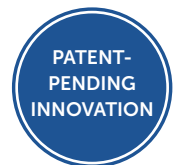


NanoCelle™ D3

Oral Mucosal Spray



Medlab's Unique delivery platform WORLD FIRST PATENT PENDING VITAMIN D3 NANOPARTICLES



FOR PROFESSIONAL USE ONLY

Vitamin D3 microscopic Nanoparticles significantly increase:

- Solubility^{1,2}
- Absorption^{1,2}
- Bioavailability^{1,2}
- Stability^{1,2}

PLEASANT PEPPERMINT FLAVOUR
Vitamin D3 (as cholecalciferol)
1000 IU PER DOSE

- Clinically trialed
- CMI's available in foreign languages
- Clinically colour-coded for easy identification
- Superior to tablet, capsule, sublingual and emulsion preparations³
- Applied to oral mucosa bypassing absorptive barriers in gastrointestinal tract^{4,5}
- Precise dose administration
- Water soluble composition NOT an emulsion
- Recommended for those with impaired digestive and absorptive capabilities^{5,6}

NanoCelle™ D3 can:

- Assist in medically diagnosed vitamin D deficiency⁷
- Aid in healthy calcium absorption and metabolism⁸
- Support healthy cellular and immunological function⁹
- Help promote healthy respiratory function⁹
- Reduce inflammatory responses and conditions within the body⁹

ACTIVE INGREDIENTS:

Vitamin D3 (as cholecalciferol)

Each 0.3mL (2 sprays) Contains:

1000 IU

DOSAGE GUIDELINES: Deliver two (2) sprays into the mouth once per day before meals, or as directed by your health professional.

Excipients: Water, modified vegetable oil, glycerol, maize oil, citric acid, potassium sorbate, steviol glycosides, peppermint oil.

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WARNINGS: Vitamin supplements should not replace a balanced diet. Contains potassium sorbate



WHAT IS NANOTECHNOLOGY?

Nanotechnology converts fat-soluble and poorly water-soluble compounds into highly water-soluble particles. This process creates a clear aqueous solution of these nutrients in high concentrations. This results in very stable nutrient preparations that greatly enhance their absorption and also the rate at which they are absorbed.¹⁰ This in particular allows absorption across the oral mucosal lining as opposed to intestinal absorption.

Medlab has achieved a successful world first lodgement for a patent application pertaining to a unique delivery system that converts such compounds into nanosized particles, certified to measure less than 0.2 microns. Nano-formulations, by virtue of their size, are known for circumventing the obstacles of poor pharmacokinetics. The resulting aqueous solubility of the compound ensures its transport across the cellular membrane. This patented technology will be applied to both nutritional and pharmaceutical compounds in the near future.

Our research demonstrates that nanotechnology increases plasma and serum levels of fat-soluble nutrients up to 3 times more than emulsions and up to 5 times more than oil preparations in healthy participants (Fig 1). Furthermore, the absorption rate of the nanoparticles is 200% more than that of an emulsion formulation and 370% more than an oil preparation (Fig 2).²

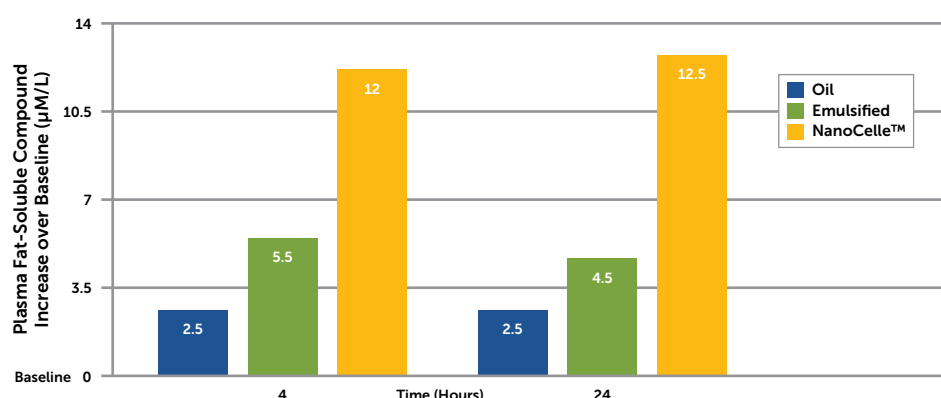


Fig 1. Comparison: Plasma increase of a fat-soluble compound in oil, emulsion and nanoparticle

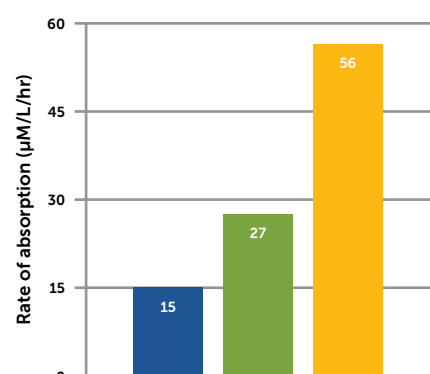


Fig 2. Comparison: Rate of Absorption of a fat-soluble compound in oil, emulsion and nanoparticle

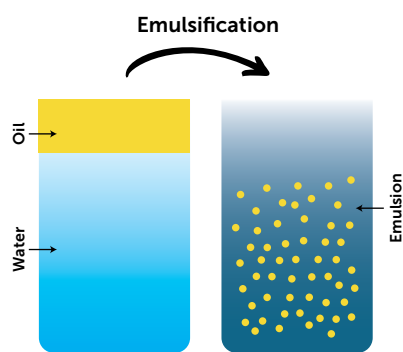


Fig 3. Emulsion: water-insoluble

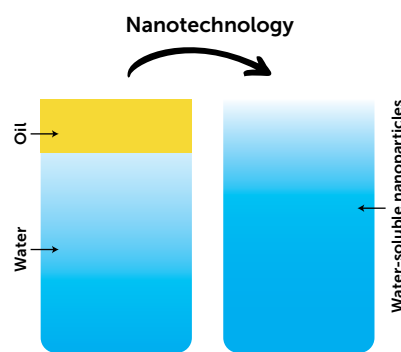


Fig 4. Nanoparticles: water-soluble

Emulsions typically consist of at least 2 immiscible liquids (usually oil and water) with one of the liquids being dispersed as small spherical droplets into the other. Emulsions are thermodynamically unfavourable systems that tend to break down over time due to a variety of physicochemical mechanisms including gravitational separation, flocculation, coalescence and change of structure.¹¹ Conventional oil-in-water emulsions do not produce water-soluble particles (Fig 3); they remain water-insoluble and thus still require efficient processing by the body to create particles that are able to be absorbed across the mucosal epithelium of the small and large intestine. Our nanotechnology creates water-soluble aqueous solutions (Fig 4).

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