Implen Journal Club | January Issue, 2026

Explore Jan 2026 Featured Research Highlights

Implen Journal Club Enhancing Enzymatic Degradation of Plastics

Is living more sustainably on your New Year's resolution list? Researchers at @King's College London

published a study in Cell Reports Physical Science proposing a strategy to enhance the use of enzymes to depolymerize plastics. The NanoPhotometer N60 was used to validate protein concentration for enzyme secondary structure analysis via CD spectroscopy.

The study results show that solubilizing and stabilizing lipase B from Candida antarctica in ionic liquids enables enzymatic depolymerization of of post-consumer poly(lactic acid) plastic, providing evidence for potential enhancement of plastic degradation through chemical modification of any hydrolytic enzyme.

#Implen #NanoPhotometer #Spectrophotometer #ProteinQuantification #LifeScienceResearch

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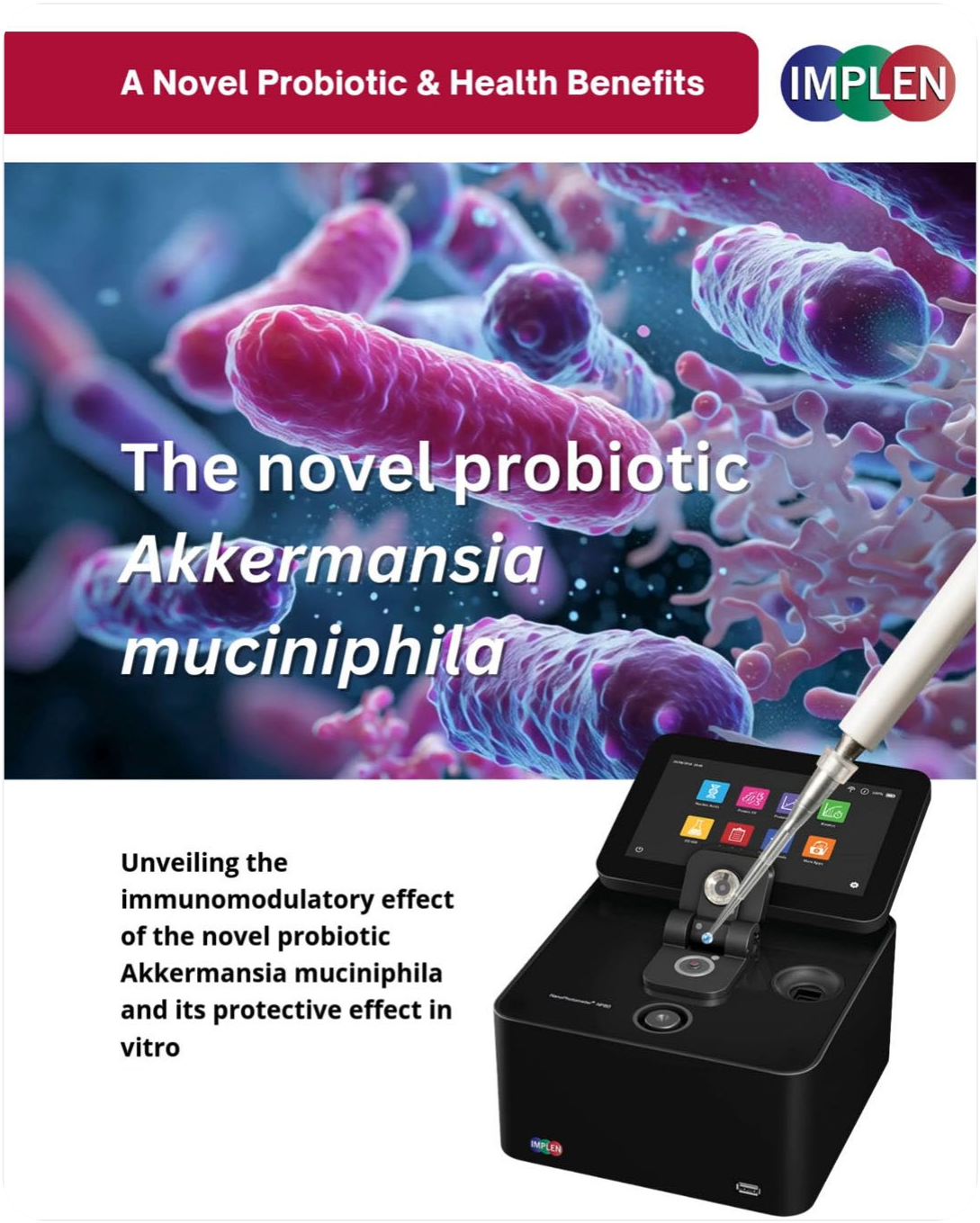

A Novel Probiotic and its Potential Health Benefits

Feeling under the weather this winter? A recent study in Microbiological Research highlights the importance of the novel probiotic Akkermansia muciniphila in modulating immune response, pointing to its potential role in providing health benefits.

Researchers used the NanoPhotometer NP80 to quantify purified RNA extracted from A. muciniphila-treated RAW 264.7 macrophages before performing qRT-PCR. The study shows a modulation effect of A. muciniphila with pro-inflammatory features, including the release of pro-inflammatory cytokines, as well as a protective capacity against Salmonella infection by promoting macrophage activation.

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Tea as a Tool for Targeting Intestinal Barrier-Related Disease

New year, healthier you! A recent study published in Heliyon describes the putative health benefits of drinking tea. The article shows that bioactive molecules extracted from tea leaves (TELNs) have potential protective properties for the intestinal barrier. RNA extracted from TELNs was quantitated using a NanoPhotometer.

The results suggest that TELNs may protect the intestinal epithelial barrier in vitro and in vivo, highlighting the

potential therapeutic benefits of tea for treatment of intestinal barrier-related diseases.

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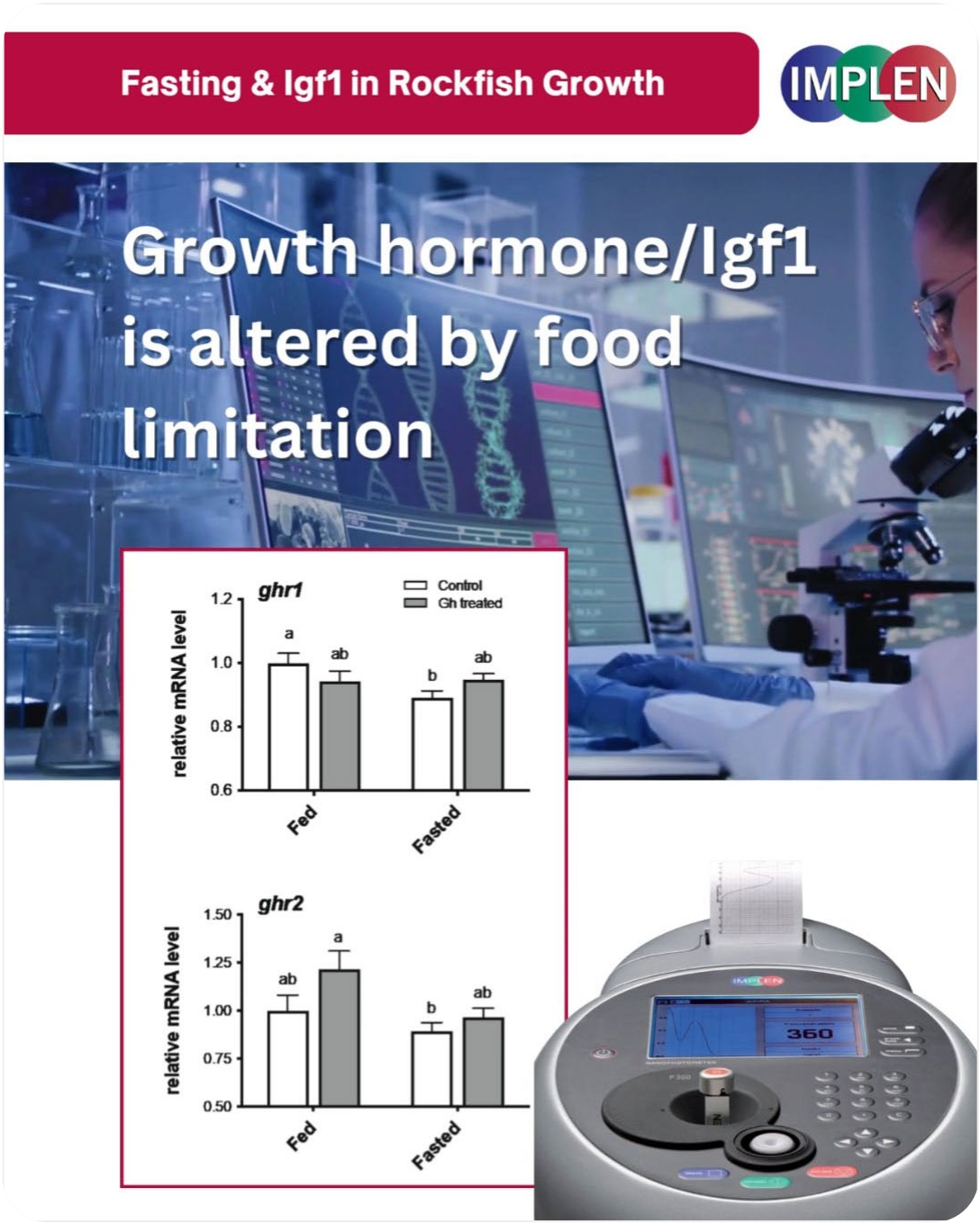

Fasting Alters Igf1 Signaling Pathways and Growth Regulation in Rockfish

In a study published in General and Comparative Endocrinology, researchers at @California Polytechnic State

University investigated the effect of nuritional stress on the sensitivity of liver Igf1 synthesis pathways to growth hormone. The NanoPhotometer® was used to quantify total RNA extracted from liver and skeletal muscle tissues of fed and fasted rockfish.

Total RNA was used for downstream qRT-PCR to determine relative liver and skeletal muscle mRNA expression. Overall, the findings suggest that growth hormone/Igf1 signaling and growth regulation is altered by food limitation.

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