AnimalBiome

Luna's Microbiome Report

MARCH 11, 2019

SAMPLE #656XDG

Luna's Results

Overall diversity: Below Average

The overall diversity tells how much variety is present among the bacteria in your pet's sample.

Richness: Average

Richness is a count of the number of different kinds of bacteria. For example, if there are 4 lions, 4 leopards and 4 cheetahs in a wildlife park, the species richness of wild cats in the park equals 3.

Evenness: Below Average

Evenness tells us how close in numbers each different kind of bacteria is. If a microbiome has 4 different kinds of bacteria and each make up 25% of the microbiome, then it would have a very high evenness score. If 1 kind of bacteria makes up 97% of the sample and the other 3 each make up only 1%, it would have a very low evenness score.

What this means for you and Luna

Greater richness, evenness and diversity are associated with better health and fewer food sensitivities.

Lower diversity is associated with a number of health conditions, including Inflammatory Bowel Disease and Type 2 Diabetes.

GUT COMPOSITION

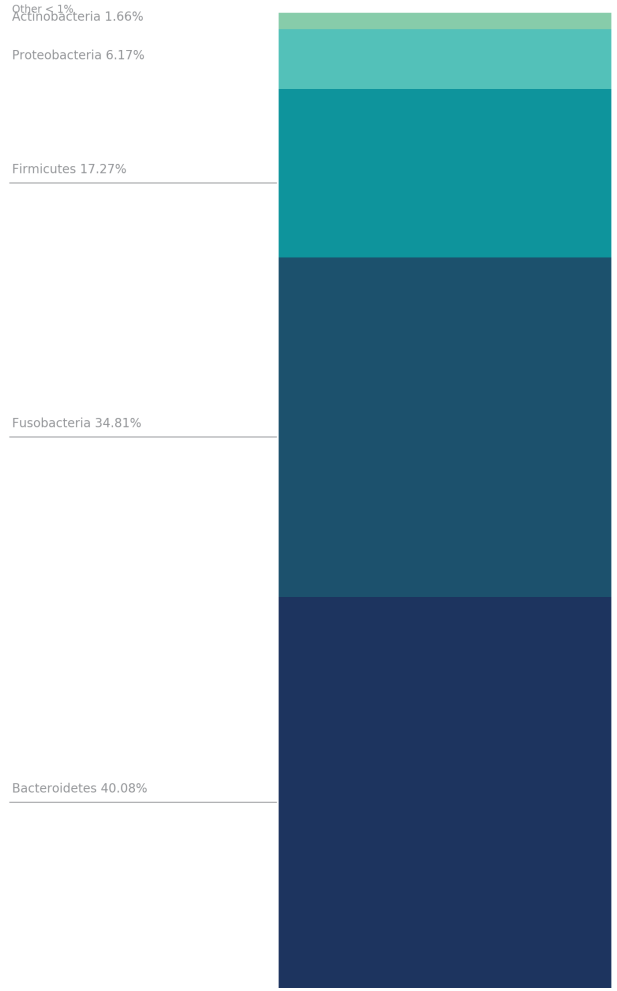
Inside Luna's Microbiome: The Phylum

If it's been a while since Biology 101, let us explain a bit: a phylum is a way that we classify large groups of species—in this case bacteria—to help us organize them. Phylum is smaller than kingdom and larger than family.

The most common bacterial phyla found in dogs, cats, and people are the **Bacteroidetes** and the **Firmicutes**. Fusobacteria is more abundant among carnivores like cats and dogs than in people. Proteobacteria and Actinobacteria may be more common in animals who have more fat in their diet.

A number of studies have explored the relationship between the ratio of Firmicutes to Bacteroidetes (F:B) and obesity. F:B ratios tend to be higher in dogs that consume more carbohydrates.

F:B Ratio: Average



COMPOSITION

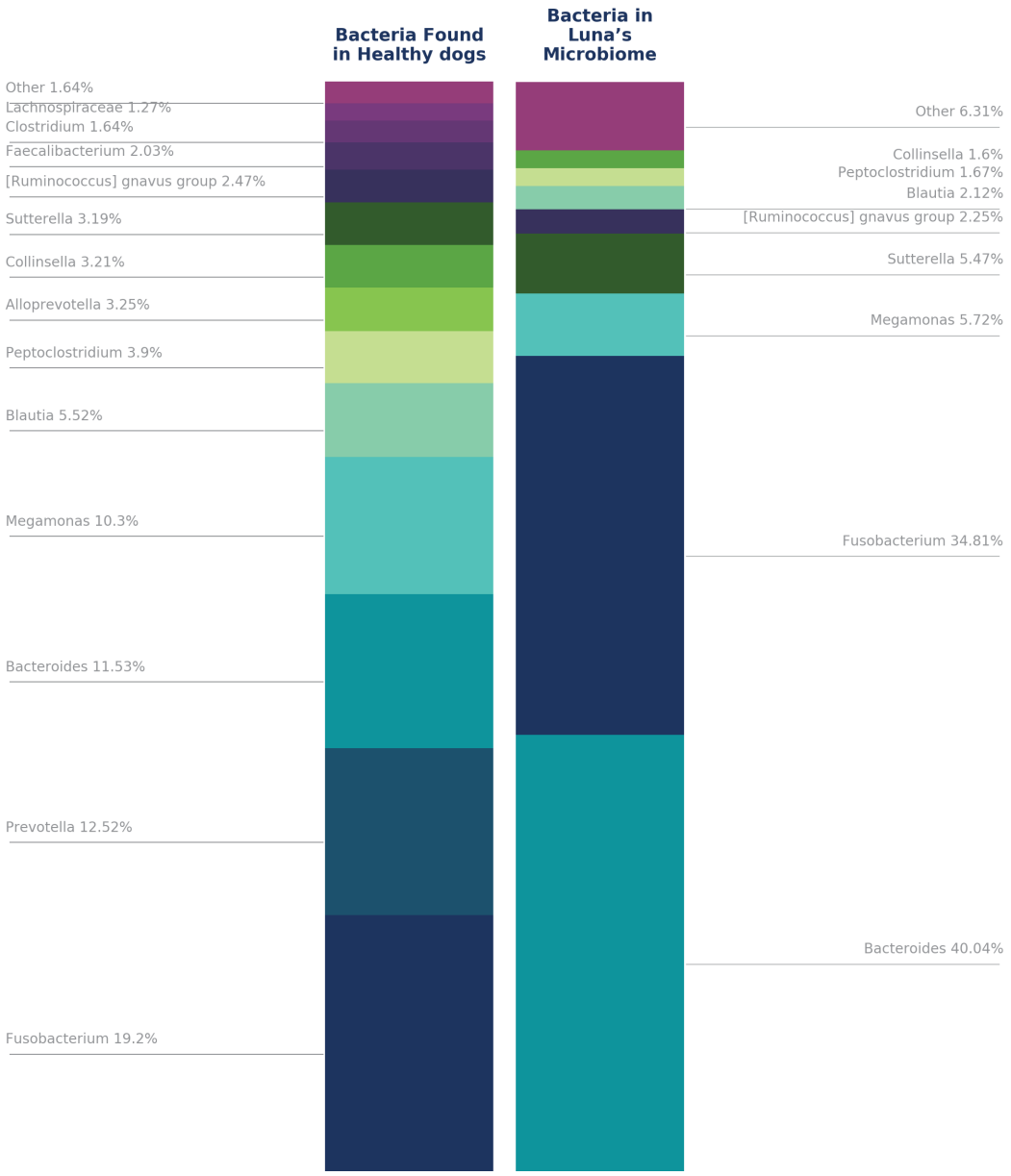
Inside Luna's Microbiome: The Genus

A little science refresher: The genus is a way that we classify smaller groups of species—in this case bacteria—to help us organize them. Genus is smaller than family and larger than species.

Healthy dogs have microbiomes with lots of different bacteria represented, and no single bacteria taking up too much space. That means that there are lots of different bacteria to do all of the jobs that need to be done in your dog's gut.

If not enough bacteria are present, not all the jobs get done. If you see a type of bacteria that makes up more than 10% of your dog's sample and is not found in the healthy dogs, these bacteria may be at an unhealthy level and they are highlighted on the chart in bold text.

See a description of each bacteria on the next page. **Are there bacteria listed in your pet's sample that aren't described here? Visit our Bacteria Library.**



COMMON BACTERIA IN HEALTHY ANIMALS

Luna compared with healthy dogs

Bacteroides

▲ High

40.04
Luna

11.5
Average For Healthy Dogs

Bacteria belonging to the Bacteroides genus help prevent harmful bacteria from colonizing in the gut. Pets with more of these bacteria tend to have healthier body weights. If your pet's sample is low in Bacteroides, consider adding a prebiotic supplement like psyllium husk powder, inulin, or acacia gum to help feed these bacteria.

Prevotella

0
Luna

12.5
Average For Healthy Dogs

Bacteria belonging to the Prevotella genus help digest carbohydrates in your pet's diet. They are present in moderate amounts in most healthy pets, but when they become too abundant, they are associated with unhealthy levels of inflammation. Prevotella may even play a role in chronic conditions like Inflammatory Bowel Disease (IBD). If your pet has too much Prevotella, consider decreasing or eliminating simple carbohydrates from their diet. This includes grains, starches, fruits, and vegetables.

Alloprevotella

0
Luna

3.2
Average For Healthy Dogs

Bacteria belonging to the Alloprevotella genus help digest proteins and complex carbohydrates in your pet's diet. They produce special compounds that fight inflammation in the digestive tract and throughout the body. Pets fed raw diets have higher levels of Alloprevotella compared to pets on non-raw diets.

Megamonas

5.72
Luna

10.3
Average For Healthy Dogs

Bacteria belonging to the Megamonas genus help regulate your pet's metabolism. Megamonas bacteria kick into high gear if your pet stops eating or is unable to absorb nutrients from their food; in these cases, the Megamonas bacteria help preserve energy so your pet does not lose weight. When too much Megamonas bacteria is present, however, it can make your pet more prone to becoming overweight.

Blautia

2.12	5.5
Luna	Average For Healthy Dogs

Bacteria belonging to the Blautia genus produce anti-inflammatory compounds that help protect the digestive tract from becoming damaged due to chronic inflammation.

Peptoclostridium

1.67	3.9
Luna	Average For Healthy Dogs

Bacteria belonging to the Peptoclostridium genus help protect your pet against a number of intestinal pathogens, including Clostridium difficile and certain harmful strains of Escherichia coli. Pets with healthy levels of Peptoclostridium tend to have healthier immune and digestive systems. These bacteria may be deficient in overweight or obese pets.

Collinsella

1.6	3.2
Luna	Average For Healthy Dogs

Bacteria belonging to the Collinsella genus help detoxify poisons and protect the gut against pathogens. While Collinsella are helpful in moderate amounts, an overgrowth can be problematic: elevated levels of Collinsella have been associated with diarrhea and Inflammatory Bowel Disease (IBD). Increasing fiber consumption may help to keep Collinsella levels in check.

Sutterella

5.47	3.2
Luna	Average For Healthy Dogs

Bacteria belonging to the Sutterella genus help keep the immune system active, counteracting other types of bacteria that suppress the immune system. Moderate levels keep your pet safe from illness; at the same time, higher levels are associated with digestive issues like diarrhea and food sensitivities.

[Ruminococcus] gnavus group

2.25	2.5
Luna	Average For Healthy Dogs

Bacteria belonging to the [Ruminococcus] genus possess potent anti-inflammatory properties and also help kill pathogens that have entered the digestive tract. To increase [Ruminococcus] levels, try adding a source of dietary fiber like psyllium husk, inulin, or acacia gum to your pet's diet.

Faecalibacterium

0.68	2
Luna	Average For Healthy Dogs

Bacteria belonging to the Faecalibacterium genus are more abundant in active animals at healthy weights. These bacteria also help combat inflammation in the body. Animals with Inflammatory Bowel Disease (IBD) and other chronic inflammatory conditions tend to have low levels of Faecalibacterium.

Clostridium

0.13 Luna

1.6 Average For Healthy Dogs

Bacteria belonging to the Clostridium genus have been linked with high-protein, low-carbohydrate diets, which are recommended for healthy weight loss. They also tend to be more abundant in pets that are on raw diets. But too much Clostridium can be problematic; to reduce Clostridium levels, consider adding S boulardii, a yeast-based probiotic, to your pet's regimen. This strain of yeast helps decrease the amount of Clostridium bacteria in the gut.

Lachnospiraceae

0.61 Luna

1.3 Average For Healthy Dogs

Bacteria belonging to the Lachnospiraceae family possess potent anti-inflammatory properties and also help kill pathogens that have entered the digestive tract. To increase Lachnospiraceae levels, try adding a source of dietary fiber like psyllium husk, inulin, or acacia gum to your pet's diet.

Escherichia Shigella

0.51 Luna

0.9 Average For Healthy Dogs

Bacteria belonging to the Escherichia genus are normally present at low levels in many healthy pets. However, excessive levels of particular strains have been linked with chronic diarrhea and other health issues.

Lachnoclostridium

0.32 Luna

0.8 Average For Healthy Dogs

Bacteria belonging to the Lachnoclostridium genus possess potent anti-inflammatory properties and also help kill pathogens that have entered the digestive tract. To increase Lachnoclostridium levels, try adding a source of dietary fiber like psyllium husk, inulin, or acacia gum to your pet's diet.

Fusobacterium

34.81 Luna

19.2 Average For Healthy Dogs

Bacteria belonging to the Fusobacterium genus help your pet digest animal proteins. If your pet lacks Fusobacterium, increasing the protein content in their diet will likely be helpful. At the same time, elevated levels of Fusobacterium are associated with diarrhea and chronic digestive issues, so moderation is key. For correcting overabundances of Fusobacterium, consider adding more dietary fiber to your pet's diet.

BACTERIAL BUDDIES.

Clostridium is a large group of bacteria that actively fights pathogens, prevents Leaky Gut Syndrome, and reduces food sensitivities and allergies. You might be familiar with pathogenic members of this group (C. difficile and C. perfringens). While these two normal inhabitants of the gut can cause problems when the gut is out of balance, the vast majority of Clostridium bacteria help to keep your pet healthy.

FEED FOR A HEALTHY GUT.

Beneficial Clostridium bacteria tend to be more abundant in pets on low-carbohydrate diets, particularly those that include raw meat.

To learn more, visit
ANIMALBIOME.COM

ACTIONABLE INSIGHTS

What's next for Luna?

Now that we've learned about Luna through analyzing her microbiome, let's turn our attention to how we can apply this knowledge to helping her live her best life today! If you have any questions, feel free to contact us at **team@animalbiome.com**

Support Luna's Gut Health

Luna's microbiome is out of balance compared with healthy dogs. We recommend restoring Luna's microbiome using our Gut Microbiome Restoration Supplement, which contain beneficial, dog-specific bacteria sourced directly from healthy dogs. These strains are not found in other probiotics, and will help us get Luna's microbiome back on track.

In addition, we've listed a few simple practices that you should consider implementing to support Luna's microbiome health in the long term.

Get physical

Exercise has been found to improve microbiome diversity in pets. Provide your dog with opportunities for daily exercise whenever possible.

Add variety

Introduce variety into your dog's diet to ensure you are supporting a variety of healthy gut bacteria. If your dog is particularly sensitive, be sure to give slow introductions to new foods or treats.

Stay hydrated

Luna needs plenty of fresh water daily to stay healthy, and so do her gut bacteria. Provide access to clean, fresh water every day.

Reduce medication

Overuse of medications like antibiotics, acid reducers, and NSAIDs can harm the microbiome. Talk to your veterinarian to see if it may be possible to safely reduce or eliminate these medications from your dog's regimen.