



BOTALYS

HRG80 - APPLICATION SHEET #1

Bioavailability of Rare Ginsenosides

HRG80-AS1-181212-V3-CS

WHAT ARE GINSENOSES ?

Ginsenosides are a family of molecules produced by plants to protect themselves against insects. As a matter of facts, Ginsenosides are able to block their multiplication cycle (1).

Ginsenosides are composed of 2 basic structures on which groups of sugars are attached. There are more than 50 different kinds of ginsenosides. 7 of them represent 90% of the substance of the root, those are called the «classical». Classic Ginsenosides aren't actually very bioactive.

They are transformed into Rare Ginsenosides by the intestinal microbiome which cuts the sugars attached to their structure. In facts, Rare Ginsenosides are more bioactive (2) than conventional ones.

(1) Kar Wah Leung, Alice Sze-Tsai Wong (2010) Pharmacology of ginsenosides: a literature review, Chinese Medicine, 2010, Volume 5, Number 1, Page 1

(2) Jeong-Hill Park, Hwa-Young Cha, Jeong-Ju Seo, Jin-Tae Hong, Kun Han, Ki-Wan Oh, (2005) Anxiolytic-like effects of ginseng in the elevated plus-maze model: Comparison of red ginseng and sun ginseng. In Progress in Neuro-Psychopharmacology, Volume 29, Issue 6, Pages 895-900.

HRG80 : HIGHLY BIOAVAILABLE

The most common Rare Ginsenosides are *Rh2*, *Rg3*, *Coupond K*, *Rg5* and *Rg6*.

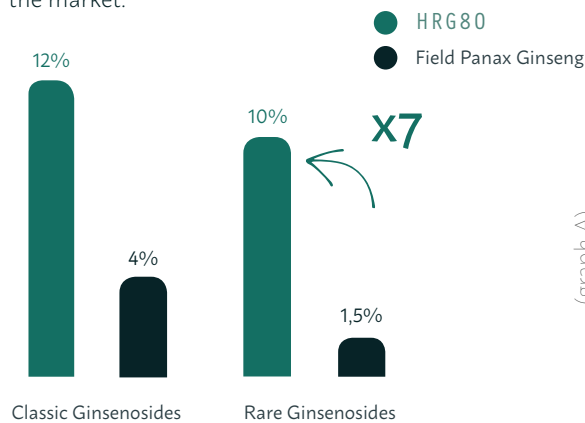
HRG80 contains concentrations in Rare Ginsenosides **7 times higher** than premium Korean Ginseng. (graph A)

In addition to being more concentrated, the bioavailability of Rare Ginsenosides is greatly improved with HRG80. The in-vitro tests on Caco-2 cells shows an increase in bioavailability of these Rare Ginsenosides by **17 times** in comparison to the reference brands of the market. (graph B)

THANKS TO ITS HIGHER BIOAVAILABILITY IN RARE GINSENOSES, HRG80 IS THE MOST POWERFUL GINSENG ROOT POWDER ON THE MARKET. IN ADDITION, IT IS TOTALLY SAFE BECAUSE IT DOESN'T CONTAIN ANY PESTICIDE RESIDUES.

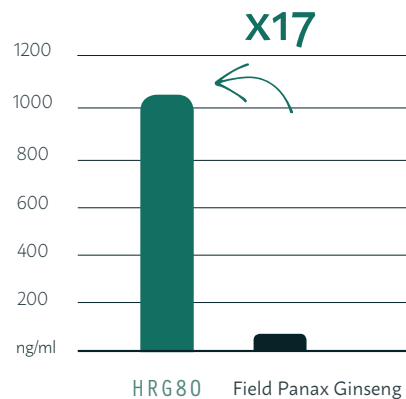
CONCENTRATION IN RARE GINSENOSES

Study made in 2018 on concentrations (%) in Classic Ginsenosides and Rare Ginsenosides between HRG80 and 3 other premium Panax Ginseng brands of reference on the market.



BIOAVAILABILITY OF RARE GINSENOSES

Study made in 2018 on content of Rare Ginsenosides between HRG80 and 3 other premium Panax Ginseng brands of reference on the market. Trial made in basal chamber after in-vitro gut membrane.



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