

Microplastic-induced changes in the rainbow trout gut: Insights from transcriptomic, proteomic, and microbial approaches

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Electronic Supplementary Material (ESM)

Table S1. List of primers used for real-time quantitative polymerase chain reaction

Figure S1. Principal component analysis (PCA) of intestinal proteomic profiles of *O. mykiss* after six weeks' oral exposure to three different concentrations (0.5%, 2%, and 5%) of polyethylene (PE) or polystyrene (PS) microparticles

Table S1. List of primers used for real-time quantitative polymerase chain reaction

Gene name	Accession No.	Primer	F/R	Sequence (5'-3')	Product size (bp)	Reference
60S ribosomal protein L31	NM_001165047	60S	F R	AGCCACCAGTATGCTAACCAAGT TGTGATTGCACATTGACAAAAA	147	Perez-Sanchez et al. (2011)
Flap endonuclease 1	XM_021620112.2	fen1	F R	GGTCTACTAAGGCACCTCACTG AGTAGTCACAGCCACGACAGTATG	140	this study
Ghrelin/obestatin prepropeptide	NM_001124588.2	ghrl	F R	GATGCTGTGTACTCTGGCTCTGT ACCTGTCTTACCTGTGGTTCT	91	this study
Interferon gamma	NM_001124620.1	ifng	F R	GGGGACCCAGGAAATGATCGAG TCCTCAGCTCAGGTATCCTCCC	98	this study
Intelectin	XM_021615847.2	ilect	F R	TCTACTGTTGGTGAACTGCCCTC CTCAGTCTTAAATCGGTTGCGGC	96	this study
Nuclear receptor subfamily 3, group C, member 1 (glucocorticoid receptor)	NM_001124730.1	nr3c1	F R	GGCTTGGCTTTCGGTAAACTCTC AGGTTGATGTGGTGACCTTGGAA	88	this study
PCNA-associated factor	XM_021600867.2	paf	F R	TGGCAAAAAGGCATTGGGGATT CTGGATTTCGATGCCTTGGACAC	125	this study
Solute carrier family 9 member alb	NM_001124695.1	slc9alb	F R	CAGCAGATCCTACAGCAGACACA TCCATCTCCATCTTCGTCTCCG	93	this study
Transferrin-a	NM_001124552.1	tfa	F R	ATGAAACTGCTTCTCGTCTCAGC CTCTTTGTCCGACTTTAGGCACC	102	this study
Interleukin 1b	XM_036979104.1	il1b	F R	ACATTGCCAACCTCATCATCG TTGAGCAGGTCCTTGTCCTTG	91	Perez-Sanchez et al. (2011)
Interleukin 2b	NM_001164065.2	il2b	F R	ATGCAACACACATCAGCATGAC TGTCCGTTGTGCTGTTCTCCTTA	73	Perez-Sanchez et al. (2011)
Interleukin 8	NM_001124362.1	il8	F R	AGAAATGTCAGCCAGCCCTTGT TCTCAGACTCATCCCTCAGT	69	Perez-Sanchez et al. (2011)
Interleukin 10	NM_001245099.1	il10	F R	CGACTTTAAATCTCCCATCGAC GCATTGGACGATCTCTTCTTC	70	Perez-Sanchez et al. (2011)
Tumour necrosis factor alpha	NM_001124357.1	tnfa	F R	GGGGACAAACTGTGGACTGA GAAGTTCTTGCCCTGCTCTG	75	Perez-Sanchez et al. (2011)

F = forward; R = reverse

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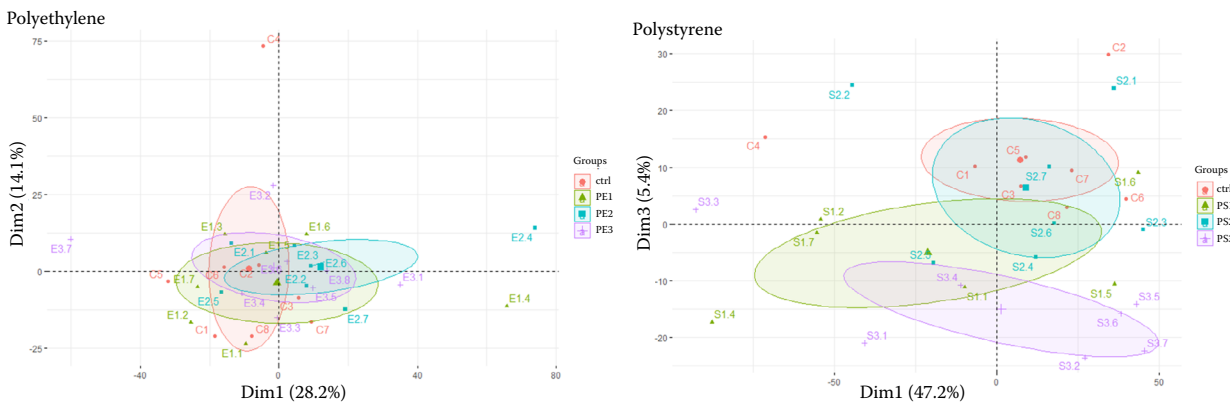


Figure S1. Principal component analysis (PCA) of intestinal proteomic profiles of *O. mykiss* after six weeks' oral exposure to three different concentrations (0.5%, 2%, and 5%) of polyethylene (PE) or polystyrene (PS) microparticles. Each point represents an individual sample ($n = 8$). The clustering pattern indicates treatment-related variation in protein expression. No clear separation was observed between some treatment groups, suggesting partial or non-significant proteomic divergence.

REFERENCES

- Perez-Sanchez T, Balcazar JL, Merrifield DL, Carnevali O, Gioacchini G, de Blas I, Ruiz-Zarzuela I. Expression of immune-related genes in rainbow trout (*Oncorhynchus mykiss*) induced by probiotic bacteria during *Lactococcus garvieae* infection. *Fish Shellfish Immunol.* 2011 Aug; 31(2):196-201.