Supporting Information

Preliminary Study on PCC-Chitosan's ability to Enhance Microplastic Excretion in Human Stools from Healthy Volunteers

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Figure S1. Average percentage of the shape of MPs analysed and quantified in SM

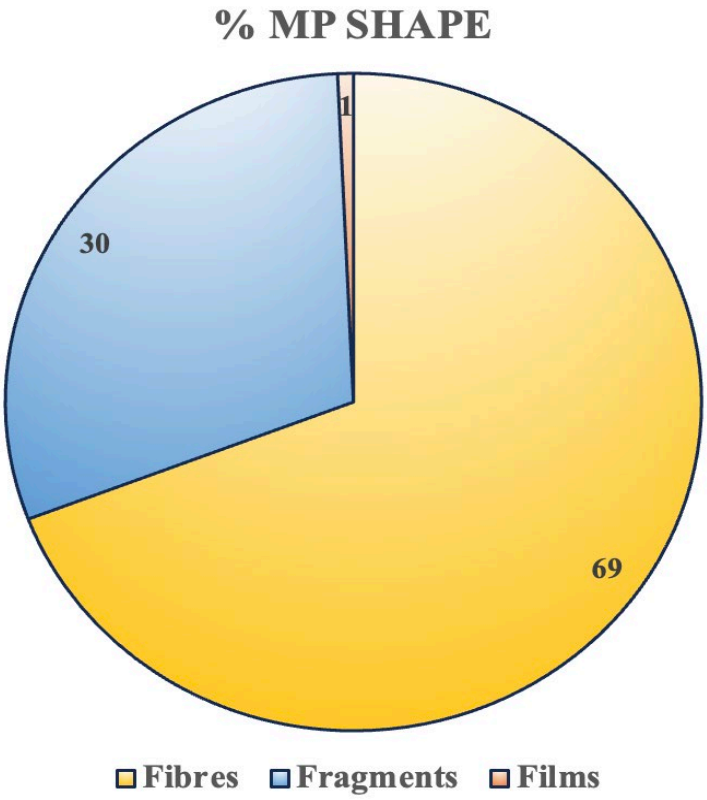


Figure S2. MPs recovered in stool samples of 10 volunteers, before (Phase 1, baseline) and after treatment (Phase 2, PCC)

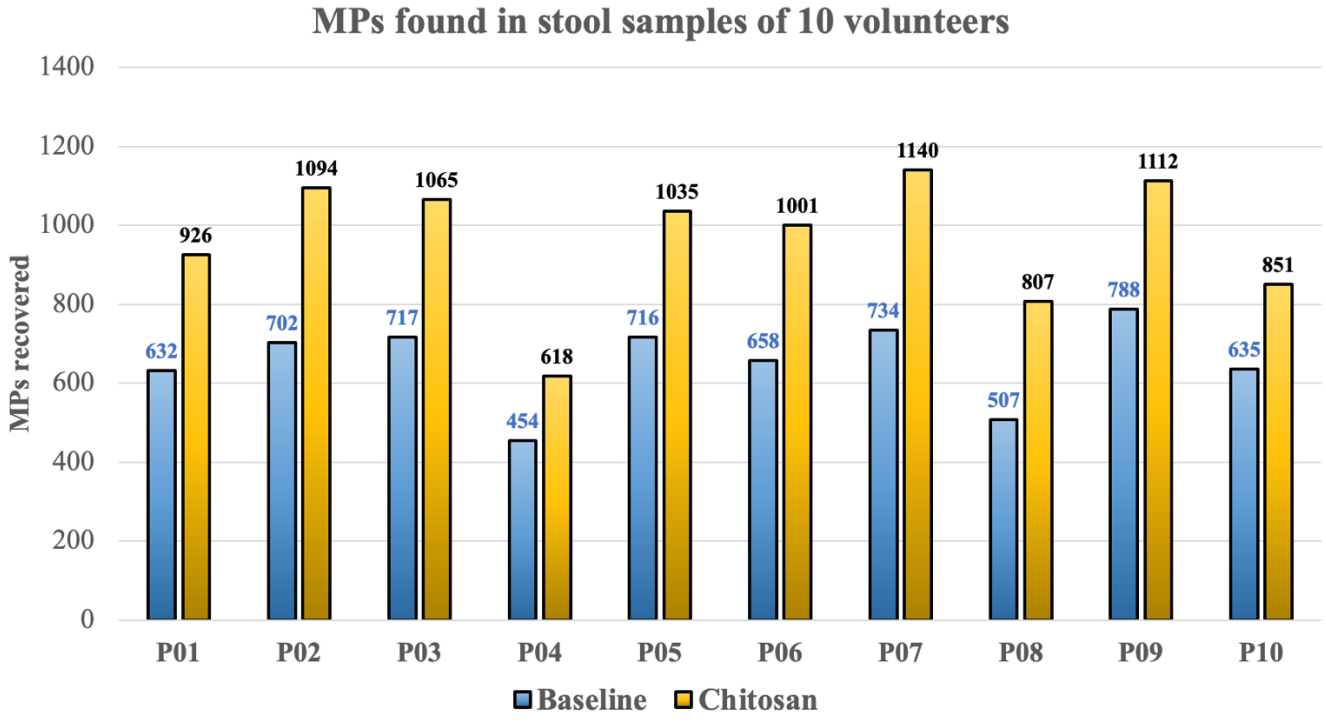


Figure S3: Percentage of MPs shape before (Baseline Phase 1) and after PCC use (Phase 2)

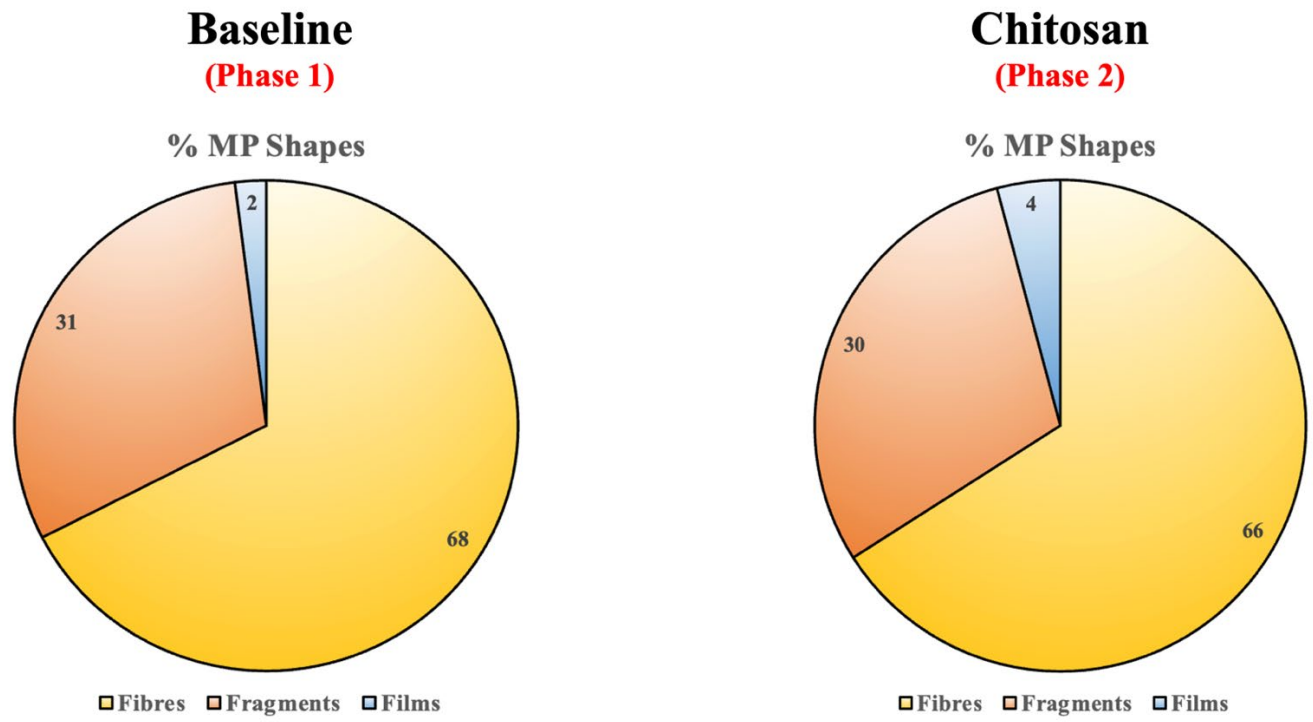


Figure S4: Percentage of MPs size before (Baseline Phase 1) and after PCC use (Phase 2)

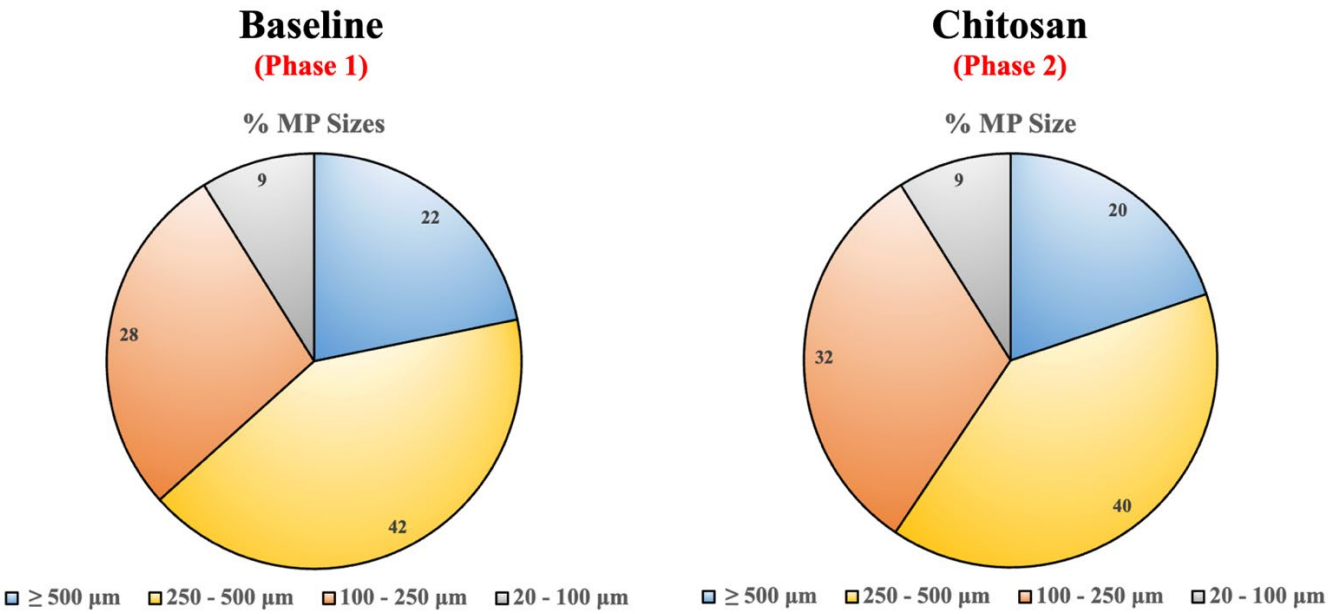


Figure S5: Technical data sheet of PCC used in the present study

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	NUTRATRADE S.r.l.		TECHNICAL DATA SHEET		
	Name **Chitosan**		SOURCE: **PROCAMBARUS CLARKII**		
Issued by	*QA*	Approved by	*Riccardo Cultraro*	Date **15/09/2023**	Rev. **5**

Product Name	Chitosan	**Solvent Used**	NA
Country Origin	China	**Grade**	Food ☒ Feed ☐ Pharma ☐
CAS No.	9012-76-4	**Molecular Formula**	$C_{56}H_{103}N_9O_{39}$
Part No.	4.010-126.0	**Shelf life**	24 months when properly stored
Packing	Paper-drums and two plastic-bags inside, food contact material compliant with EC Reg. 1935/2004 and EU Reg. 10/2011	**Storage**	Store in cool & dry place. Do not freeze. Keep away from strong light and heat.

Analysis Item	**Specification**	**Method**	**Provided on delivery**
Deacetylated Degree	>90%	NA	CoA
DER	NA	NA	NA

Chemical and Physical Characteristics			
Analysis Item	**Standard value**	**Method**	**Provided on delivery**
Appearance	Powder	Visual	DoC
Color	White to light yellow	Visual	DoC
Odor& Taste	Characteristic	Organoleptic	DoC
Identification	Positive	NA	DoC
Excipient	NA	NA	NA
Loss on drying	≤10.0%	Ph.Eur.9.0<2.2.32>	CoA
Total ash	< 1%	Ph.Eur.9.0<2.4.16>	CoA
Solubility in Water	NA	Organoleptic	DoC
Solubility in oil	NA	NA	DoC
Apparent density	NA	Eur.Ph.<2.9.34>	CoA
Tapped density	NA	NA	CoA
Solubility((in 1% Acetic Acid))	> 99.0%	NA	CoA
Viscosity	90-130 mPa·s(cP)	NA	CoA
Sieve analysis	95% through 100 mesh	USP39<786>	DoC
Arsenic (As)	NMT 1 ppm- Reg.EU 2023/915	Ph.Eur.9.0<2.2.58>ICP-MS	DoC
Cadmium (Cd)	NMT 1 ppm- Reg.EU 2023/915	Ph.Eur.9.0<2.2.58>ICP-MS	DoC
Lead (Pb)	NMT 3 ppm- Reg.EU 2023/915	Ph.Eur.9.0<2.2.58>ICP-MS	DoC
Mercury (Hg)	NMT 0.1 ppm - Reg.EU 2023/915	Ph.Eur.9.0<2.2.58>ICP-MS	DoC
Heavy Metals	NMT 10 ppm- Reg.EU 2023/915	Ph.Eur.9.0 <2.4.8>	DoC
Pesticides Residues	Conform Reg.(EC) .396/2005 and amendments.	Gas Chromatography	DoC
Solvent Residues	Conform Eur.Ph. 9.0 <5,4 > and EC Dir. 2009/32	Ph.Eur.9.0<2.4.24>	DoC
Hydrocarbons PAHs	≤ 50 ppb -Reg.EU 2023/915	GC-MS	DoC
Benzo(a)pyrene	≤ 10 ppb -Reg.EU 2023/915	GC-MS	DoC
Radioactivity	≤ 600 Bq/Kg -Reg. EC 1048/2009	NA	DoC
Aflatoxin B1	≤ 5 ppb - Reg.EU 2023/915	Ph.Eur.9.0<2.8.18>	DoC
Aflatoxins Σ B1, B2, G1, G2	≤ 10 ppb - Reg.EU 2023/915	Ph.Eur.9.0<2.8.18>	DoC

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Microbiological Characteristics			
Total aerobic Count	≤1000 cfu/g	Ph.Eur.9.0<2.6.12>	DoC
Yeast/Moulds	≤100 cfu/g	Ph.Eur.9.0<2.6.12>	DoC
Enterobacteriaceae	≤100 cfu/g	Ph.Eur.9.0<2.6.31>	DoC
Escherichia coli	Absent in 1 g	Ph.Eur.9.0<2.6.31>	DoC
Salmonella spp.	Absent in 25 g	Ph.Eur.9.0<2.6.31>	DoC
Listeria monocytogenes	Absent in 25 g	Ph.Eur.9.0<2.6.31>	DoC
Staphylococcus aureus	Absent in 1 g	Ph.Eur.9.0<2.6.31>	DoC

Other product characteristics		
Irradiation	No Irradiation	DoC
GMO	Product No-GMO (Reg.1829/2003-1830/2003 EC)	DoC
Allergens	Crustaceans products thereof: Chitosan	DoC
Food Additives	Free (Reg. EU 1333/2008 and amendments)	DoC
BSE/TSE	Free	DoC
Melamine	Free, No melamine (Reg.EU 2023/915)	DoC
Pyrrolizidine alkaloids	In compliance with Reg.EU 2023/915	DoC
Nanomaterials	Absent in compliance with Reg CE 1169/2011	DoC
Ethylene oxide	No Ethylene oxide	DoC
Suitable for Vegan	No	DoC

*DoC-Declaration of Conformity
*CoA-Result on CoA