Implen Prof Beer's Journal Club | May Issue, 2026

Explore May 2026 Featured Research Highlights

Direct UV/Vis Measurement of Vitamin C Levels in Plasma

A group at the @University of Iowa developed a method for measuring supra-physiological plasma vitamin C levels after intravenous ascorbate therapy using direct UV spectrophotometry. Unlike traditional assays, the technique required minimal sample preparation while still showing strong agreement with established fluorescence-based methods.

A NanoPhotometer® was was used to measure absorbance across all steps. Overall, the study offers a practical and cost-effective way to monitor pharmacological ascorbate levels in clinical settings, particularly in cancer trials using high-dose IV vitamin C.

#Implen #NanoPhotometer #Spectrophotometer #UVVis #Spectroscopy

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A Multi-omics Analysis of Light-Enhanced Petal Coloration

A recent article describes a study of the role of light intensity in the regulation of petal coloration mechanisms.

The group utilized a multi-omics approach to characterize the molecular basis of pigmentation in Argyranthemum frutescens in response to three light intensities.

Transcriptomics analysis was conducted using a NanoPhotometer® for RNA quantification. The results show upregulation of several genes involved in the anthocyanin biosynthesis pathway as light intensifies, providing a potential framework for flower color management in horticultural applications.

#Implen #NanoPhotometer #Spectrophotometer #Botany

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Microbiota of Fresh Strawberry Fruits

Researchers analyzed the microbiota of 19 fresh strawberry samples from Spain, Germany, and Austria using Illumina amplicon sequencing to better understand the microorganisms associated with spoilage and food safety. They identified a shared “common microbiota” consisting of 16 bacterial and 14 fungal genera, including spoilage-associated organisms such as Bacillus, Cladosporium, Penicillium, and Botrytis.

The study found that Botrytis caroliniana and Cladosporium herbarum may be particularly important because they can survive food processing and contribute to spoilage in pasteurized strawberry products. Importantly, major human pathogens commonly linked to strawberries were not detected in the analyzed samples, supporting the overall microbiological safety of the fruit.

The NanoPhotometer® NP80 was used throughout the study to assess DNA concentration and purity during microbial DNA extraction and sequencing preparation.

#Implen #NanoPhotometer #Spectrophotometer #DNA Quantification #FoodSafety

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Development of a hydrogel for ocular healing

In a 2025 article, researchers at the @University of Birmingham studied the development of a novel gellan-based fluid gel eye drop designed to improve ocular healing and prevent fibrosis after eye damage.

The researchers engineered the hydrogel's structure to achieve a balance between high viscosity and good lubricity, allowing it to protect eye tissues from mechanical stress while remaining easy to apply like standard eye drops. To assess biological outcomes of hydrogel application, RNA was extracted from human corneal fibroblasts and quantified using a NanoPhotometer® N50. The group found that the hydrogel material can sequester TGFβ1, a key molecule involved in fibrosis, reducing inflammation-driven scarring without relying on traditional drugs.

The study shows that by tuning the gel's composition and processing conditions, these drops can reduce friction, enhance cell protection, and support healing, suggesting a biomaterial-based therapeutic approach for ocular surface injuries. #Implen #NanoPhotometer #Spectrophotometer #RNAQuantification #BiologicalResearch

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