

# NanoCelle™ Activated B12

## Oral Mucosal Spray



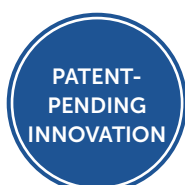
## The bioactive form of B12, Mecobalamin, using Medlab's unique Nanotechnology delivery platform.

Nanotechnology converts fat-soluble and poorly water-soluble compounds into highly water-soluble particles. This results in highly stable nutrient preparations with a greatly enhanced rate of absorption and overall bioavailability.<sup>1</sup> This delivery platform allows effective nutrient absorption across the oral mucosal lining as opposed to that of the gastrointestinal mucosa that has many barriers. Activated B12 contains mecobalamin that functions in the cytoplasm of all cells where it is involved in the methionine cycle, assisting in the conversion of homocysteine to methionine.<sup>2</sup>

### Key Features and Benefits:

- Nanoparticles significantly increase: solubility, absorption, bioavailability and stability<sup>3</sup>
- Assist in the management of dietary vitamin B12 deficiency<sup>4</sup>
- Aids in the synthesis of DNA<sup>5,6</sup>
- Supports the methylation cycle to target homocysteine levels<sup>5,6</sup>
- Supports healthy nerve and neurological function<sup>5,6</sup>
- Promote the mitochondrial energy production cycle<sup>5,6</sup>
- Supports the production of healthy red blood cells

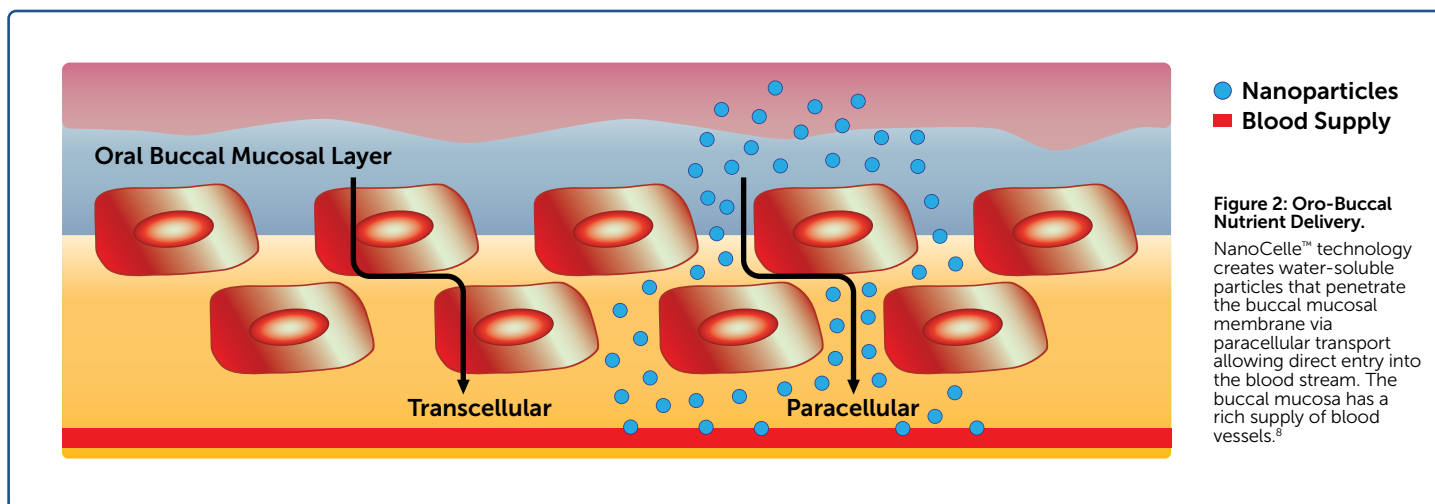
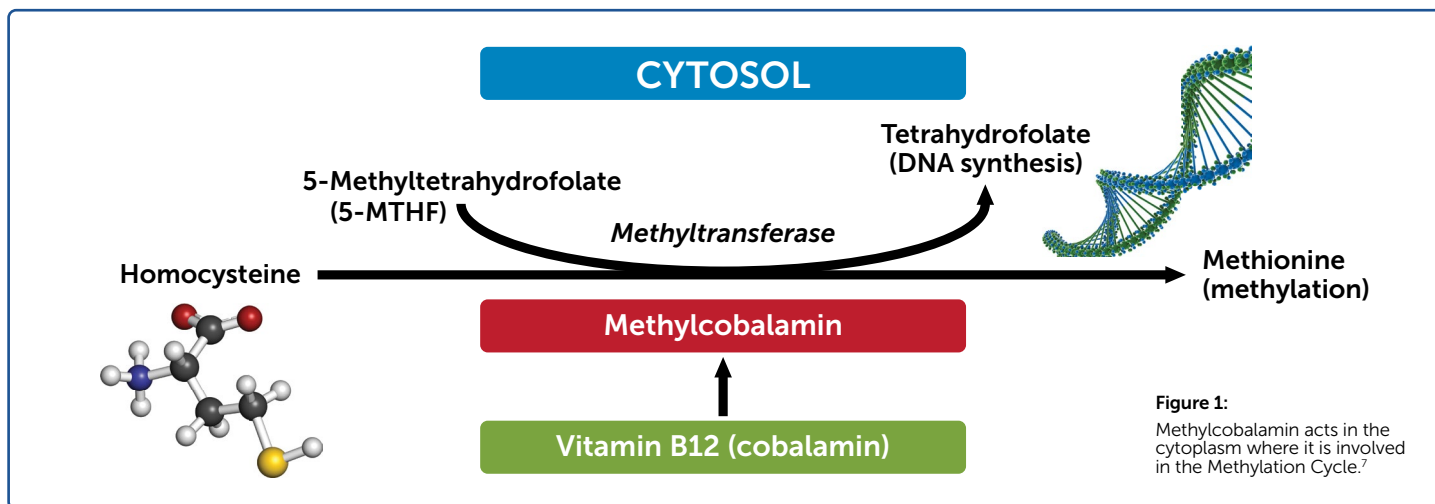
The Australian Approved Name (AAN) for Methylcobalamin is mecobalamin.



FOR PROFESSIONAL USE ONLY

PLEASANT  
PEPPERMINT  
FLAVOUR





**ACTIVE INGREDIENTS:** Each 0.3 mL Dose (2 sprays) Contains:  
Vitamin B12 (as mecobalamin) 1000 µg

**DOSAGE GUIDELINES:**  
Deliver two (2) sprays into the mouth once per day before meals, or as directed by your health professional.  
**AUST L 262637**

**WARNING:** If symptoms persist consult your healthcare practitioner. Vitamin supplements should not replace a balanced diet. Contains potassium sorbate.

**REFERENCES:**

1. Pathak K, Raghuvanshi S. Oral bioavailability: issues and solutions with nanoformulations. ClinPharmacokinet 2015;54:325-57.
2. Obeid R, Fedosov SN, Nex E. Cobalamin coenzyme forms are not likely to be superior to cyano- and hydroxyl-cobalamin in prevention or treatment of cobalamin deficiency. Mol Nutr Food Res 2015;59:1364-1372.
3. Rutolo DA. Nutrition Delivery Systems II: Micellization and fat-soluble nutrients. Int Clin Nutr Rev 1989;9:206-212.
4. Stabler SP, Allen RH, Dolce ET et al. Elevated serum S-adenosylhomocysteine in cobalamin-deficient elderly and response to treatment. Am J Clin Nutr 2006;84(6):1422-9.
5. Gruber K, Puffer B, Kräutler B. Vitamin B12-derivatives-enzyme cofactors and ligands of proteins and nucleic acids. Chem Soc Rev 2011;40(8):4346-63.
6. Depeint F, Bruce WR, Shangari N et al. Mitochondrial function and toxicity: role of B vitamins on the one-carbon transfer pathways. Chem Biol Interact 2006;163(1-2):113-32.
7. Thakkar K, Billa G. Treatment of vitamin B12 deficiency - Methylcobalamin? Cyanocobalamin? Hydroxocobalamin? -clearing the confusion. Eur J Clin Nutr 2015;69:1-2.
8. Laffleur F, Bernkop-Schnürch A. Strategies for improving mucosal drug delivery. Future Medicine 2013;8:2061-75.

**Available from:**  
**Integrated Nutraceuticals Limited**  
Room 604, 6/F., Seaview Commercial Building  
21-24 Connaught Road West, Sheung Wan  
Hong Kong.  
(+852) 6799 4200 or visit [www.inl.asia](http://www.inl.asia)

