DR.VEGAN®

Good health starts in your gut

A comprehensive guide to gut health, pre and probiotics

Practitioner Paper • *For practitioner use only*

Gut health and systemic connection

The gut microbiome balance is systemically linked to health, affecting immunity,[1] mental health[2] and digestive function.[3] A healthy gut microbiota enhances nutrient absorption, supports immune homeostasis, and contributes to overall physiological resilience.

Immune system support

Approximately 70 to 80% of immune cells reside in the gut-associated lymphoid tissue (GALT).[4] Promoting a balanced gut microbiome supports immune resilience, helping to maintain mucosal immunity and reducing the risk of pathogen overgrowth.

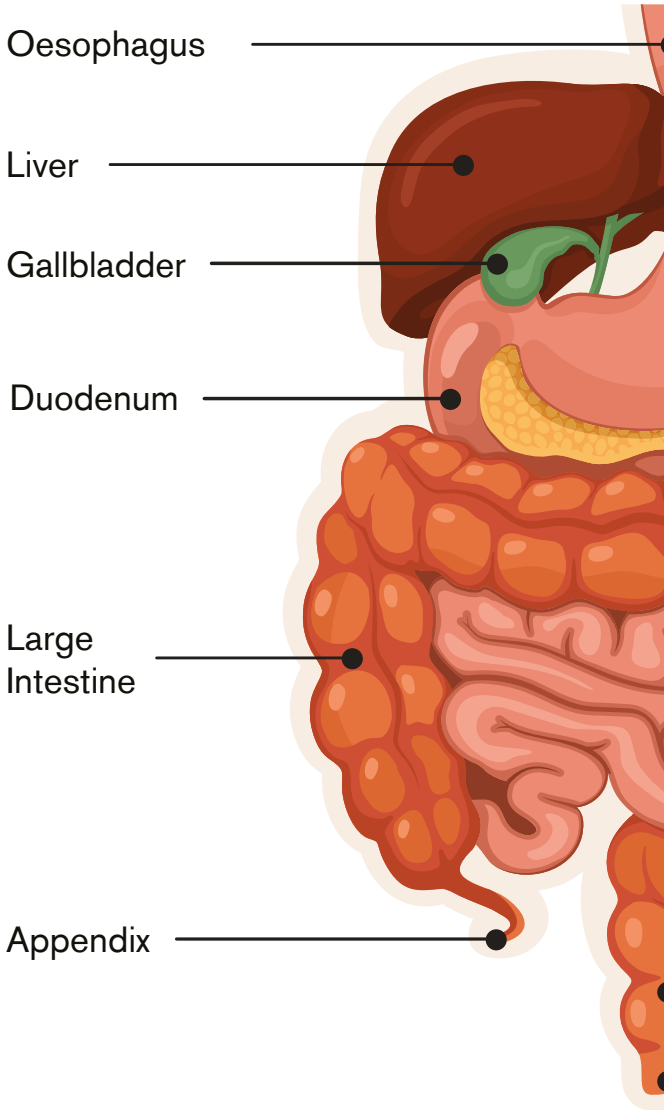
Microbiome and mental health

The gut-brain axis, a bidirectional communication network between the gut microbiota and the central nervous system, plays a significant role in mental health. The microbiome can influence neurotransmitter production, including serotonin and gamma-aminobutyric acid (GABA), which are involved in mood regulation.[4]

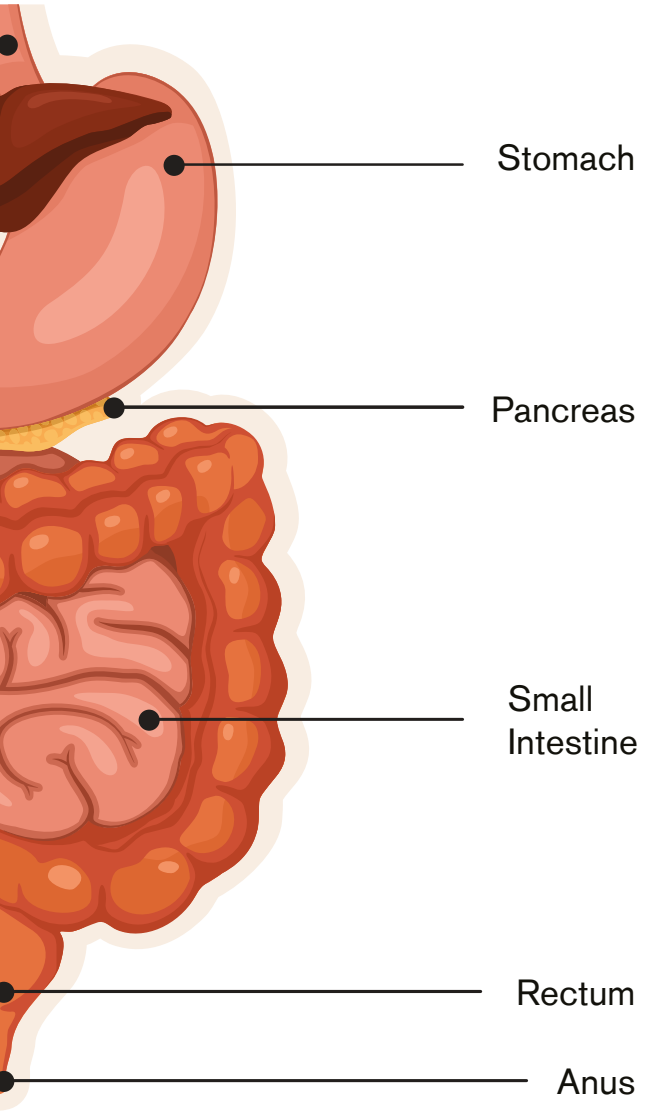
Digestive function and nutrient absorption

A diverse gut microbiome is essential for optimal digestive function. Probiotics help break down fibres and complex carbohydrates, producing short-chain fatty acids (SCFAs) that nourish the gut lining, regulate inflammation, and support overall GI health.[5] Enhanced digestion from a balanced microbiome also aids in efficient nutrient absorption, especially for essential vitamins and minerals.

DIGESTIVE



SYSTEM



DR.VEGAN® GUT HEALTH SURVEY INSIGHTS

75% of people
with gut health issues suffer a lack of energy.

46% of people
regularly suffer from symptoms of poor gut health and digestion.

Two thirds of people
have trouble with their weight as a result of poor gut health.

66% of people
said their gut health worsens when anxious.

30% of people
experience mild depression as a result of poor gut health.

44% of people
said their gut health restricts how they go about their daily life.

A third of people
avoid social contact and going out as a result of their gut health.

**Based on a UK survey conducted by DR.VEGAN® of 800 men and women including 246 customers, nationally representative, during August & September 2022. All customer survey findings reflect our own efforts and have not been influenced or verified by any external organisations or third-party entities.*

SUMMARY OF PROBIOTICS AND THEIR BENEFITS

	L. acidophilus	*L. rhamnosus*	*L. casei*	*B. lactis*	*S. thermophilus*	*L. plantarum*
Antibiotic-Associated Diarrhoea[7, 9]	✓	✓				
Bacterial Vaginosis[8, 10]	✓					✓
Clostridium Difficile Infection[11, 12, 13]	✓	✓	✓		✓	✓
Constipation[14, 15]		✓	✓			✓
Diverticular Disease[16, 17]	✓		✓			
Irritable Bowel Syndrome[18, 19, 20, 21]	✓	✓	✓	✓		✓
Traveller's Diarrhoea[22, 23, 24]	✓	✓	✓			
Dental Caries (Tooth Decay)[25]						✓

	L. acidophilus	*L. rhamnosus*	*L. casei*	*B. lactis*	*S. thermophilus*	*L. plantarum*
Allergic Rhinitis (Hay Fever)[26, 27, 28]	✓		✓ *	✓ *	✓ *	
Asthma[27, 28]			✓ *		✓ *	
Atopic Dermatitis[27, 28, 29, 30]		✓	✓ *		✓ *	✓
Prevention of Allergies[27, 28]			✓ *		✓ *	
Acne[31, 32]	✓	✓				
Upper Respiratory Infections[33]		✓		✓		
Urinary Tract Infections[24, 32, 36]	✓	✓	✓	✓		✓
Lowers Cholesterol[56, 57, 58, 59, 60, 61]	✓	✓	✓	✓	✓	✓

**Antiallery and immune modulating effects*

DIET AND LIFESTYLE TIPS FOR CLIENTS

Consume a diverse, fibre-rich diet

Fibre is needed to feed beneficial gut bacteria and promote a healthy balance in the gut microbiome. Include prebiotic-rich foods, as well as soluble and insoluble fibre.

Eat a variety of plant-based foods

Aim for 30 different plant foods weekly. This diversity provides a range of fibres and polyphenols that promote a diverse microbiome.

Consume fermented foods

Fermented foods introduce beneficial probiotics to the gut, promoting bacterial balance.

Reduce processed foods and added sugars

Excessive processed foods and sugars can harm the gut by promoting the growth of potentially harmful bacteria, disrupting the microbiome and leading to inflammation and gut imbalance. Some artificial sweeteners, like aspartame, have been shown to negatively affect gut bacteria.

Add omega 3 fatty acids

Omega 3 fatty acids are anti-inflammatory and have been shown to positively influence the gut microbiome.

Stay hydrated

Adequate hydration aids digestion and helps prevent constipation, allowing the gut to function smoothly.

Manage stress levels

Stress can significantly impact the gut microbiome, potentially leading to inflammation and digestive disturbances.

Manage sleep

Sleep is essential for gut health; it supports the body's repair processes and helps balance gut bacteria.

Limit antibiotics and NSAIDs when possible

While necessary at times, antibiotics and non-steroidal anti-inflammatory drugs (NSAIDs) can disrupt the gut microbiome.

Exercise regularly

Physical activity has been shown to positively influence the gut microbiome and enhance gut health.

Gut Works®

Combining prebiotics with 6 probiotic strains, including Lactobacillus acidophilus, Bifidobacterium and Streptococcus, in one daily delayed-release capsule, Gut Works® rebalances and repopulates your gut microbiome, fuelling your energy and mental performance. For IBS, bloating, fatigue, constipation, diarrhoea, gas, poor sleep and weight gain.

	PER 1 CAPSULE
Inulin	100mg
Lactobacillus acidophilus	Providing 12 billion live cultures*
Lactobacillus rhamnosus	Providing 8 billion live cultures*
Lactobacillus casei	Providing 8 billion live cultures*
Bifidobacterium lactis	Providing 12 billion live cultures*
Streptococcus thermophilus	Providing 5 billion live cultures*
Lactobacillus plantarum	Providing 8 billion live cultures*
Psyllium Husk	50mg

*At the time of manufacture

Ingredients

Inulin Powder, Lactobacillus Acidophillus DDS-1 (PTA-126813), Lactobacillus Rhamnosus LGG (PTA-126815), Lactobacillus Casei UALc-03™ (PTA-126831), Bifidobacterium animalis subsp. lactis: BB-12 (PTA-126817), Streptococcus Thermophilus TH-4 (PTA-126822), Lactobacillus Plantarum PPLP-217 (PTA-126812), Capsule Shell (Hydroxypropyl Methylcellulose), Psyllium Husk powder (Plantago ovata).

Free from

Added Sugar, Starch, Sweeteners, Gluten, Wheat, Soya, Lactose, Dairy, Artificial Flavours, Colours and Preservatives.

Pairs well with

MenoFriend®

PeriMenoFriend®

Stay Calm®

Hair Saviour®

Directions

- Take one capsule each day at least 20 minutes before or after any hot food.
- Probiotics are very sensitive to heat and warm air. Re-seal Gut Works® pouch securely each day. Keep the pouch away from any warm air or moisture. If at all uncertain, store Gut Works® in a frost-free fridge.
- Suitable to take alongside antibiotics. If taken with antibiotics, take Gut Works® 2-3 hours before or after the antibiotics.
- Suitable during pregnancy.

What customers can look forward to

1 week
Healthier bowel movements.

1 month
Support for energy and moods.

2 months
A difference in bloating and excessive wind and gas.

3 months
A healthy gut can support cognitive performance through the ‘gut-brain axis’.

KEY INGREDIENTS IN GUT WORKS®

The benefits of probiotics

Probiotics are an essential part of the intestinal microbiome and confer health benefits on the host. These beneficial bacteria exert their effects by both colonising the gut and passing through the gut (transient strains), where they contribute to the balance of the gut microbiota, playing a huge role in digestion, immune regulation, and overall metabolic health. Mechanistically, probiotics enhance mucosal immunity by interacting with gut-associated lymphoid tissue (GALT), modulating the production of immunoglobulins, cytokines, and other immune factors. They produce short-chain fatty acids (SCFAs) as by-products of fibre fermentation, which help maintain gut lining integrity, regulate pH, and suppress pathogenic bacteria growth. Certain strains influence the gut-brain axis by modulating neurotransmitter production, potentially impacting mood and cognitive function.

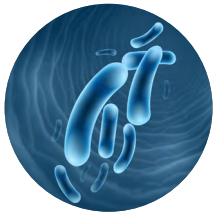
Lactobacillus acidophilus

Lactobacillus acidophilus is a Gram-positive bacterium known for producing lactic acid, which lowers the pH of the intestine and inhibits the growth of pathogenic bacteria. It also adheres to the gut epithelium, forming a protective barrier that prevents pathogen adhesion and colonisation. *L. acidophilus* produces antimicrobial compounds and survives the digestive tract of both healthy and sick individuals. In studies, it has been shown to reduce the risk of colon cancer and lower toxic amine levels in dialysis patients.[37,38] In addition, it produces lactase and supports lactose-intolerant individuals with the digestion of lactose.[39]

A meta-analysis of randomised controlled trials involving 1,171 people, concluded that *L. acidophilus* has a statistically significant benefit to immune markers. This includes an increase in CD4+ cells and the CD4+/CD8+ ratio, which reflects a healthy immune response. Levels of interleukin-6 (IL-6), a marker often linked with inflammation, were slightly lower and immunoglobulin A (IgA), an antibody critical for immune protection in mucosal areas like the gut, increased. Tumour necrosis factor-alpha (TNF-α) also showed a decrease.[40] In addition, *L. acidophilus* produces biofilms that protect against pathogen invasion.

Lactobacillus rhamnosus

Lactobacillus rhamnosus interacts with the gut epithelial cells, strengthening the intestinal barrier and producing biofilms that protect against pathogen invasion.[41] *L. rhamnosus* influences the gut-brain axis by modulating neurotransmitters such as gamma-aminobutyric acid (GABA), which impacts stress response.[42] The research concludes that *L. rhamnosus* has beneficial effects on IBS symptoms, particularly in diarrhoeal and alternating IBS subtypes. The research advises that *L. rhamnosus* is recommended for individuals with IBS.[43] *L. rhamnosus* supports the function of and protects the gut barrier,[44] which may be one of the main mechanisms of action for reducing the symptoms of IBS.



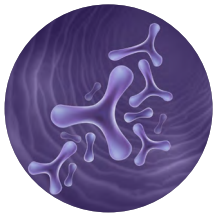
Lactobacillus casei

Lactobacillus casei is a versatile probiotic species with several unique traits that make it beneficial in clinical settings, particularly for gastrointestinal and immune health.

L. casei can survive harsh conditions, such as low pH and bile salts, making it well-suited to the human digestive tract. Its unique ability to adhere to intestinal cells enables it to form a protective layer that helps prevent pathogenic bacteria from colonising.

In IBS and other gut conditions, *L. casei* supports gut health by balancing the microbial balance, strengthening the intestinal barrier, and reducing inflammation by modulating immune responses. *L. casei* influences cytokine production, which helps mediate the body's inflammatory response, reducing discomfort and promoting gut integrity.

These benefits make *L. casei* a versatile probiotic, adaptable across diverse gastrointestinal and immune-related applications.



Bifidobacterium lactis

Bifidobacterium lactis is a well-researched probiotic strain known for its ability to support gut health and modulate immune function. It interacts with intestinal epithelial cells to enhance the integrity of the gut barrier, reducing permeability and protecting against pathogen translocation.[45] This mechanism plays a key role in maintaining gut homeostasis and mitigating inflammation. *B. lactis* exerts immunomodulatory effects by influencing cytokine production, including the upregulation of anti-inflammatory cytokines such as IL-10 and the downregulation of pro-inflammatory cytokines like TNF-a. These properties are particularly beneficial in managing inflammatory bowel conditions.[46] The strain also supports the digestion and absorption of nutrients by improving the activity of digestive enzymes and the fermentation of dietary fibres, which leads to the production of short-chain fatty acids (SCFAs) like butyrate. SCFAs contribute to gut barrier integrity and systemic metabolic health.[47]

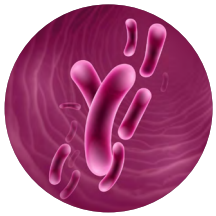
Streptococcus thermophilus

Streptococcus thermophilus is a probiotic strain known for its role in gastrointestinal and immune health. It plays a large role in maintaining gut barrier integrity by stimulating mucin production in the intestinal lining, which helps protect against pathogen adherence and invasion. This mechanism is particularly relevant in reducing gut permeability and enhancing epithelial resilience.[48]

S. thermophilus is a potent producer of lactic acid, which lowers gut pH and creates an unfavourable environment for pathogenic bacteria, thus promoting a balanced gut microbiome.

S. thermophilus contributes to the production of short-chain fatty acids (SCFAs), such as butyrate, which are essential for colonocyte health and anti-inflammatory effects. *S. thermophilus* improves lactose digestion and produces the enzyme ß-galactosidase, which breaks down lactose into more easily digestible sugars.[49]

S. thermophilus has demonstrated immunomodulatory properties by enhancing the production of secretory IgA, an essential component of mucosal immunity, and regulating inflammatory responses.[50]



Lactobacillus plantarum

Lactobacillus plantarum is a versatile probiotic strain with a wide range of applications for gastrointestinal and systemic health. It substantially enhances gut barrier integrity, decreases enterocyte apoptosis, improves intestinal oxidative stress, promotes the activity and expression of protein kinase, and enhances phosphorylation.[51] *L. plantarum* exhibits extensive antimicrobial activity through the production of bacteriocins.[52] This antimicrobial effect contributes to its efficacy in managing conditions like small intestinal bacterial overgrowth (SIBO) and gut dysbiosis. A key feature of *L. plantarum* is its strong anti-inflammatory properties. It modulates the immune system by balancing pro- and anti-inflammatory cytokines, which is particularly beneficial in managing inflammatory bowel diseases (IBD) such as Crohn's disease and Ulcerative Colitis.[53, 54, 55]

Inulin

Inulin is a naturally occurring prebiotic fibre found in chicory root, artichokes, asparagus, and onions. It is classified as a fructooligosaccharide (FOS), a type of carbohydrate composed of fructose chains that resist digestion in the upper gastrointestinal tract. Instead of being absorbed, Inulin reaches the colon, where it selectively stimulates the growth and activity of beneficial gut bacteria, particularly Bifidobacteria and Lactobacilli. Inulin serves as a substrate for beneficial bacteria, enhancing microbial diversity and promoting a healthy gut microbiome. This leads to the production of short-chain fatty acids (SCFAs), such as butyrate, acetate, and propionate, which improve gut health and systemic metabolic function.

Psyllium Husk

Psyllium Husk is a natural, soluble fibre derived from the outer husks of the seeds of *Plantago ovata*. It is used for its ability to promote gastrointestinal health and support systemic metabolic functions. Unlike many other fibres, Psyllium forms a gel-like substance when mixed with water, allowing it to regulate bowel movements and support gut barrier integrity. Psyllium absorbs water in the intestines, increasing stool bulk and moisture. This double action softens stools in individuals with constipation and firms them in cases of diarrhoea. Fermentation of Psyllium in the colon produces short-chain fatty acids (SCFAs), such as butyrate, which enhance colonocyte health, improve gut barrier function, and reduce inflammation.

DRUG INTERACTIONS

Interaction Severity		
Moderate	Antibiotics Drugs	*Lactobacillus* probiotics should be taken a minimum of 2 hours apart from antibiotic drugs.
	Carbamazepine	Psyllium may reduce the effects of this drug and increase the risk for convulsions.
	Digoxin	Psyllium may reduce the absorption of this drug. Take it at least 2 hours away from this drug.
	Lithium	Psyllium may reduce the absorption of this drug. Take it at least 2 hours away from this drug.
	Metformin	Psyllium may reduce the absorption of this drug. Take it at least 2 hours away from this drug.
	Olanzapine	Psyllium may reduce the absorption of this drug. Take it at least 2 hours away from this drug.

Drug-nutrient interactions have been taken from the Natural Medicines Database, October 2024.
Please do your own due diligence before recommending this product to individuals taking medicines.

REFERENCES

1. *Nature, volume, 535, pages, 65–74 (2016).*
2. *American Psychologist, Vol 72(7), Oct 2017, 655-667.*
3. *Biomedicines 2022, 10(12), 3117.*
4. *Nutrients 2021, 13(3), 886.*
5. *Nutrients 2020, 12(4), 1107.*
6. *Diabetologia 64, 1749–1759 (2021).*
7. *BMJ Open. 2021 Aug 12;11(8):e043054.*

8. *Sex Transm Dis. 1992 May-Jun;19(3):146-8.*
9. *J Pediatr. 1999 Nov;135(5):564-8.*
10. *Journal of Clinical Gastroenterology 48():p S106-S112, November/December 2014.*
11. *Journal of Hospital Infection. Volume 99, Issue 4, August 2018, Pages 443-452.*
12. *BMC Microbiol 17, 108 (2017).*
13. *Nutrients 2015, 7(12), 10179-10188.*
14. *World J Gastroenterol. 2013 Aug 7;19(29):4718–4725.*
15. *Ann Transl Med. 2022 Mar;10(6):316.*
16. *J Gastrointestin Liver Dis, September 2019 Vol. 28 No 3: 327-337.*
17. *IAP&T Volume 42, Issue 6, September 2015. Pages 664-684.*
18. *Nutrients. 2020 Jan 30;12(2):363.*
19. *World J Gastroenterol. 2014 Nov 21;20(43):16215–16226. Nutrients. 2020 Jan 30;12(2):363.*
20. *Nutrients. 2020 Jan 30;12(2):363*
21. *Am J Gastroenterol. 2000 May;95(5):1231-8.*
22. *Travel Medicine and Infectious Disease. Volume 5, Issue 2, March 2007, Pages 97-105.*
23. *Travel Medicine and Infectious Disease. Volume 59, May–June 2024, 102703.*
24. *Microbial Pathogenesis. Volume 148, November 2020, 104544.*
25. *Microbial Pathogenesis. Volume 148, November 2020, 104481.*
26. *Journal of Dairy Science. Volume 88, Issue 2, February 2005, Pages 527-533.*
27. *The Journal of Immunology. Volume 187, Issue 5. 1 September 2011.*
28. *Bioscience, Biotechnology, and Biochemistry .Volume 72, 2008 - Issue 11.*
29. *Eur J Dermatol. 2021 Apr 1;31(2):225-232.*
30. *Voprosy Pitaniia, 29 May 2023, 92(3):79-86.*
31. *Gut Pathog 3, 1 (2011).*
32. *Clinical Research. Vol 9 No 2 (2024): December.*
33. *Randomized Controlled Trial. Br J Nutr. 2013 Jun;109(11):1999-2007.*
34. *Microbial Pathogenesis. Volume 148, November 2020, 104544.*
35. *Iran J Pediatr. 2013 Aug;23(4):430–438.*
36. *Antibiotics 2021, 10(8), 966.*
37. *Nutrition Reviews, Volume 80, Issue 1, January 2022, Pages 22–49.*
38. *Int Dairy Journal. 8.(1998) 545. 553.*
39. *FEMS Microbiology Letters, Volume 352, Issue 1, March 2014, Pages 1–10.*
40. *Food Bioscience. Volume 36, August 2020, 100656.*
41. *Front. Microbiol., 14 March 2019.*
42. *Curr. Issues Mol. Biol. 2022, 44(4), 1434-1451.*
43. *World J Gastroenterol. 2014 Nov 21;20(43):16215–16226.*
44. *Front. Microbiol., 14 March 2019.*
45. *Front. Microbiol., 14 March 2019. ORIGINAL RESEARCH article. Front. Microbiol., 06 May 2016.*
46. *Nutrients 2019, 11(5), 969.*
47. *Food Funct., 2023,14, 1099-1112.*
48. *Front. Physiol., 24 July 2018.*
49. *Journal of Food Science Volume 47, Issue 6. November 1982. Pages 1824-1835.*
50. *Experimental Biology and Medicine. 2005;230(10):749-756.*
51. *World J Gastroenterol. 2012 Aug 14;18(30):3977–3991.*
52. *Journal of Microbiology, Immunology and Infection. Volume 52, Issue 3, June 2019, Pages 409-417.*
53. *Appl Environ Microbiol. 2023 Sep 13;89(10).*
54. *Toxicol Rep. 2018 Mar 2;5:314–317..*
55. *Toxicology Reports. Volume 5, 2018, Pages 314-317.*


DR.VEGAN®
www.drvegan.com • team@drvegan.com