

# Metabolic and biochemical response to environmental microplastics in cultured zebrafish (Danio rerio) Martínez I., Autiero A., Navarro A., Bautista-Gea A., Almeda R., Packard T.T. Gómez M., and Herrera A.



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The distribution of microplastics (MPs), their composition, and their hazard to marine organisms are widely investigated, however, little is still known about the impacts of weathered MPs on the biochemistry of aquatic organisms. Here, we studied the effect of beach-stranded microplastics (MPs) on the metabolism and biochemistry of the vertebrate model organism, Danio rerio (zebrafish).



Poris (Tenerife)



### **RESULTS**

20 -	ТО	Τ7	Т30	50	
30 -				50	

TO	<b>T7</b>	Т30

000 -	ТО	Τ7	Т30
00-			







- > In all cases, no significant differences (p<0.05) were found between the different treatments, nor for the time-periods of each treatment (Figures 1 to 7).
- Proteins were the most prevalent energy-rich compound (80-84%), followed by lipids (7-11%) and carbohydrates (7-10%). These percentages remained stable over time and treatments (Fig.8). This was evidence that no change in biochemical composition was associated with MP-ingestion





T0 T7 T30
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Ig.ð	<u>Central ring: T0, Intermediate ring: T7, Outer ring: T30</u>
A- Control	B- Flakes+10% virgin MPs C- Flakes+10% Lambra-MP's D- Flakes+10% Por









## **CONCLUSION**

Under our conditions, the biochemical composition and metabolism of zebrafish were not significantly affected by the ingestion of weathered MPs after 30 days.

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