

NEW

PURINA[®]
PRO PLAN[®]

FortiFlora[®] PLUS

THE PROBIOTIC
YOU KNOW,
NOW FORTIFIED
WITH A PREBIOTIC

Fortiflora[®] PLUS pairs the probiotic SF68* with the prebiotic psyllium for synbiotic action to help maintain a healthy gut microbiome and long-term pet health.



**Enterococcus faecium* SF68 NCIMB 10415 (4b1705)

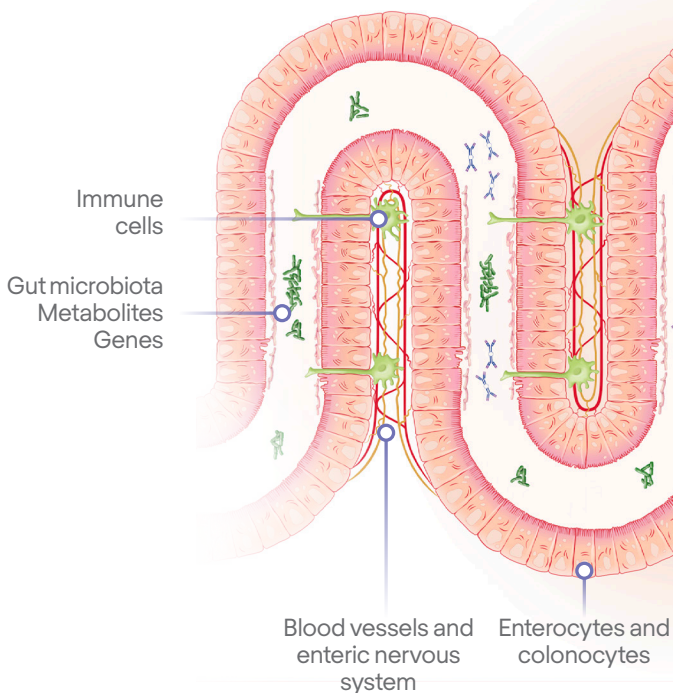
Understanding the importance of gut microbiome

Ground-breaking studies in humans and other mammals have implicated the **gut microbiome** in a range of physiologic processes that are **vital to host health**¹⁻⁴.

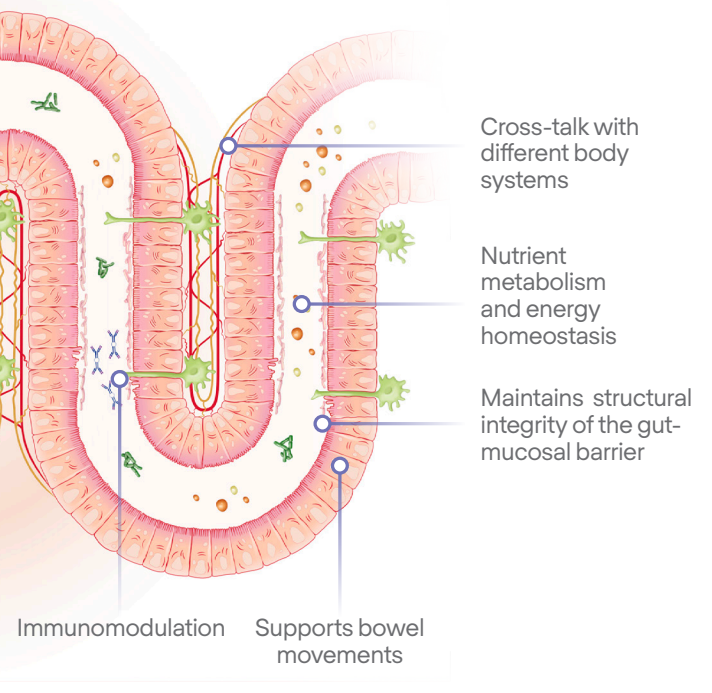
Purina scientists developed the **first study published** to demonstrate that the essential

features of the **human gut microbiome** are **mirrored in adult dogs**³ with **direct implications in their responses to diet**³ and future developments to improve **pet's gut microbiome health**.

What makes up the gut microbiome⁴?



Functions of the gut microbiome^{2,4,5}:



Meet the microbiome experts:



Jan Suchodolski
DVM, PhD, AGAF, DACVM.
Associate Professor and Associate Director of the GI Lab at the Texas A&M College of Veterinary Medicine and Biomedical Sciences.

"We should be moving away from focusing on harmful intestinal bacteria and moving in the direction of achieving microbiota balance".



Kelly S. Swanson
PhD.
Professor of Animal and Nutritional Sciences University of Illinois at Urbana-Champaign Urbana, Illinois.

"There is a complex communication between the host and the microbiota. This interactive cross-talk affects other body systems".

GUT GLOSSARY

Gut microbiome: microorganisms in the gut, along with their genes and metabolites, and the environment in which they reside.

Gut microbiota: the microorganisms that typically inhabit the gastrointestinal system.

Dysbiosis: changes in the composition of the gut microbiome associated with alterations between microbe-host homeostasis.

Prebiotics: substrates selectively utilised by beneficial bacteria, conferring a health benefit to the host.

Probiotics: live microorganisms, which when administered in adequate amounts confer a health benefit to the host.

Synbiotic: a combination of a probiotic and prebiotic that shows synergistic effect beneficial for the gut microbiome.

A healthy microbiome needs balance

When the microbiome is balanced, the diversity of the beneficial bacterial species **helps maintain homeostasis**⁴.

Internal and external factors can lead to a state of **dysbiosis**, which can affect both intestinal and extra-intestinal health^{2,4}.

A **healthy microbiome** promotes a resilient gut environment, maintaining **long-term pet health**⁴.

Factors that can alter the microbiome balance²

Consequences of microbiome imbalance



ANTIBIOTIC TREATMENT



DIETARY CHANGES



STRESS



ENVIRONMENT



HEALTH STATUS



GENETICS

GASTROINTESTINAL UPSETS^{2,4}

METABOLIC DYSADJUSTMENTS^{6,7}

SKIN ALTERATIONS⁸

BEHAVIOURAL CHANGES⁵

A combination of a prebiotic and a probiotic can help restore the balance of bacteria in the gut microbiome of pets⁹.

1. Eisenstein M. 2020. The hunt for a healthy microbiome. Nature vol 577.
2. Barko PC, McMichael MA, Swanson KS, et al. 2018. The gastrointestinal microbiome: a review. J Vet Intern Med 32:9-25.
3. Coelho LP, Kultima JR, Costea PI, et al. 2018. Similarity of the dog and human gut microbiomes in gene content and response to diet. Microbiome, 6(72).
4. Pilla R, Suchodolski J. 2021. The Gut Microbiome of Dogs and Cats, and the Influence of Diet. Vet. Clin. North Am. Small Anim 31, 3.
5. Dinan TG, Cryan JF. 2017. Gut-brain axis in 2016: Brain-gut-microbiota axis - mood, metabolism and behaviour. Nature Reviews Gastroenterology & Hepatology, 14(2), 69-70.
6. Nicholson JK, Holmes E, Kinross J, et al. 2013. Host-gut microbiota metabolic interactions. Science 336(6086):1262-1267.
7. Jergens AE, Guard BC, Redfern A, et al. 2019. Microbiota-related changes in unconjugated fecal bile acids are associated with naturally occurring, insulin-dependent diabetes mellitus in dogs. Front. Vet. Sci. 6:199.
8. Rostaher A, Morsy Y, Favrot C, et al. 2022. Comparison of the Gut Microbiome between Atopic and Healthy Dogs—Preliminary Data. Animals 12: 2377.
9. Pinna C, Biagi G. 2014. The utilization of prebiotics and synbiotics in dogs. Italian Journal of Animal Science, 13:3107.

New FortiFlora® PLUS

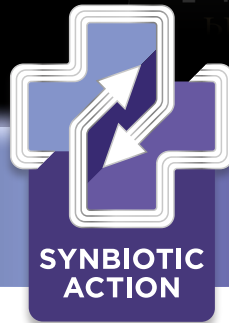
The probiotic you know, now fortified with a prebiotic

FortiFlora® PLUS is a proven **synbiotic** that offers a powerful **combination of a unique probiotic and a prebiotic** to promote the growth of beneficial bacteria in the gut and nourish a healthy microbiome.



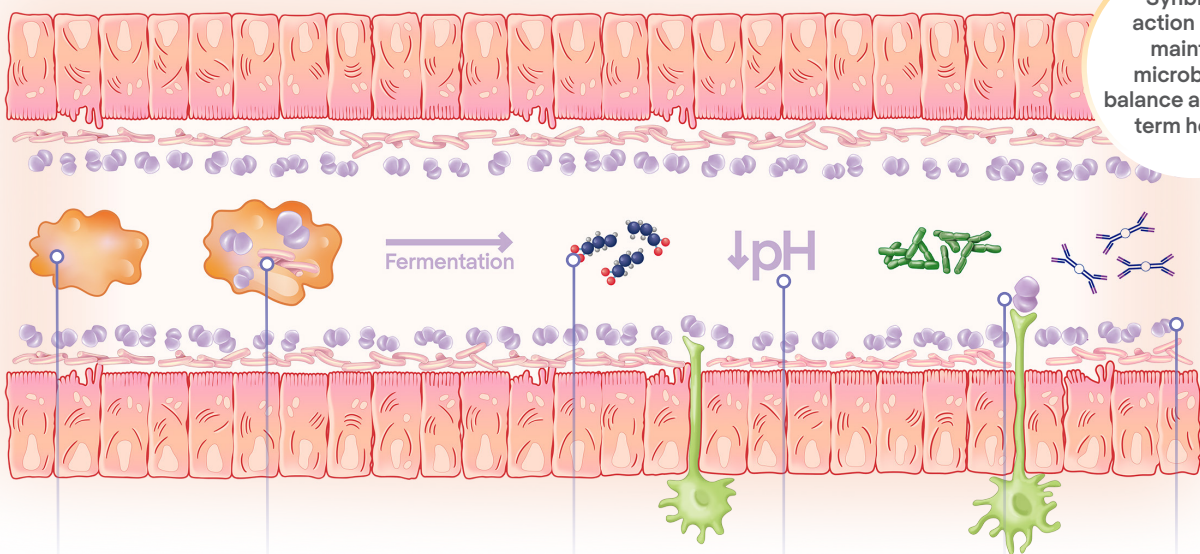
NEW

Probiotic
Enterococcus faecium (SF68)* is the active probiotic strain of FortiFlora® PLUS



Prebiotic
Psyllium is the prebiotic plant-based fibre of FortiFlora® PLUS

Synbiotic Action – A probiotic and prebiotic working together



Synbiotic action helps maintain microbiome balance and long-term health.

Psyllium has high water-holding capacity which helps normalise stool passage.¹

Psyllium is selectively fermented by beneficial bacteria, promoting their growth and resulting in short-chain fatty acids (SCFAs) production.^{1,3}

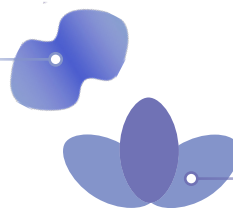
SCFAs, such as butyrate, are the primary fuel source for colonocytes.²

Fermentation reduces the intraluminal pH, hampering the colonisation by harmful bacteria.²

SF68* stimulates the intestinal immune cells and systemic immune response.⁵

SF68* creates a physical barrier, hampering the colonisation by harmful bacteria.⁵

DID YOU KNOW?
SF68* is a unique probiotic backed up with more than 15 years of scientific excellence.



DID YOU KNOW?
Psyllium is a prebiotic fibre with a double action of moderate fermentability and water-holding capacity^{3,4}.

* *Enterococcus faecium* SF68 NCIMB 10415 (4b1705)

1. Jalanka J, Major G, Murray K, et al. 2019. The effect of Psyllium husk on intestinal microbiota in constipated patients and healthy controls. *Int J Mol Sci.* 20:433.
2. Redfern, A., Suchodolski, J., and Jergens, A. 2017. Role of the gastrointestinal microbiota in small animal health and disease. *Veterinary Record.* 10.1136/vr.103826
3. Lieb MS. 2000. Treatment of Chronic Idiopathic Large-Bowel Diarrhea in Dogs with a Highly Digestible Diet and Soluble Fiber: A Retrospective Review of 37 Cases. *J Vet Intern Med;* 14(1):27-32.
4. Pitaes A, Santos A, Jorge P, et al. 2020. Evaluation of the effectiveness of psyllium husk for the management of chronic idiopathic large-bowel diarrhoea in police working dogs, in Proceedings. BSAVA Congress;418-419.
5. Bybee SN, Scorza AV, Lappin MR. 2011. Effect of the probiotic *Enterococcus faecium* SF68 on presence of diarrhoea in cats and dogs housed in an animal shelter. *J Vet Intern Med.* 25:856-8602.

When to use FortiFlora® PLUS

Recommended for

How it works

Administration guidelines

GASTROINTESTINAL DISTURBANCES

Gastrointestinal disturbances and loose stools associated with microbiome imbalance

Stimulates bacterial fermentation and favours the growth of beneficial bacteria, increasing microbiome diversity

Irregular bowel movements and poor faecal quality

Psyllium can help firm up stools and support intestinal motility thanks to water-holding capacity

Give 1 sachet of FortiFlora® PLUS every day, sprinkled on top of the regular food, until at least 7 days after the remission of the signs

Helping ease the passage of faeces

Reduction of flatulence in dogs

Psyllium is partially fermented which means less gas production compared with other fibres^{3,4}

LOOSE STOOLS

Loose stools associated with stress

Give 1 sachet of FortiFlora® PLUS every day, 3 days before the stressful event, during the whole period of stress and until at least 3 days after the end of the stress.

Loose stools associated with antibiotic use

Improves the survival and implantation of live beneficial bacteria in the gut, helping promote intestinal barrier integrity

Give 1 sachet of FortiFlora® PLUS every day during the antibiotic use and until 7 days after the last dose of antibiotic. For maximum efficacy, give Fortiflora® PLUS at least 3 hours before or after the antibiotic administration

Loose stools associated with diet change

Give 1 sachet of FortiFlora® PLUS a day, from 3 days before the start of the diet transition until 7 days after the pet has been fed entirely with the new diet

IMMUNE FUNCTION

Helping to promote immune system function

Supports the immune system at mucosal and systemic levels

Give 1 sachet of FortiFlora® PLUS every day, for at least 30 days

PALATABILITY

Palatability enhancement for pets with little appetite

Can be easily sprinkled on pets' food with great acceptance

Add 1 sachet of FortiFlora® PLUS daily to the regular food as long as palatability enhancement is required

The benefits of a balanced microbiome



The proven synbiotic action of FortiFlora® PLUS

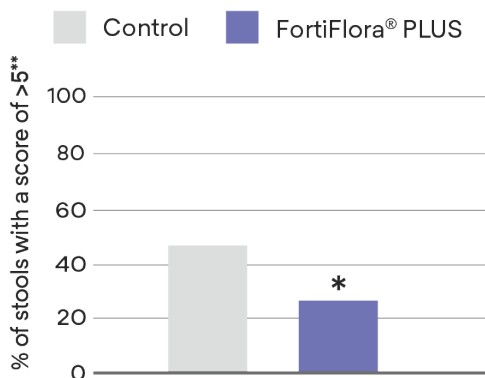
Clinical studies show the benefits of using FortiFlora® PLUS in maintaining gastrointestinal health

In vitro studies of cat and dog faecal samples combined with FortiFlora® PLUS showed a significant shift towards beneficial gut bacteria.

- Microbial diversity (number of species and relative abundance present) significantly shifted towards beneficial bacteria such as *Lactobacillus* spp and *Bifidobacteria* spp.
- The synbiotic action decreased intraluminal pH, which helps promote a more favourable environment for the growth of beneficial bacteria.

Nestlé Purina, internal data 2020

Effect of FortiFlora® PLUS can benefit adult cats with pre-existing antibiotic-associated loose stools (N=16).



*p<0.05

**Nestlé Purina Fecal Scoring Chart

- Supplementation reduced severity of loose stools and numerically improved time to resolution.
- 100% of cats administered with FortiFlora® PLUS resulted in complete recovery from loose stools whereas 25% of cats on placebo didn't recover during the period of study.

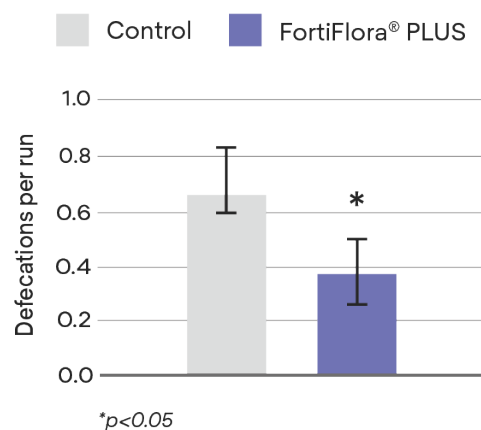
Lappin M, et al. ACVIM Forum Proceedings, 2020.

In healthy puppies, FortiFlora® PLUS increased gut microbiome diversity and abundance of beneficial gut bacteria (N=24).

- Supplementation significantly increased abundance of *Bacteroides*, *Alloprevotella*, and *Phascolarctobacterium* spp. which are all bacteria associated with fibre fermentation and short-chain fatty acids (SCFA) production.

Nestlé Purina, internal data 2020

Supplementation with FortiFlora® PLUS on healthy exercising dogs (N=40) during 4-month period improved faecal quality and frequency.



*p<0.05

- The average number of defecation events during training runs was significantly less for synbiotic-fed dogs, and faecal scores tended to improve during exercise.

Nestlé Purina, Internal data 2020.

Supplementation with *E. faecium* SF68 and psyllium influenced the gut microbiome diversity in exercising dogs (N=48) during 28 days.

- Supplementing with the synbiotic *E. faecium* SF68 and psyllium could enhance the beneficial role of a balanced microbiome in dogs, thereby contributing to their overall health maintenance.

Spears J.K, et al. ACVIM Conference Abstract, 2023.



NEW

Recommend FortiFlora® PLUS to help maintain a healthy intestinal microbiome, which can help maintain pet's long-term health

GUT HEALTH CONVERSATIONS DON'T HAVE TO BE COMPLICATED

Help pet parents understand how the microbiome can affect their pet's health with these simple conversation starters:

STEP 1: Start the story

"Your pet's gut hosts a unique community of hundreds of different types of bacteria and other microbes, named the gut microbiome".

"The gut microbiome is like a forest. When it is healthy, it contains different species of trees thriving in nature. But it can be disrupted by several factors, causing an imbalance between good and bad bacteria, which can affect your pet's health".

STEP 2: Ask Key Questions

Loose stools — What type of stools does your pet have? (refer to the faecal-score chart)

Flatulence — does your pet frequently pass gas?

Irregular bowel movements — does your pet not poo every day?









Little appetite — does your pet leave some of their meal in their bowl?

STEP 3: Check the faecal-score chart with your clients

The Purina Faecal Scoring Chart is a practical, easy-to-use tool that can help clients describe their pets' stools.

WHEN IT COMES TO GUT HEALTH — THE PROOF IS IN THE POO

The shape, size, content, colour, and consistency of your pet's poo can give you clues about their health.

SCORE	SPECIMEN EXAMPLE	CHARACTERISTICS	SCORE	SPECIMEN EXAMPLE	CHARACTERISTICS
1		<ul style="list-style-type: none"> · Very hard and dry · Often expelled as individual pellets · Requires much effort to expel from body · Leaves no residue on ground when picked up 	5		<ul style="list-style-type: none"> · Very moist but has a distinct shape · Present in piles rather than logs · Leaves residue on ground and loses form when picked up
IDEAL 2		<ul style="list-style-type: none"> · Firm, but not hard, pliable · Segmented in appearance · Little or no residue on ground when picked up 	6		<ul style="list-style-type: none"> · Has texture, but no defined shape · Present as piles or spots · Leaves residue on ground when picked up
3		<ul style="list-style-type: none"> · Log shaped, moist surface · Little or no visible segmentation · Leaves residue on ground but holds form when picked up 	7		<ul style="list-style-type: none"> · Watery · No texture · Present in flat puddles
4		<ul style="list-style-type: none"> · Very moist and soggy · Log shaped · Leaves residue on ground and loses form when picked up 	<div style="text-align: center;">  </div>		<p>FortiFlora® PLUS can help improve poo quality in pets of all ages.</p>



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NEW



SCAN THE CODE TO DISCOVER MORE

Please contact your PURINA[®] representative or visit
<https://www.vet-center.eu/eu> for more information