| Aspergillus fumigatus | Mildew, molds, mushrooms, yeast; Aspergillus, Alternaria, and Penicillium fungi. |
| Alternaria alternata | Most fungi. |
| Malassezia pachydermatis | Most fungi. |
| Flea | Black ant, black fly, and cockroach. |
| Sweet vernal grass | Grasses, timothy, orchard, velvet, ryegrass, june, brome, fescue, canary. Possibly lavender. |
| Mosquito | Proteins from bees, mites. |

**PATIENT NAME:  Tulyp**      **SPECIMEN ID:    505087**      **MRN:    1080115**      **VETERINARIAN:**

## Background

When it comes to supporting the immune system to help manage allergies in cats and dogs, there are several approaches and often multiple are chosen. While these strategies may help strengthen the immune response, it's important to note they should be used in conjunction with veterinary guidance.  Some immune support options for pets with allergies include: nutritional supplements, EFA, and Colostrum; all shown to have impacts on the immune response which may aid in the management of patients with allergies.

## Ultra EFA
**Rx Vitamins**

The fatty acids and phospholipids in Ultra EFA provide support to a wide variety organ systems including gastrointestinal, immune, and endocrine systems; all of which perform innate immune response functions. The omega-3 fatty acids can reduce systemic inflammatory response(s) when given in adequate doses over a sufficient period of time.  Additionally, skin and hair coat appearance and function are normalized by the nutrional co-factors provided by Ultra EFA.

Increased levels of omega-3s help counter-balance the omega-6 concentrations found in grain-based/grain-fed meat diets.  An increased omega-6:omega-3 ratio has been shown to contribute to tendancy for increased systemic inflammation.

| Standard Dosing | Patient-Specific Dosing |
|---|---|
| 1/4 teaspoon for each 15lbs of body weight - twice daily. <br><br> Dosage may be modified as per your veterinarian. | **1 teaspoon, twice per day** |
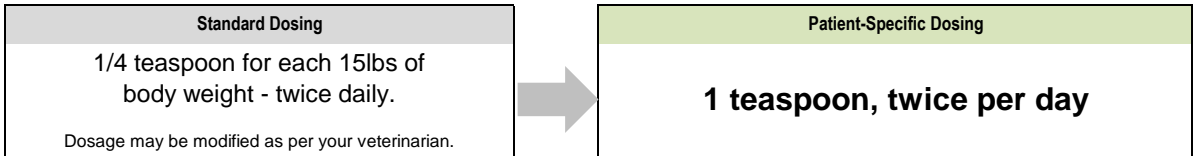
## Colostrum
**Rx Vitamins**

Rx Colostrum is whole, bovine, first milking  colostrum containing over 100 bioactive components of which immunoglobulins, cytokines and leukocytes are predominant. Rx Colostrum modulates the  gastrointestinal and immune systems therefore  helping to mitigate allergy symptoms. Companion  animals benefit both prophylactically and  therapeutically while enjoying the tasty, efficient  powder delivery format.

| Standard Dosing | Patient-Specific Dosing |
|---|---|
| 1 level scoop for each 25lbs of body weight - once daily. <br><br> Dosage may be modified as per your veterinarian. | **1.5 level scoops, once per day** |
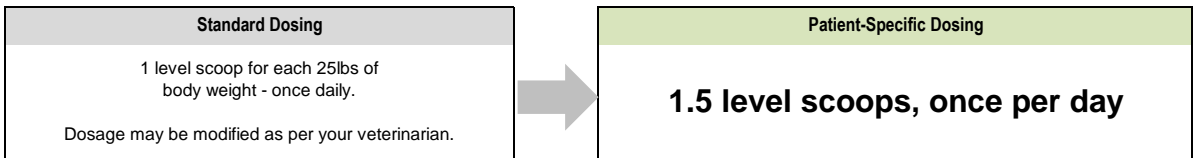
## Vitamin D3
**Rx Vitamins**

Vitamin D plays numerous roles of which one is regulation and support of the innate immune response.  Some critical functions are: upregulate antimicrobial peptides, modulate the adaptive immune response to trigger T cell activation, and influence cell differentiation.  In simple terms, Vitamin D sufficiency is anti-inflammatory and supportive of the immune system.

Research has also shown that Vitamin D sufficiency can improve the effects of steroid treatments for atopic dermaitits and that Vitamin D supplementation can improve pruritis and CADESI scores.  Cats and dogs are completely dependent on their diet for Vitamin D, which leaves many pets insufficient.  Reaching sufficiency is the only way to achieve the benefits of Vitamin D.  Test the Vitamin D level, supplement with Vitamin D3.
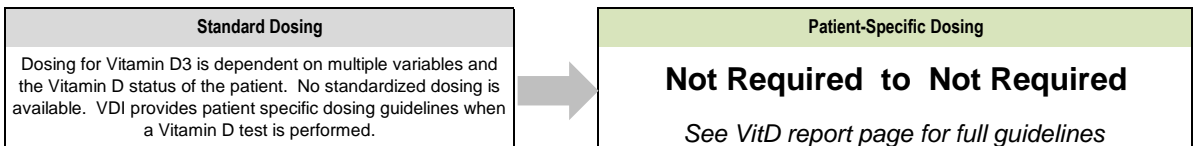
| Standard Dosing | Patient-Specific Dosing |
|---|---|
| Dosing for Vitamin D3 is dependent on multiple variables and the Vitamin D status of the patient.  No standardized dosing is available.  VDI provides patient specific dosing guidelines when a Vitamin D test is performed. | **Not Required  to  Not Required** <br><br> *See VitD report page for full guidelines* |

**Background**

Skin infections are a common result of hypersensitivities (allergies).  Managing the condition and resolving the underlying issue requires a multimodal approach, and not necessarily jumping directly to antibiotics, although they may be used in conjunction.  Below are products commonly used to manage atopy, pruritis, and infections commonly seen in allergy patients.  Guidance provided is general in nature, and should always be in consultation with a veterinarian before use.

## Antibacterial / Antifungal Combined

The products below are recommended when the primary cause of infection is yeast or fungus, but secondary bacterial infection is present from scratching.

| | Product Name | Product Type | General Guidance |
|---|---|---|---|
| | **StrataChlor®-CK Shampoo**<br>(Chlorhexidine & Ketoconazole) 16 oz.<br>Rx Vitamins | **Shampoo** | Use initially for 2 to 3 times per week for 4 weeks, then reduce to once per week. |
| | **StrataChlor®-CK Mousse**<br>(Chlorhexidine & Ketoconazole) 7 oz.<br>Rx Vitamins | **Leave on Mousse** | Apply directly to affected area(s) up to 3 times daily.  Do not allow animal to lick until product is dry. |
| | **StrataChlor®-CK Wipes**<br>(Chlorhexidine & Ketoconazole) 50 ct<br>Rx Vitamins | **Wipes** | Wipe affected area(s) with pad up to 3 times daily. Do not allow animal to lick until dry. Single use wipe. |
| | **StrataClens Tris Keto Flush**<br>(Tris w/ Ketoconazole) 12 oz.<br>Rx Vitamins | **Ear Cleanser** | Apply liberally to affected areas twice daily.Do not allow animal to lick until product is dry. |

## Antibacterial

Products listed in the Antibacterial section are recommended when there is a moderate to severe bacterial infection, including resistant staph infections.

| | Product Name | Product Type | General Guidance |
|---|---|---|---|
| | **StrataChlor®-4% Shampoo**<br>(Chlorhexidine 4%) 12 oz.<br>Rx Vitamins | **Shampoo** | Use initially for 2 to 3 times per week for 4 weeks, then reduce to once per week. |
| | **StrataClens Advanced Otic Solution**<br>(Alcohol Free) 8 oz.<br>Rx Vitamins | **Ear Cleanser** | Use 2-3 times daily over several day for dirty ears, or 1-2 times weekly for maintenance. |

## Antipruritic

Recommended for immediate relief of itching caused by hotspots, bug bites, or other skin infections.  StrataCalm-HC Spray contains Pramoxine HCL which is a topical anesthetic, with Hydrocortisone a topical steroid and anti-inflammatory.

| | Product Name | Product Type | General Guidance |
|---|---|---|---|
| | **StrataCalm-HC+ Anti-Itch Spray**<br>(Hydrocortisone & Pramoxine)<br>Rx Vitamins | **Shampoo** | Spray directly onto affected area(s) up to 3 times daily. Do not allow animal to lick until product is dry. |

# Microbiome Panel

| | | | | | |
|---|---|---|---|---|---|
| **Patient Name:** | Tulyp | **Health Status:** | | **Account #:** | 100A834 |
| **Owner's Name:** | | **Ordered by:** | | **Sample ID:** | MiV232410000105 |
| **Breed:** | Boxer | **Email:** | | **Sample Type:** | Skin/Feet |
| **Age:** | 2.5 | **Hospital:** | VDI Laboratory | **Received Date:** | 4/9/2024 |
| **Species:** | Dog | **Location:** | Chatsworth, CA | **Report Date:** | 04/11/24 |

## Potential Clinically Relevant Microbes Detected:

Listed are those bacteria and fungi detected in the specimen that are of potential clinical relevance. Results from this report should be considered together with clinical data gathered by the veterinarian (physical examination, medical history, cytology, etc.) as the microbes detected may or may not be the cause of the clinical condition. For a comprehensive list of all microorganisms detected in this specimen see page 3 of this report. The purpose of Significance is to highlight those species that are outside the expected range for the average clinically healthy animals. Please consider that even commensals can become pathogenic in certain patients under certain circumstances. Further, novel or extremely rare pathogens may be found on page 3 for your consideration and clinical diagnosis.

### 1.Bacteria

| Species Detected | Percentage | Cells per Sample | Normal Range | Significance |
|---|---|---|---|---|
| *Staphylococcus pseudintermedius* [1] | 1.5 % | 59,000 | 0-65,000 | 🟢 Normal |
| *Sphingomonas jaspsi* [2] | 1.0 % | 40,000 | 0-5,100 | ⚫ Intermediate |
| *Staphylococcus felis* [3] | 1.0 % | 40,000 | 0-0 | 🔴 High |
| *Bradyrhizobium sp.* | 0.7 % | 29,000 | NA | NA |
| *Sphingomonas humi-swuensis* [2] | 0.6 % | 22,000 | 0-1,100 | ⚫ Intermediate |

### 2.Fungi

| Species Detected | Percentage | Cells per Sample | Normal Range | Significance |
|---|---|---|---|---|
| *Malassezia pachydermatis* [4] | 95.7 % | 160,000 | 0-22 | 🔴 High |

**Abbreviation Key:**

🟢 **Normal.** Species detected within the reference range of clinically healthy animals.
⚫ **Intermediate.** Species detected outside the reference range of clinically healthy animals.
🔴 **High.** Species detected significantly higher than the reference range of clinically healthy animals.

The number of cells per sample is subject to variations based on sampling technique applied to collect the sample. Following the sampling protocol closely is highly recommended. Less than 1000 cells of Bacteria or less than 10 cells of Fungi are often not clinically relevant unless poor sampling technique was applied, or lower sample volume was submitted.

## Microbial Overview:

Fungi (73.0%) · Bacteria (26.9%)

**Bacteria vs Fungi**

**Bacteria**

*Malassezia pachydermatis (95.7%)*
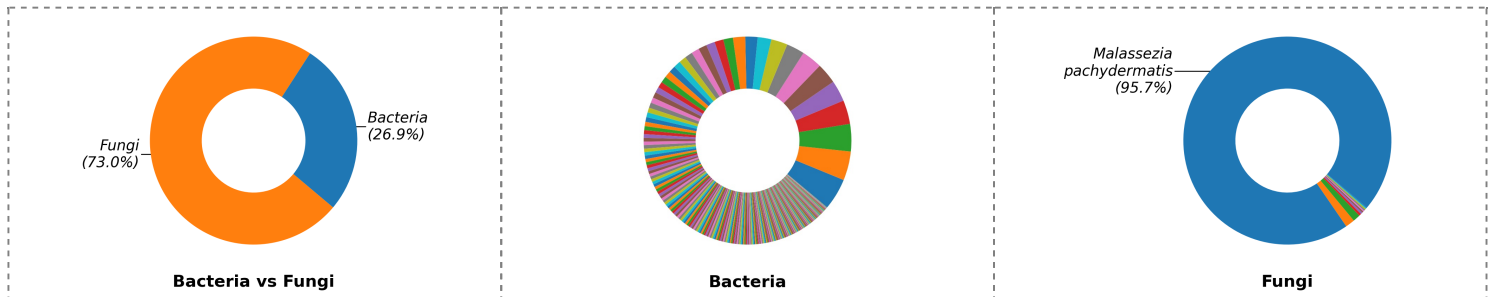
**Fungi**

**Bacteria vs Fungi**: the relative abundance between Bacteria and Fungi. **Bacteria**: the percentage profile of bacterial species alone. **Fungi**: the percentage profile of fungi species alone. Each color represents a species. The larger the colored segment is, the more abundant the species is.

![MiDOG Animal Diagnostics logo]

# Antibiotic Resistance for Detected Clinically Relevant Microbes

The sample was screened for the presence of antibiotic resistance genes and intrinsic resistances of clinically relevant microorganisms. For this analysis more than 90 antibiotic resistance genes were screeened. The cautious use of any antibiotic drug is highly reccommended. Please follow the guidelines for antimicrobial stewardship in veterinary practice.

This table lists antibiotic sensitivities/resistances for the indicated bacteria based on detection of specific antibiotic resistance genes and naturally occurring, or intrinsic, resistance to specific antibiotics previously identified for that organism.

| Drug Tiers* | Antibiotics | *Staphylococcus pseudintermedius* (1.5 %) | *Sphingomonas jaspsi* (1.0 %) | *Staphylococcus felis* (1.0 %) | *Bradyrhizobium sp.* (0.7 %) | *Nocardia sp.* (0.6 %) | Suggested Dose† | Drug Delivery |
|---|---|---|---|---|---|---|---|---|
| 1st | Cefazolin | NR | NRD | F | NRD | NRD | 15 mg/kg, q 12 hrs | IV, SC |
| | Cephalothin | NR | NRD | NRD | NRD | NRD | 4-20 mg/kg, q 8 hrs | PO |
| | Cephalexin | NR | NRD | F | NRD | NRD | 22 mg/kg, q 12 hrs | PO |
| | Cefadroxil | NR | NRD | NRD | NRD | NRD | 22 mg/kg, q 12 hrs | PO |
| | Cefoxitin | NR | NRD | G | NRD | NRD | 15 mg/kg, q 12 hrs | IV, SC |
| | Penicillin | NR | NRD | G | NRD | NRD | 8-10 mg/kg, q 8 hrs | PO |
| | Penicillin G | NR | NRD | G | NRD | NRD | -- | -- |
| | Oxacillin | NR | NRD | G | NRD | NRD | 22 mg/kg, q 8 hrs | IV |
| | Ampicillin | NR | NRD | NRD | NRD | NRD | 22 mg/kg, q 8 hrs | IV, SC |
| | Amoxicillin | NR | NRD | NRD | NRD | NRD | 22 mg/kg, q 8 hrs | PO |
| | Clavamox | NR | NRD | NRD | NRD | NRD | 13.75 mg/kg, q 12 hrs | PO |
| | Gentamicin | NR | NRD | G | NRD | NRD | 6 mg/kg, q 24 hrs | IV, SC |
| | Tobramycin | NR | NRD | NRD | NRD | NRD | -- | IV/Topical Use |
| | Neomycin | NR | NRD | NRD | NRD | NRD | -- | Topical Use |
| | Clindamycin | NR | NRD | G | NRD | NRD | 5.5 mg/kg, q 12 hrs | PO |
| | Lincomycin | NR | NRD | G | NRD | NRD | 15-25 mg/kg, q 24hrs | PO |
| | Doxycycline | NR | NRD | NR | NRD | NRD | 5 mg/kg, q 12 hrs | PO |
| | Minocycline | NR | NRD | NR | NRD | NRD | 10 mg/kg, q 12 hrs | PO |
| | Tetracycline | NR | NRD | NR | NRD | NRD | 20 mg/kg, q 12 hrs | PO |
| | Sulfonamide | NRD | NRD | NRD | NRD | NRD | 30 mg/kg, q 12 hrs | PO |
| | Trimethoprim-sulfamethoxazole | G | NRD | G | NRD | NRD | 15-30 mg/kg, q 24 hrs | PO |
| | Metronidazole | NRD | NRD | NRD | NRD | NRD | 10 mg/kg, q 8 hrs | IV |
| | Cefovecin | NR | NRD | NRD | NRD | NRD | 8 mg/kg, once | SC |
| 2nd | Cefpodoxime | NR | NRD | NRD | NRD | NRD | 5 mg/kg, q 24 hrs | PO |
| | Ceftiofur | NR | NRD | NRD | NRD | NRD | 2.2 mg/kg, q 24 hrs | SC |
| | Timentin | NR | NRD | NRD | NRD | NRD | -- | Topical Use |
| | Azithromycin | NR | NRD | G | NRD | NRD | 5 mg/kg q 12 hrs | PO |
| | Orbifloxacin | NRD | NRD | NRD | NRD | NRD | 2.5-7.5 mg/kg, q 24 hrs | PO |
| | Chloramphenicol | NRD | NRD | NRD | NRD | NRD | 35 mg/kg q 8 hrs | PO |
| | Florfenicol | NRD | NRD | NRD | NRD | NRD | 20 mg/kg, q 12 hrs | PO |
| 3rd | Amikacin | NR | NRD | F | NRD | NRD | 15 mg/kg, q 24 hrs | IV, SC |
| | Rifampin | F | NRD | F | NRD | NRD | 5-10 mg/kg, q 12 hrs | PO |
| | Imipenem | NR | NRD | NRD | NRD | NRD | 10 or 20 mg/kg, q 8 hrs | -- |
| | Levofloxacin | G | NRD | G | NRD | NRD | 10-30 mg/kg, q 24 hrs | IV/PO |
| | Marbofloxacin | NRD | NRD | NRD | NRD | NRD | 2.75-5.5 mg/kg, q 24 hrs | PO |
| | Pradofloxacin§ | NRD | NRD | NRD | NRD | NRD | 3.0 mg/kg, q 24 hrs | PO |
| | Enrofloxacin | NRD | NRD | NRD | NRD | NRD | 5 mg/kg, q 24 hrs | PO |
| | Ciprofloxacin¶ | G | NRD | G | NRD | NRD | -- | Topical Use |
| | Ceftazidime | NR | NRD | NRD | NRD | NRD | 3-30 mg/kg, q 6-8 hrs | IV |
| | Mupirocin | NRD | NRD | NRD | NRD | NRD | -- | Topical Use |
| | Nitrofurantoin | F | NRD | F | NRD | NRD | 4.4-5mg/kg, q 24 hrs | PO |
| | Colistin | NRD | NRD | NRD | NRD | NRD | 8-9g/kg, q 24 hrs | PO |
| | Ticarcillin | NR | NRD | NRD | NRD | NRD | 3.1 g, q 4-6 hrs | IV |
| | Piperacillin-Tazobactam | NR | NRD | NRD | NRD | NRD | 90 mg/kg, 30min q 8 hrs | IV |

**Abbreviation Keys:**

| | |
|---|---|
| NR | Not Recommended (Due to either Resistance Genes Detected, Intrinsic Resistance, or < 10% Effectiveness in Antibiogram Studies) |
| P | Poor Performance (< 50% Effectiveness in Antibiogram Studies) |
| F | Fair Performance (< 75% Effectiveness in Antibiogram Studies) |
| G | Good Performance (> 75% Effectiveness in Antibiogram Studies) |
| NRD | No Antibiotic Resistance Detected Based on the MiDOG Antibiotic Target Panel |

| | |
|---|---|
| PO | Oral, by mouth |
| IV | Intravenous Injection |
| SC | Subcutaneous Injection |
| TU | Topical Use |
| -- | No Info |

**Symbols:**

| | |
|---|---|
| * | Reference: Antimicrobial Resistance and Stewardship Initiative University of Minnesota, Antibiotic Drug Tiers and Selection List for Companion Animals. |
| † | Dosis may vary based on patient species and/or type of infection. Reference at: www.midogtest.com/antibiotics. |
| § | Variable bioavailability in animal patients. |
| ¶ | Contraindicated in animal patients. |

**MiDOG**
Animal Diagnostics

# Supplemental Data

## Total Bacteria Composition

Charts below depict the relative abundance of all detected bacterial species. Each color represents a different bacterial species. The larger the colored segment is, the more abundant that species is in the specimen.

**Your Sample**

**Clinically Healthy Reference**

The table below lists top 8 bacterial species detected within the limit of detection. The absolute and relative abundances of each species is shown. Potential clinically relevant microbes are highlighted in red.

| Species Detected | Percentage | Cells per Sample | Normal Range | Significance |
|---|---|---|---|---|
| *Nocardioides sp.* | 4.9 % | 190,000 | 0-160,000 | ⬤ Intermediate |
| *Gaiella sp.* | 4.5 % | 180,000 | NA | NA |
| *(o)Solirubrobacterales sp.* | 4.3 % | 170,000 | NA | NA |
| *(p)Chloroflexi sp.* | 3.7 % | 150,000 | 0-8,600 | ⬤ Intermediate |
| *(o)Gaiellales sp.* | 3.3 % | 130,000 | 0-3,500 | ⬤ Intermediate |
| *(f)Nocardioidaceae sp.* | 3.2 % | 130,000 | 0-71,000 | ⬤ Intermediate |
| *Marmoricola sp.* | 3.2 % | 120,000 | NA | NA |
| *Corynebacterium otitidis* | 2.8 % | 110,000 | 0-0 | ⬤ Intermediate |

## Total Fungal Composition

Charts below depict the relative abundance of all detected fungal species. Each color represents a different fungal species. The larger the colored segment is, the more abundant that species is in the specimen.

*Malassezia pachydermatis (95.7%)*

**Your Sample**

**Clinically Healthy Reference**

The table below lists top 8 fungal species detected within the limit of detection. The absolute and relative abundances of each species is shown. Potential clinically relevant microbes are highlighted in red.

| Species Detected | Percentage | Cells per Sample | Normal Range | Significance |
|---|---|---|---|---|
| *Malassezia pachydermatis* [4] | 95.7 % | 160,000 | 0-22 | 🔴 High |
| *Cladosporium sp.* | 1.4 % | 2,400 | 0-410 | ⬤ Intermediate |
| *Claviceps sp.* | 1.1 % | 1,900 | 0-1,200 | ⬤ Intermediate |
| *Alternaria sp.* | 0.4 % | 620 | 0-140 | 🔴 High |
| *(p)Ascomycota sp.* | 0.3 % | 480 | 0-67 | 🔴 High |
| *(k)Fungi sp.* | 0.2 % | 370 | 0-1,500 | 🟢 Normal |
| *(p)Chytridiomycota sp.* | 0.2 % | 330 | 0-0 | ⬤ Intermediate |
| *(o)Hypocreales sp.* | 0.2 % | 330 | 0-31 | ⬤ Intermediate |

**Abbreviation Key:**

🟢 **Normal.** Species detected within the reference range of clinically healthy animals.

⬤ **Intermediate.** Species detected outside the reference range of clinically healthy animals.

🔴 **High.** Species detected significantly higher than the reference range of clinically healthy animals.

![MiDOG Animal Diagnostics logo]

## Antimicrobial Resistance Genes Detected

The table below lists antimicrobial resistance genes that are detected in this sample. For antibiotics usage guidance, please first refer to the "Antibiotic Resistance" table shown in Page 2. Use this table only as an additioanl resource when needed. Inferring antibiomicrobial resistance from the resistance genes detected should be cautious, espeically in a mixed microbial population.

| AMR_Gene_Detected | Resistance_Against | Function |
|---|---|---|
| ANT(6)-Ia | aminoglycoside | aminoglycoside nucleotidyltransferase |
| APH(3")-Ib | aminoglycoside | aminoglycoside phosphotransferase |
| ANT(4')-Ib | aminoglycoside | Kanamycin nucleotidyltransferase |
| APH(3')-Ia | aminoglycoside | aminoglycoside phosphotransferase |
| APH(3')-IIIa | aminoglycoside | aminoglycoside phosphotransferase |
| ANT(2")-Ia | aminoglycoside | aminoglycoside nucleotidyltransferase |
| AAC(3)-Ia | aminoglycoside | aminoglycoside acetyltransferase |
| APH(6)-Id | aminoglycoside | aminoglycoside phosphotransferase |
| lnuA | lincosamide | lincosamide nucleotidyltransferase |
| mecA | monobactam, carbapenem, cephalosporin, cephamycin, penam, penem | penicillin-binding protein 2a |
| mupA | mupirocin | alternative isoleucyl-tRNA synthetase |
| blaZ | penam | class A beta-lactamase |
| cmx | phenicol | chloramphenicol exporter |
| ermB | streptogramin, macrolide, lincosamide | ribosomal methylase |
| ermX | streptogramin, macrolide, lincosamide | ribosomal RNA methyltransferase |
| msrD | streptogramin, tetracycline,phenicol, macrolide, lincosamide | ABC-F ribosomal protection protein |
| sul1 | sulfonamide | dihydropteroate synthase |
| sul2 | sulfonamide | dihydropteroate synthase |
| tetK | tetracycline | tetracycline efflux pump |
| tetWNW | tetracycline | ribosomal protection protein |

# References

1. Pierezan, F., Olivry, T., Paps, J. S., Lawhon, S. D., Wu, J., Steiner, J. M., et al. The skin microbiome in allergen-induced canine atopic dermatitis. (2016) Veterinary Dermatology, 27(5):332-e82
2. Cusco, A., Belanger, J. M., Gershony, L., Islas-Trejo, A., Levy, K., Medrano, J. F., et al. Individual signatures and environmental factors shape skin microbiota in healthy dogs. (2017) Microbiome, 5(1), 139
3. Litser A., Moss S.M., Honnery M., Rees B., Trott D.J. Prevalence of bacterial ecies in cats with clinical signs of lower urinary tract disease: Recognition of Staphylococcus felis as a possible feline urinary tract pathogen. (2006) Veterinary Microbiology, 121 (1-2): 182-188
4. Meason-Smith, C., Diesel, A., Patterson, A. P., Older, C. E., Mansell, J. M., Suchodolski, J. S., & Rodrigues Hoffmann, A. What is living on your dog's skin Characterization of the canine cutaneous mycobiota and fungal dysbiosis in canine allergic dermatitis. (2015) FEMS Microbiology Ecology, 91(12):fiv139

# Methods

The MiDOG® All-in-One Microbial Test is a targeted, Next-generation DNA sequencing testing service able to identify molecular signatures unique to the identity and character of a specific microorganism. This test relies on safeguarded preservation and transport of collected samples, thorough extraction of DNA from all microbes present in the specimen, select amplification of microbial DNA followed by Next-generation DNA sequencing using the latest technologies from Illumina (Illumina, Inc., San Diego, CA). Data handling is done via curated microbial databases to accurately align DNA sequences to ensure precise and accurate (species-level) identification of all bacteria and fungi present in the specimen.

# When no Bacterial or Fungal Species are Detected:

When no bacterial or fungal species are detected in this test, this result may be due to a very low microbial load and/or low concentration of microbial DNA in the sample provided. In this case, we recommend re-sampling the area of interest and re-submitting specimen for analysis.

# Phylogenetic Rank Abbreviations

If the detected bacterial or fungal taxon could not be identified down to the genus level, the closest phylogenetic rank identified is provided. An abbreviation indicating the level of the rank is displayed aside. The meaning of the abbreviations is shown as:(p) Phylum level, (c) Class level, (o) Order level, and (f) Family level.

# Disclaimer

The information contained in this MiDOG® report is intended only to be factor for use in a diagnosis and treatment regime for the animal patient. As with any diagnosis or treatment regime, you should use clinical discretion with each animal patient based on a complete evaluation of the animal patient, including history, physical presentation and complete laboratory data, including confirmatory tests. All test results should be evaluated in the context of the patients individual clinical presentation. The information in the MiDOG ® report has not been evaluated by the FDA.