



RICHEN
Nutritionals



EncaptiCal™ Microencapsulated Tricalcium Phosphate(TCP)

More Calcium. Stronger Absorption. Less Compromise.

A microencapsulated TCP delivering 36% calcium with stronger preclinical serum calcium exposure than benchmark encapsulated and non-encapsulated TCP



≈ 2×

Bioavailability vs. Calcium Citrate²

36%

Calcium Content
(Equivalent to Calcium Carbonate in real-world formulation)

80% Higher

Bioavailability vs. Non-encapsulated TCP²

60% Higher

Bioavailability vs. Benchmark Encapsulated TCP²

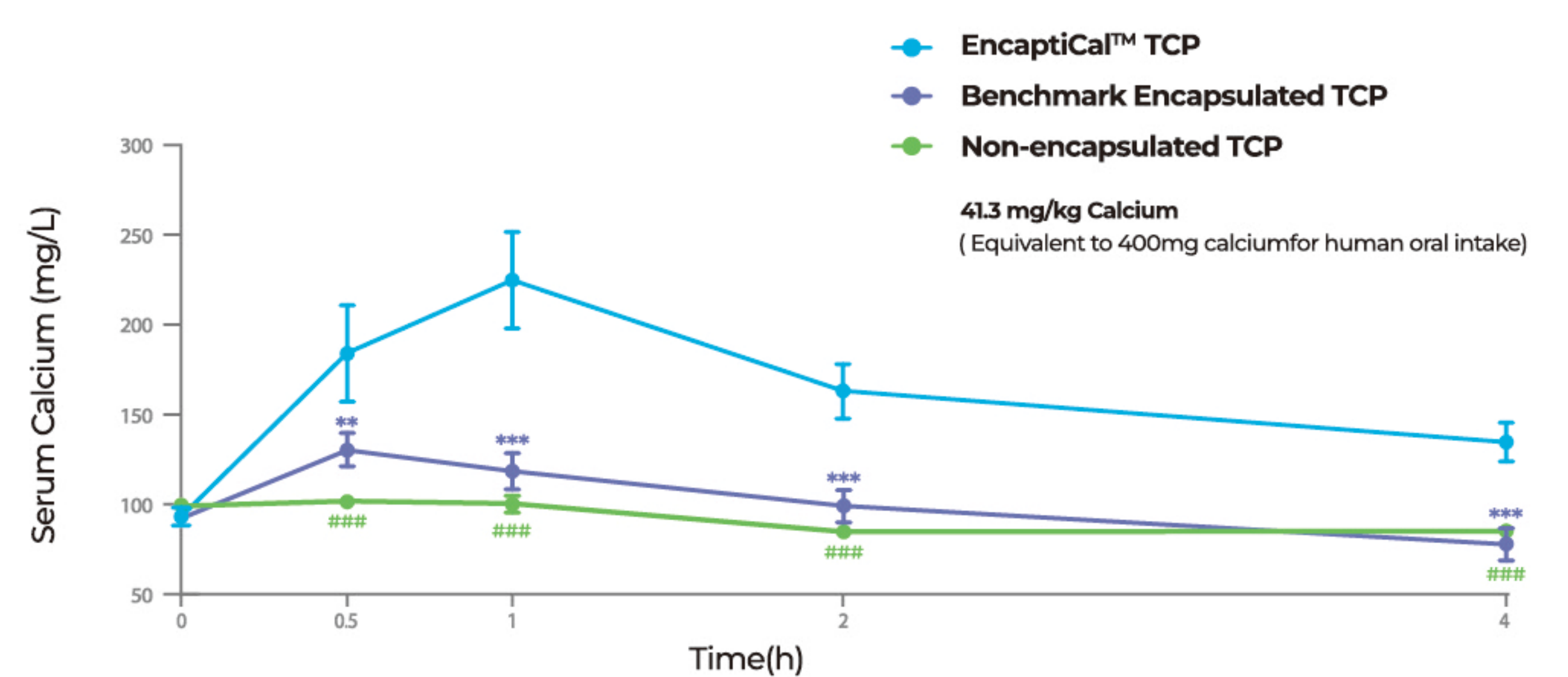


Figure 1. Serum calcium levels after oral administration of calcium sources in rats (41.3 mg/kg).

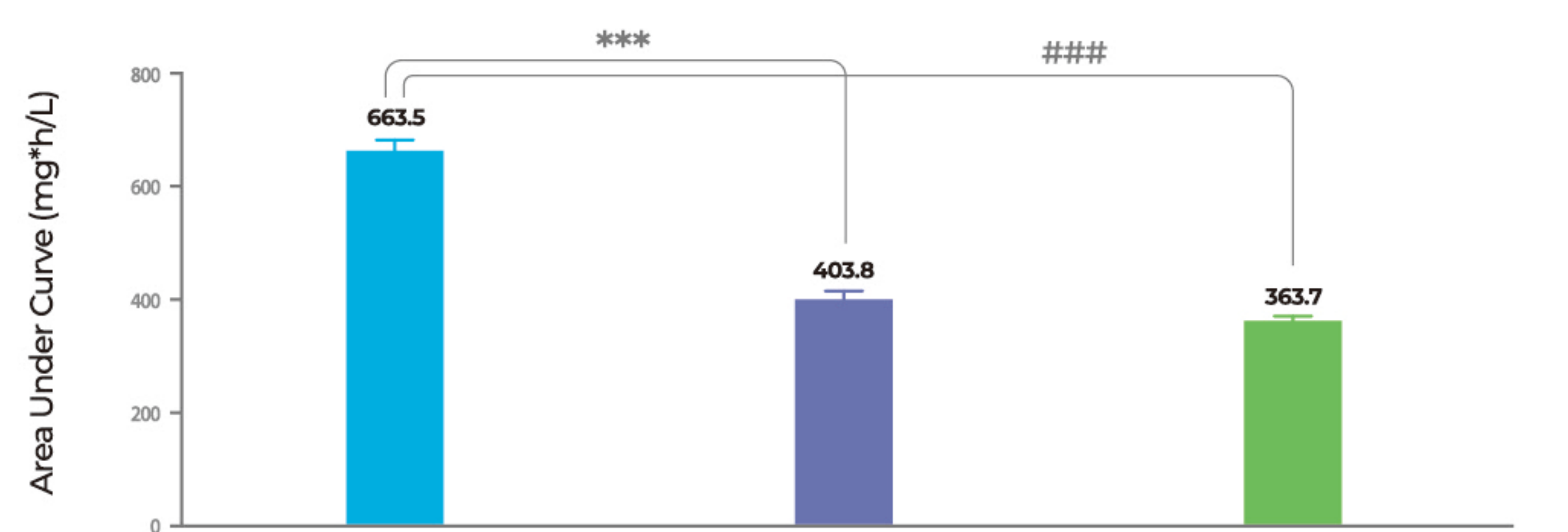


Figure 2. AUC of serum calcium concentration in rats (n=6). EncaptiCal™ demonstrated significantly higher calcium exposure compared to both benchmark encapsulated TCP group (**, p<0.01; ***, p<0.001, t-test) and the TCP group (###, p<0.001, t-test), while no significant difference was observed between the two control groups.

² Preclinical data, available upon request. Benchmark encapsulated TCP refers to market-available microencapsulated tricalcium phosphate products.



For more information, please visit www.richenglobal.com

Why Calcium + Phosphate?

- Calcium alone ≠ bone
- Calcium + Phosphate = bone mineral




Bone mineral naturally contains both calcium and phosphate. EncaptiCal™ TCP supplies both ions in one mineral source, helping brands build bone-health formulas around the same calcium-phosphate chemistry found in bone.^{1,3}

Why Microencapsulation?

Standard tricalcium phosphate offers strong mineral density, but it can be difficult to disperse and may deliver limited calcium bioaccessibility. EncaptiCal™ surrounds TCP with a sunflower lecithin-based matrix designed to improve wetting, dispersion, processing stability, and interaction with the digestive environment.

The result is a high-loading calcium ingredient with stronger preclinical absorption data and broader application potential across tablets, capsules, and powder sachets.



APPLICATION FORMS	STABILITY	COMPOSITION	REGULATORY PASSPORT
 Tablet  Capsule  Powder Sachet	Up to 24 months under recommended storage conditions	Tricalcium Phosphate Sunflower Lecithin	US GRAS — FDA 21 CFR §182.1217 (Calcium phosphate, tribasic) ⁶ EU 341(iii) — Authorized food additive, Regulation (EC) No 1333/2008; Commission Regulation (EU) No 231/2012; Directive 2002/46/EC ^{7,9} CHINA GB 26687-2011 ¹¹

You may claim

EU-authorized health claims (Regulation (EU) No 432/2012)⁸

- Calcium is needed for the maintenance of normal bones and teeth
- Calcium contributes to normal muscle function

Additional claims

- High Bioavailability Calcium (supported by preclinical data)²
- Soy-Free / Sunflower Lecithin (E322 (EU))
- Higher serum calcium exposure in preclinical testing²

Reference

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