

# CACTUSLINE100

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a new *Opuntia ficus*  
*indica* fat – binding extract

Massimo Marzorati, Sam Possemiers & Mohammed E. Malainine

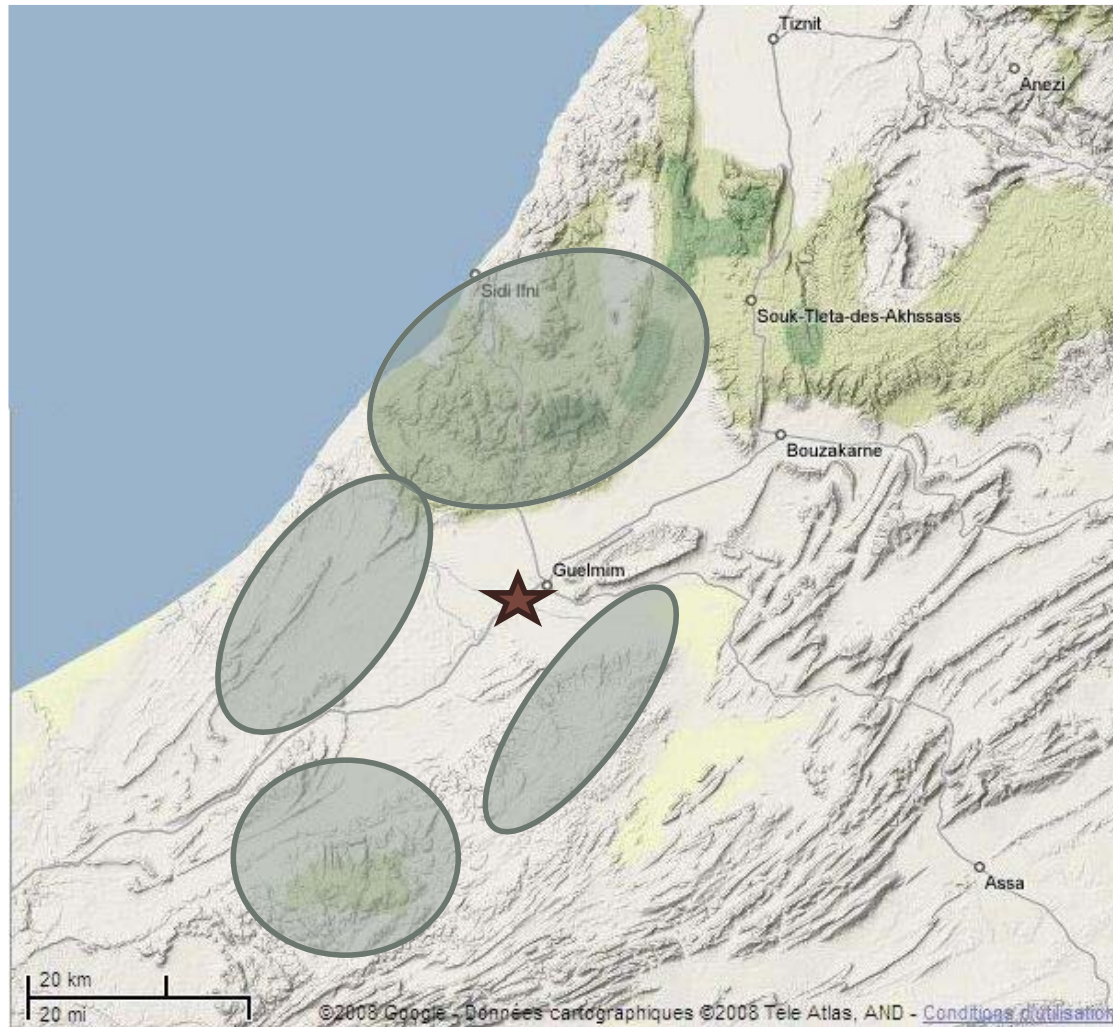
# Who's who?

- Dr. Massimo Marzorati & Dr. Sam Possemiers : ProDigest BVBA, University of Gent, Belgium. Gastrointestinal Expertise.
- Dr. Mohammed E. Malainine : Cadi Ayyad University of Marrakech / Greentech Industry.

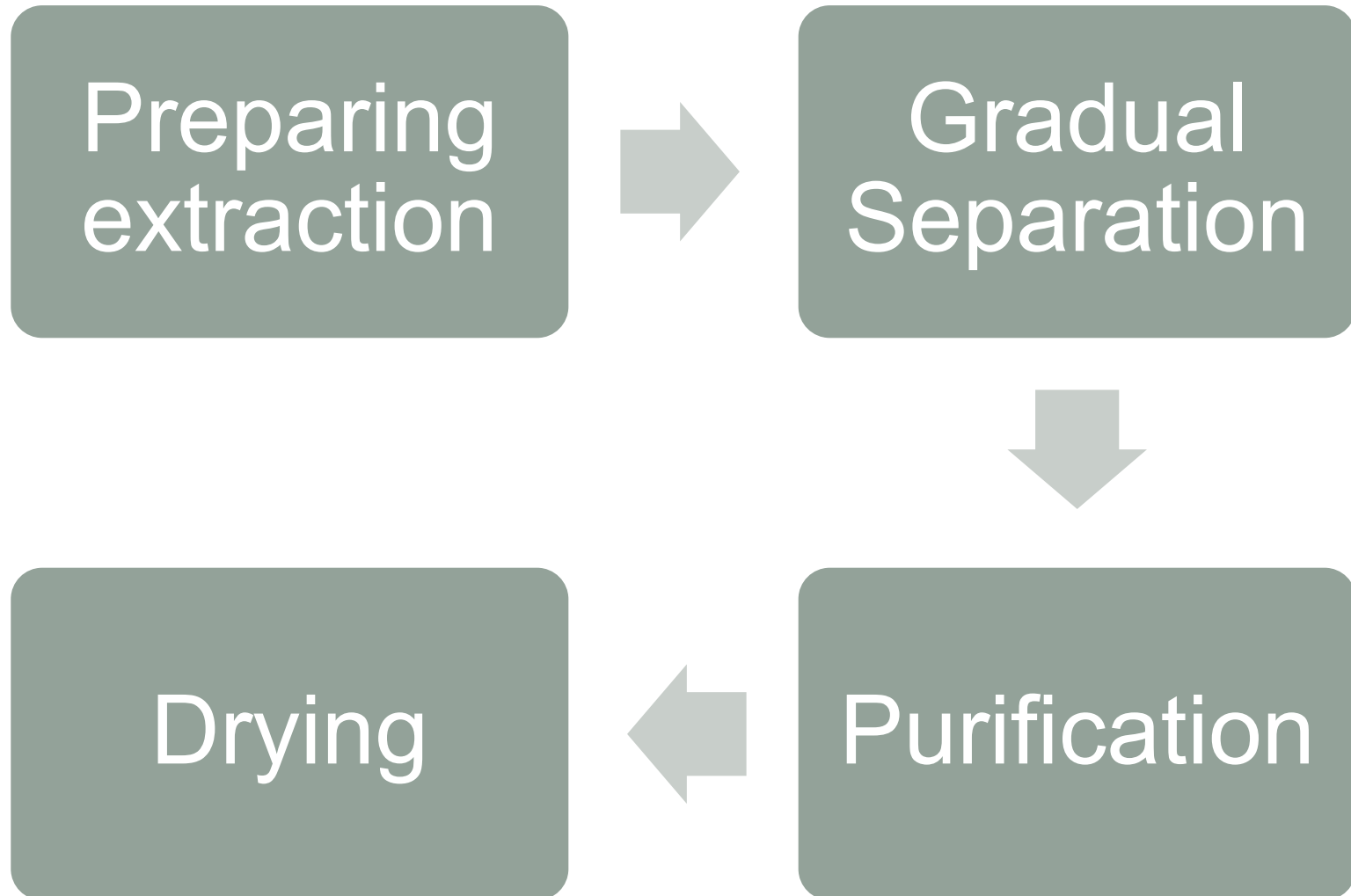
# What is cactusline100?

- A mixture of polysaccharides from the family of Arabino - Galactan - Protein (AGP), isolated from the mucilage of *Opuntia ficus indica* cladodes.
- Concentrating the fat-binding ability of the cladode powder.
- Protected by Moroccan patent n°: **28714**, and international patent application n°: **WO2007/100236**.
- Made available for these researches as gift from Greentech Industry (trademark & patent owner).

# Sourcing



# Process



# Product

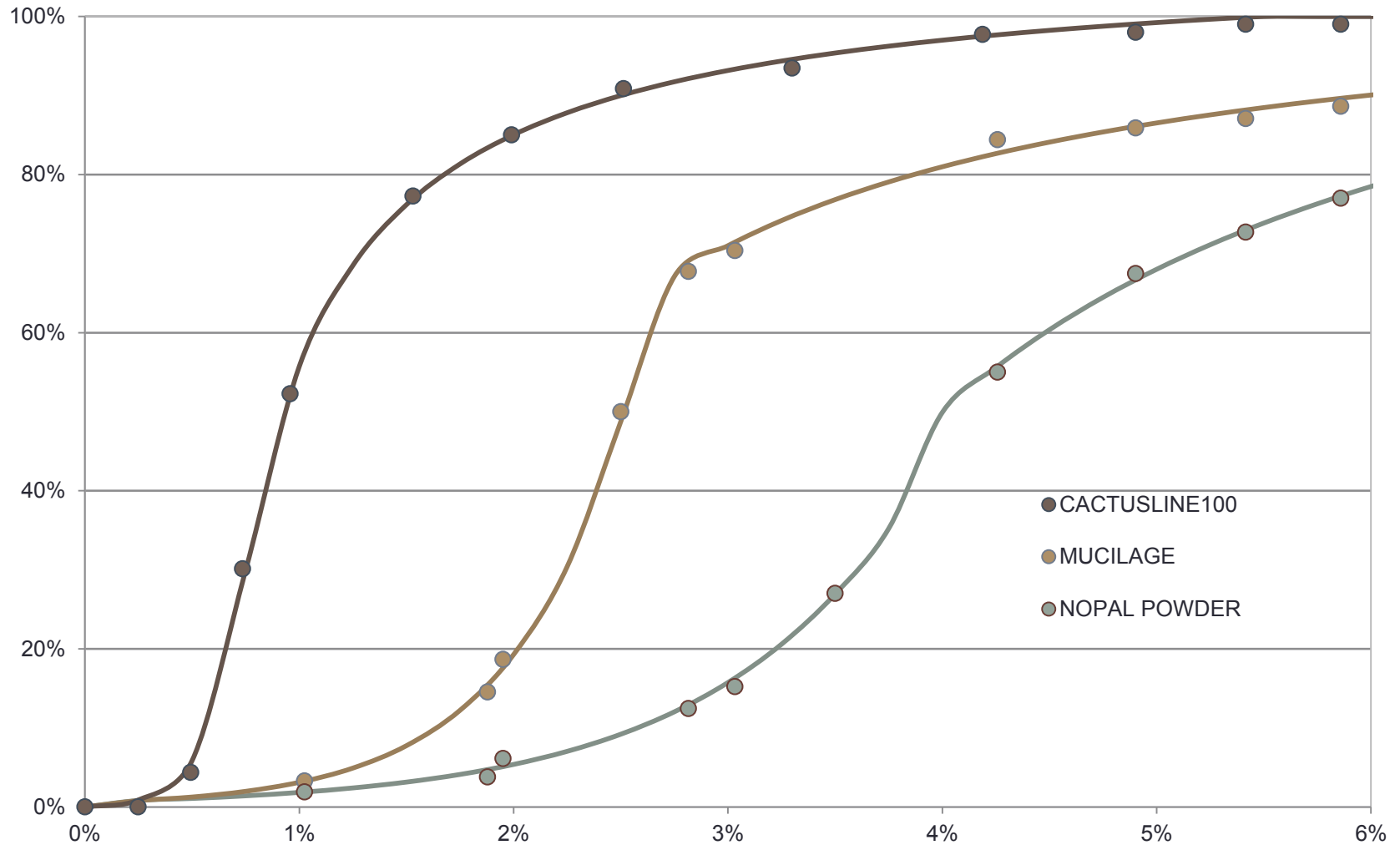


# The testing

- The ability to bind Sunflower oil as representative of edible fat.
  - By physical gel in lipid rich phases.
  - Versus brut mucilage & cladode powder.
- The ability to block (inhibit) initial fat lipolysis.
  - Short-term screening assay
  - Testing the liberation of Free Fatty Acids.
  - Versus control
- The ability to block terminal fat bioavailability.
  - Testing the biohydrogenation of C18:2
  - Versus control

# Fat-binding

(% of oil bound / Concentration)





# Fat-binding

Cladodes powder (2%)



Mucilage (2%)



# Fat-binding

Mucilage (2%)

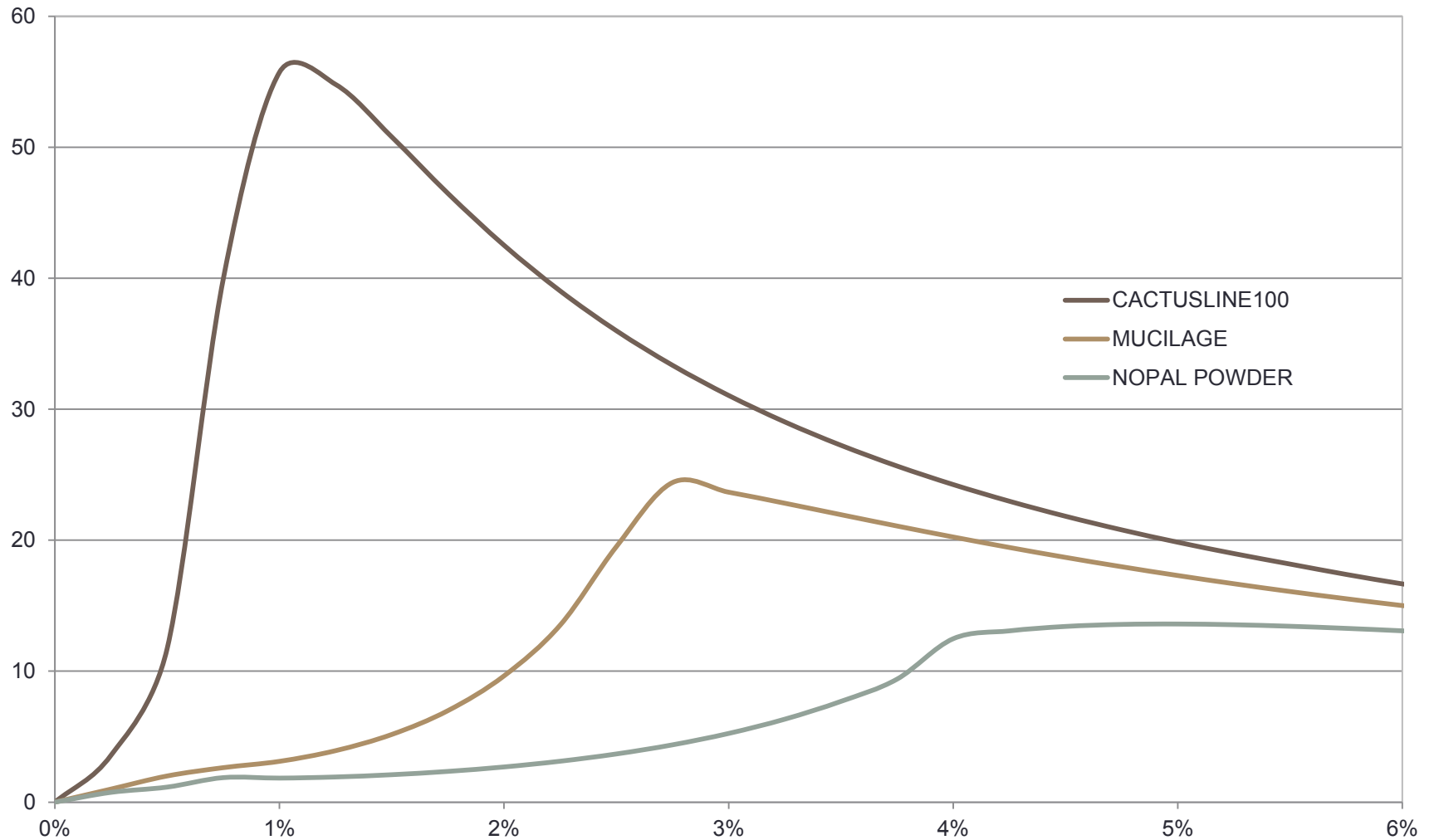


Cactusline100 (2%)



# Fat-binding

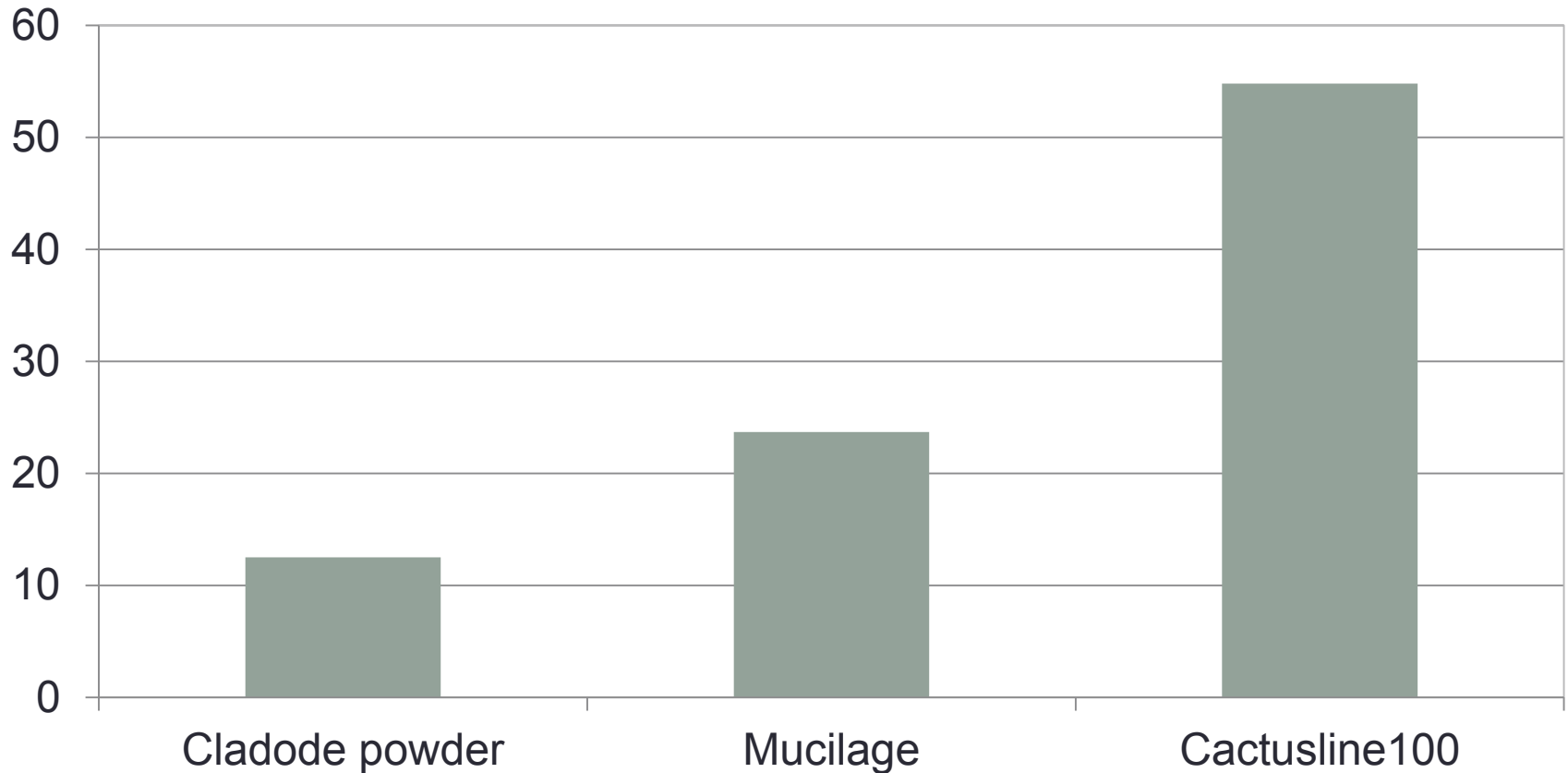
(Oil binding factor g/g / Concentration)



# Fat-binding

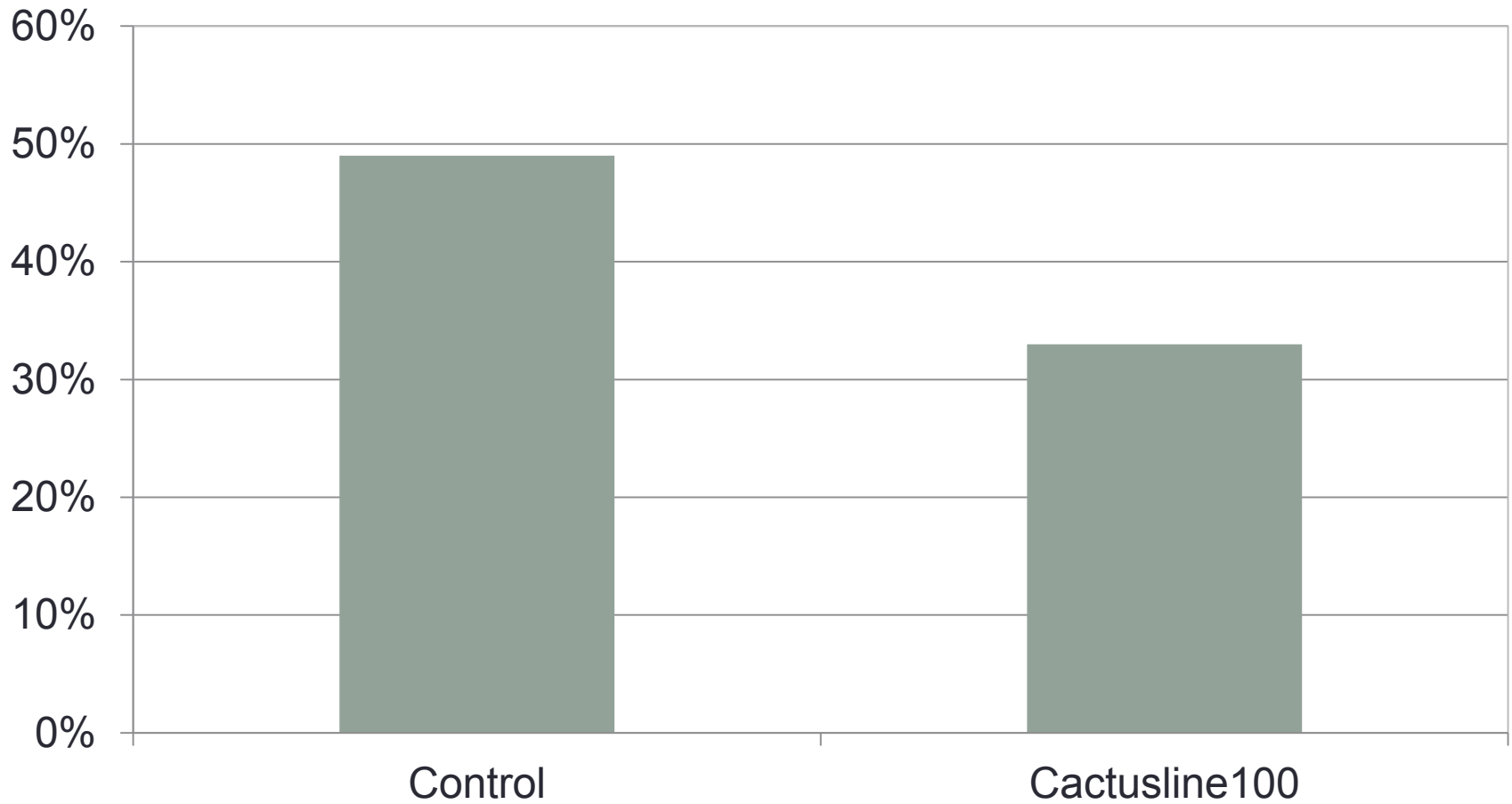
(Max Oil binding factor)

**Efficiency**  
gram of fixed oil per gram of test product



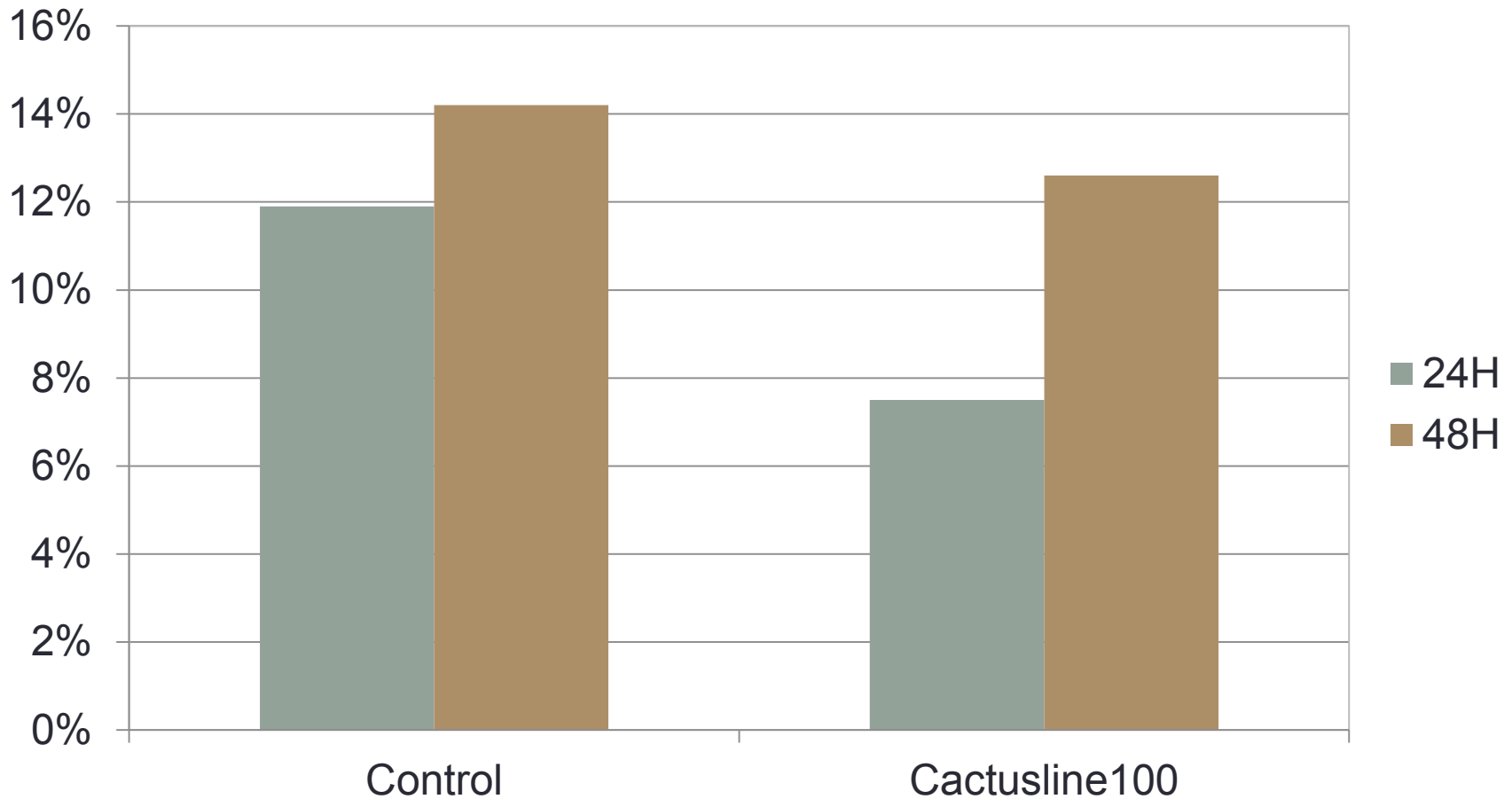
# Lipase inhibition

## RELEASE OF FREE FATTY ACIDS



# Bio-availability in the colon

## BIO-HYDROGENATION OF C:18:2



# Conclusion

- Cactusline100 is able to bind over 50 times its weight of sunflower oil.
- Cactusline100 significantly blocks the action of pancreatic lipase up to 32%.
- Cactusline100 also decreases the bioavailability of lipids in the colon by 37%.
- Cactusline100 is degraded by intestinal flora after 48 hours of ingestion.

# Special thanks

- Laboratoire de Chimie Biomoléculaire (UCAM)
- Laboratoire de recherche sur la réactivité des matériaux et l'optimisation des procédés (UCAM)
  
- Afoulki Invest & Azur Partners
- Agence du Sud



# ...Thank you



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