

# promunel®

Immune & respiratory health

CLINICALLY  
PROVEN

Characterised phenolic  
pattern with nutrkinetic  
& bioavailability studies

Clinically proven benefits  
on more than 400 subjects

## KEY FEATURES

- Brown propolis extract, obtained with the patented M.E.D.™ process which preserves the complete polyphenolic complex as occurring naturally in raw propolis
- **Demonstrated immunomodulatory role through macrophage polarisation - Published patent application**
- Clinically proven on 295 subjects to reduce the incidence of upper respiratory discomforts and shorten the average number of days with discomforts
- Clinically proven on 122 subjects to improve the comfort of upper respiratory tract within 3 days of supplementation

## COMPOSITION & ACTIVE COMPOUNDS

Brown propolis extract from **M.E.D.™ process**

Five major polyphenol subfamilies identified representing 96% of the polyphenol fingerprint:

Dihydroflavonols, flavones, phenolic acids, flavonols, flavanones

12-24 mg of polyphenols per day  
for local application

48 mg of polyphenols per day  
for systemic immunomodulation

## REGULATORY & CERTIFICATIONS

Non-GMO, Halal, Kosher, gluten-free, suitable for vegetarians

Available as organic

## REFERENCES

CLINICAL TRIAL  
Esposito et al.; *Phytomedicine*; 2020  
Publication pending

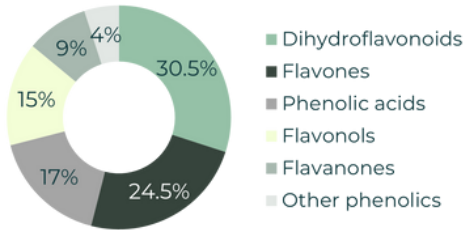
MECHANISTIC STUDIES  
Zaccaria et al.; *Nutrients*; 2017  
Zaccaria et al.; *Materials*; 2019

**PATENT APPLICATION**  
FR3154315 - *Published April 2025*

## PHENOLIC COMPOUNDS CHARACTERISATION

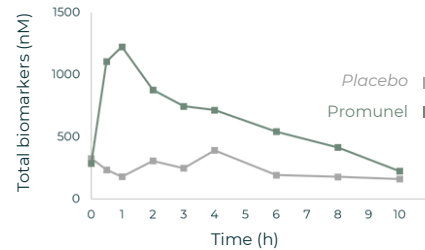
### 5 major phenolic subfamilies identified

% HPLC



## NUTRIKINETIC & BIOAVAILABILITY

### Kinetics of Promunel biomarkers in plasma (nM)



BIOAVAILABILITY  
57%

96% of the propolis polyphenol fingerprint identified.

## PATENTED MECHANISM OF ACTION

Peripheral Blood Mononuclear Cells

6 healthy donors

Women & men

Age: 20-50 years old

Macrophages phenotypes determination

Cytokines secretion measure

Promunel 5µmol/L

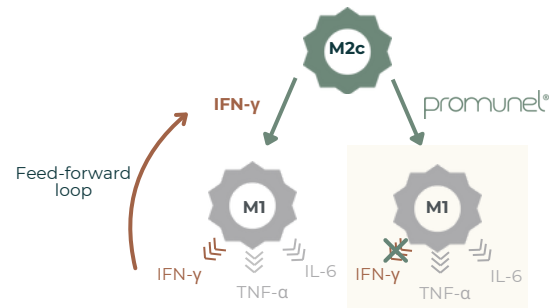


Promunel supports the initial phase of the natural innate immune response of M1, M2b, and M2a macrophages.

## Enhances the body's innate immune readiness.

Promunel supports the reprogramming of M2c macrophages from immunosuppressive state towards a functional M1-like phenotype.

**Promunel enhances the priming of the innate immune while maintaining a balanced inflammatory response.**



## Polyphenols in Promunel work in synergy to provide immunomodulatory benefits.

Individually, the five main phenolic compounds of Promunel did not trigger the polarisation of immunosuppressive M2 macrophages into M1-like cells.

In contrast, their combination induced an M1-like phenotype.

**The synergy of Promunel phenolics is essential for effectively priming the innate immune system.**