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Correction

Correction: Premarathna et al. Resolution-Phase Immunometabolic Reprogramming by *Gelidiopsis variabilis* Polysaccharides: Macrophage Polarization and *In Vivo* Anti-Inflammatory Efficacy. *Mar. Drugs* 2026, *24*, 299

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Error in Figure

In the original publication [1], there was a mistake in Figure 4 as published. The structure is funoran-type sulfated agarose, not κ-carrageenan. κ-Carrageenan contains D-galactose-4-sulfate linked to 3,6-anhydro-D-galactose, whereas funoran contains D-galactose-6-sulfate linked to 3,6-anhydro-L-galactose. No β-carrageenan was detected in the NMR analysis. The data confirm funoran-type sulfated agarose with methoxylation. The corrected Figure 4 appears below.

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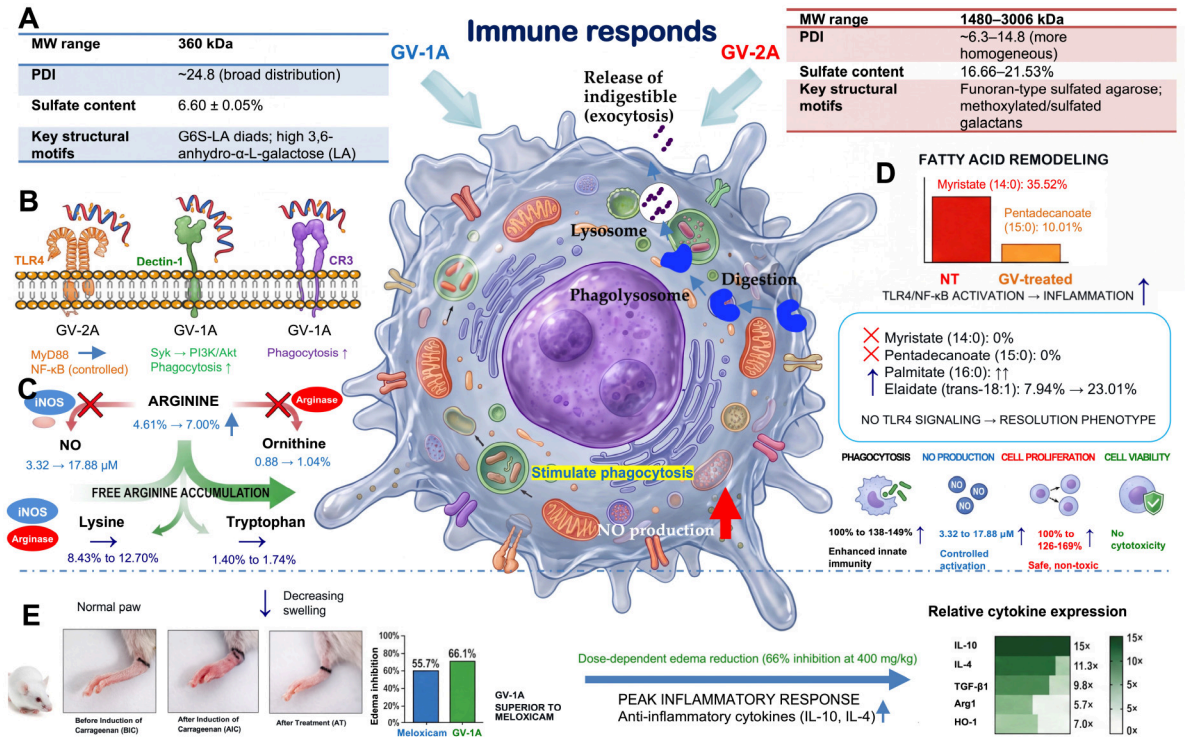

Figure 4. Mechanistic model for GV polysaccharide-mediated inflammation resolution. (**A**). Structural features of cold-extracted (GV-1A) and hot-extracted (GV-2A) polysaccharides from *G. variabilis*, showing differences in molecular weight, sulfation, etc. (**B**). Proposed receptor engagement (hypothetical model): low-MW GV-1A engages Dectin-1/CR3 (consistent with enhanced phagocytosis), while high-sulfate GV-2A may engages TLR4 (consistent with immunostimulatory effects). These receptor assignments are inferred from structural features and functional responses, but direct receptor binding studies have not been performed. Both pathways are hypothesized to lead to downstream signaling and metabolic reprogramming. (**C**). Immunometabolic reprogramming in macrophages: GV treatment induces arginine accumulation (4.61% to 7.06%) via iNOS/arginase suppression, (**D**). eliminates pro-inflammatory myristate (35.52% to 0%), and increases palmitate/elaidate, shifting macrophages toward a resolution phenotype. (**E**). *In vivo* validation: GV-1A (400 mg/kg) outperforms meloxicam in edema reduction (66.1% vs. 55.7%) and upregulates resolution markers (*IL-10*, *IL-4*, *TGF-β1*, *Arg1*, HO-1). Arrow symbols: ↑, increased; ↓, decreased.

Error in Table

In the original publication [1], there was a mistake in Table 3 as published. The structure is funoran-type sulfated agarose, not κ-carrageenan. κ-Carrageenan contains D-galactose-4-sulfate linked to 3,6-anhydro-D-galactose, whereas funoran contains D-galactose-6-sulfate linked to 3,6-anhydro-L-galactose. No β-carrageenan was detected in the NMR analysis. The data confirm funoran-type sulfated agarose with methoxylation. The corrected Table 3 appears below.

Table 3. Comparative structural, metabolic, and functional profiles of *G. variabilis* polysaccharides derived from cold vs. hot extraction. Arrow symbols: ↑, increased; ↓, decreased.

Aspect	Feature	Cold Extraction (GV-1A)	Hot Extraction (GV-2A, GV-2B, GV-3A)
Molecular properties	MW range	360 kDa	1480–3006 kDa
	PDI	~24.8 (broad distribution)	~6.3–14.8 (more homogeneous)

Table 3. *Cont.*

Aspect	Feature	Cold Extraction (GV-1A)	Hot Extraction (GV-2A, GV-2B, GV-3A)
	Sulfate content	6.60 ± 0.05%	16.66–21.53%
	Key structural motifs	Funoran-type sulfated agarose; G6S-LA diads; high 3,6-anhydro-α-L-galactose (LA)	Funoran-type sulfated agarose; methoxylated/sulfated galactans
Metabolic reprogramming	Amino acid shifts	↑ Arginine accumulation (4.61% to 7.06%)	↑ Arginine accumulation (variable intensity)
	Fatty acid remodeling	Complete elimination of myristate (14:0) and pentadecanoate (15:0); ↑ elaidate (trans-18:1)	Variable shifts; preservation of MUFA pools
Immunological responses	Immune modulation	Potent anti-inflammatory macrophage polarization (*Arg1* ↑, iNOS ↓); strong phagocytic activation (138–149%)	Immunostimulatory (NO production 27–37 μM) with later anti-inflammatory resolution
Key bioactive outcomes	*In vivo* efficacy (paw edema)	Dose-dependent edema reduction (66% inhibition at 400 mg/kg); superior to meloxicam in upregulating *IL-10*, *TGF-β1*, *Arg1*, HO-1	Effective edema reduction (up to 60% inhibition); strong upregulation of resolution markers
Mechanism	Proposed mechanism of action	Metabolic reprogramming toward anti-inflammatory macrophage polarization via arginine accumulation and myristate elimination	Immunomodulation via TLR/NF-κB modulation; metabolic support for immune resolution
Application	Potential applications	Systemic anti-inflammatory therapy; immunometabolic interventions	Localized immunomodulatory therapies

Text Correction

A correction has been made to Abstract.

Original text: "Cold and hot water extraction yielded structurally distinct fractions (360–3006 kDa) characterized by NMR as sulfated galactans with κ-carrageenan motifs and variable sulfation (6.6–21.5%)."

Corrected text: "Cold and hot water extraction yielded structurally distinct fractions (360–3006 kDa) characterized by NMR as funoran-type sulfated galactans with G6S-LA diads and variable sulfation (6.6–21.5%)."

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The authors state that the scientific conclusions are unaffected. This correction was approved by the Academic Editor. The original publication has also been updated.

Reference

1. Premarathna, A.D.; Dziubinska-Kuehn, K.M.; Saravanan, M.; Sooäär, A.; Reile, I.; Ahmed, T.A.E.; Hincke, M.T.; Tuvikene, R. Resolution-Phase Immunometabolic Reprogramming by Gelidiopsis variabilis Polysaccharides: Macrophage Polarization and In Vivo Anti-Inflammatory Efficacy. *Mar. Drugs* **2026**, *24*, 299. [CrossRef]

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