

# Insights in Biology and Medicine

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## Short Review

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[Transcriptome-wide association study: Opportunity and challenges for cancer studies](#)

Genome-wide association studies (GWAS) have uncovered thousands of single nucleotide polymorphism (SNP) loci that are associated with complex traits. However, the majority of GWAS discoveries are located in non-coding regions and the biological mechanisms behind these associations are not well understood. Transcriptome-wide association studies (TWAS) have gained popularity in recent years by generating biological interpretable discoveries and facilitating the identification of novel associations that have been missed by GWAS. TWAS has identified more than hundreds of susceptibility genes for many complex diseases and traits, including cancers. Here, in this review, we first summarize TWAS methods, then discuss the opportunities for cancer studies and finally review current challenges and future directions for this method.

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## Opinion

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[Light beams, photons, axions](#)

The question of the interaction of light with small particles, with molecules, atoms in gases, in liquids has been considered by many authors in the scientific literature. As a rule, this is elastic, Raman, or Rayleigh scattering. The frequency of the scattered light in the first case is the same as that of the incident, and in cases 2 and 3, the spectrum of scattered radiation is enriched with the corresponding components. The subject of this work is the interaction between each other in the medium of two coherent light beams.

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## Research Article

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[Dead sea salt solution: composition, lack of cytotoxicity and in vitro efficacy against oral leukotoxins, endotoxins and glucan sucrose](#)

Introduction: Dead Sea Salt, rich in minerals and ionic compositions and low in Sodium Chloride (NaCl) has many reported unique properties that set it apart from other salts.

Objectives: To evaluate the composition of Dead Sea Salt and assess its in vitro cytotoxicity, and efficacy against oral bacterial leukotoxins, oral endotoxins and oral glucan sucrose.

Methods: The cytotoxicity was evaluated in an established cell line (solution at 5000 µg/mL of culture medium) using positive and negative control groups. The effect on oral bacterial leukotoxin (LtxA) and different concentrations of lipopolysaccharide and glucan sucrose was established at 24, 36, 48, 60, 72, 84, and 96 hours using the HPLC method (high-performance liquid chromatography).

Results: The most predominant elements detected were the water of crystallization (H<sub>2</sub>O, water that is found in the crystalline framework of salt and which is not directly bonded ), magnesium chloride (MgCl<sub>2</sub>), potassium chloride (KCl), sodium chloride (NaCl), calcium chloride (CaCl<sub>2</sub>), bromide (Br<sup>-</sup>) and sulfates (SO<sub>4</sub>). In vitro, Dead Sea Salt presented no cytotoxicity and was highly effective against leukotoxin, endotoxin, and glucan sucrose enzyme.

Conclusion and clinical significance: We believe that rinsing with Dead Sea Salt has the potential to contribute to the prevention of periodontal, peri-implant and dental disease and merits clinical research.

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## Review Article

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[Anthelmintic agents: vermicide and vermifuge](#)

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Helminthiasis is also known as worm infection, is any macroparasitic disease of humans and other animals in which a part of the body is infected with parasitic worms known as helminths. Anthelmintic agents are medicines that used for treatment and inhibition of parasitic infections caused by helminths; which involve both flat worms, such as, flukes and tapeworms and round worms, such as, nematodes. Anthelmintics are categorized into groups depending on the basis of their identical chemical structure and mode of action. Thiabendazole, mebendazole, and albendazole belong to benzimidazoles group of antihelmenthic medicines. From benzimidazoles group of antihelmenthic, thiabendazole was first discovered in 1961 and already a mentioned number of more benzamidazoles were interpolated as wide spectrum anthelmintics. Praziquantel has a particular effect on the enveloping layer of trematodes and increases permeability of calcium ion influx leading to uncontrolled muscle contraction and paralysis. Praziquantel has a particular toxic effect on schistosome parasites, where its mode of action has been resulted more extensively than in cestodes. Coadministration of mebendazole with CYP450 inhibitors medications such as cimetidine, ketoconazole and etc may be increases plasma levels of mebendazole, by extending the half-life and decreasing plasma clearance.

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