



Q-Curviva™ – Next-Generation Curcumin Nutraceutical

Powered by QuanticSphere™ Phytosome Quantum Nano Sphere (PQNS)

Deliver clinically relevant anti-inflammatory and antioxidant efficacy using curcumin at physiologically feasible doses, solving curcumin's greatest challenge – poor oral bioavailability.

+Crassula®

 **QuanticSphere™**

Why Curcumin is Essential

Also known as **Curcuma longa extract**, curcumin is a **bioactive polyphenol** with powerful **anti-inflammatory and antioxidant** properties that support overall health and cellular balance.

It regulates multiple molecular pathways involved in inflammation, oxidative stress, and immune modulation, protecting tissues from chronic degeneration and premature aging.

However, despite its therapeutic potential, **curcumin is poorly absorbed** in its natural form, requiring innovative delivery systems to achieve clinical efficacy.

Common Causes of Curcumin Deficiency

- **Oxidative stress** – Depletes endogenous antioxidant reserves.
- **Poor dietary intake** – Limited absorption from natural turmeric.
- **Drug-induced depletion** – NSAIDs, corticosteroids, and other anti-inflammatories disrupt natural balance.
- **Aging & chronic inflammation** – Reduce cellular detox and repair capacity.

Why Conventional Curcumin Fails

Low solubility and absorption – Curcumin is hydrophobic and quickly metabolized.

Rapid degradation – Breaks down in gastric acid and loses potency.

Low plasma retention – Minimal bioavailability in bloodstream.

Requires high doses – 500–1000 mg/day often needed for measurable benefit.

Variable clinical response – Unstable absorption leads to inconsistent results.

❏ *Despite decades of research, conventional curcumin extracts remain limited by poor bioavailability and rapid clearance – restricting their therapeutic performance.*

Executive Summary

Conventional curcumin requires **1–2 grams per day** to reach minimal plasma levels (<5% absorption). Q-Curviva™, powered by **QuanticSphere™ PQNS nanotechnology**, transforms this limitation through nano-encapsulation and phospholipid protection, achieving:

6–8× higher plasma uptake

>90% chemical stability

Sustained systemic release up to **24 hours**

Clinically effective results with only **100–150 mg/day**

When paired with a microdose of piperine, absorption rises to **70–90%**, representing a **10-fold dose reduction** versus standard curcumin.

Q-Curviva™ establishes a new benchmark in **anti-inflammatory, antioxidant, and cellular protection therapy**.



Clinical Need — Curcumin and Chronic Inflammation

Curcumin, the active compound from *Curcuma longa*, exhibits **broad biological activity** as shown below:

Modulation of Key Pathways

Curcumin modulates **NF- κ B**, **COX-2**, **TNF- α** , **IL-1 β** , **IL-6**, and **ROS** pathways, crucial for inflammatory and cellular responses.

Proven Efficacy in Clinical Trials

Demonstrates efficacy in **over 120 human trials** covering various conditions:

- Osteoarthritis
- Cardiovascular disorders
- Neurodegeneration
- Metabolic syndrome
- Oncology

However, **oral curcumin is unstable and poorly absorbed**, rapidly conjugated in the liver and excreted before reaching effective systemic levels.

Impact:

High doses are required for modest benefits, often causing **gastrointestinal discomfort and low adherence**.

Unmet Need:

A delivery platform capable of achieving clinically significant plasma levels at low, tolerable doses.

Pharmacokinetic Evidence & Dose Rationale

Human PK Study (6 subjects per arm, 25–50 years)

Group	Dose	Cmax (ng/mL)	Tmax (h)	AUC _{0–last} (ng·h/mL)
Standard Curcumin	1000 mg	67.4	0.64	698.4
Curcumin + Piperine (PQNS)	350 mg + 35 mg	197.1	1.9	1454.8
Curcumin PQNS (no piperine)	350 mg	79.0	1.8	682.1

Interpretation:

- PQNS alone achieves comparable exposure with **65% lower dose**.
- PQNS + Piperine provides **5.6× higher bioavailability** and **3× higher Cmax** than standard curcumin.
- Extended **Tmax** confirms sustained absorption.

Recommended Dosing:

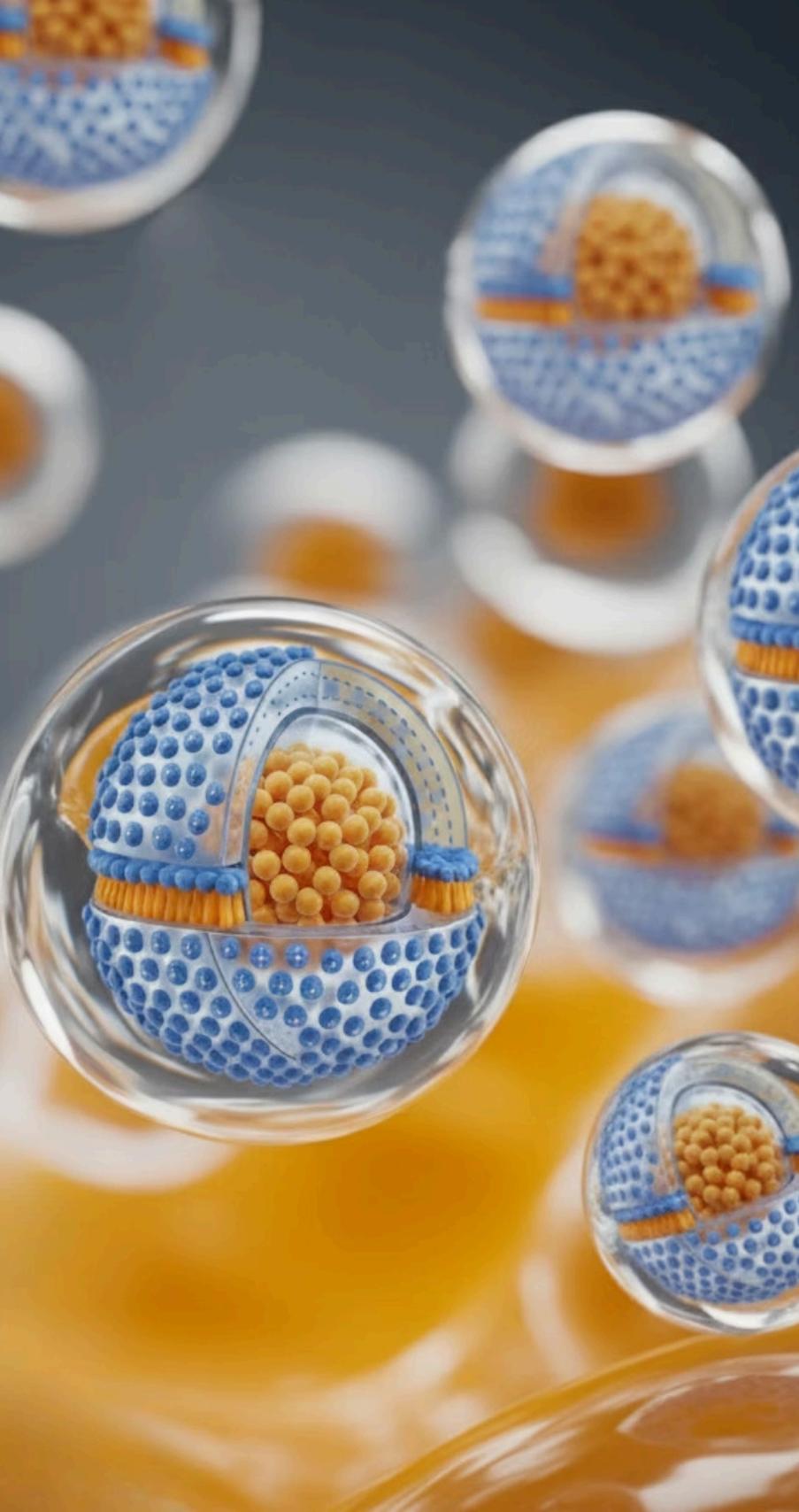
- **Maintenance / Prevention:** 100 mg CurcuminPQNS + 10 mg Piperine (1× daily)
- **Therapeutic / Anti-inflammatory:** 150 mg CurcuminPQNS + 15 mg Piperine (1× daily or divided)

Mechanistic Rationale

Curcumin PQNS acts through multi-pathway regulation:

Function	Biological Effect
Anti-inflammatory	Inhibits NF- κ B, COX-2, TNF- α , IL-1 β
Antioxidant	Neutralizes ROS, activates Nrf2, enhances endogenous defenses
Cellular modulation	Regulates PI3K/AKT and MAPK signaling, epigenetic influence
PQNS Advantage	Protects curcumin from metabolism, allows direct membrane fusion, sustains release, and enhances piperine synergy (inhibits glucuronidation)

Result: Prolonged plasma half-life, stable exposure, and efficient cellular entry.



QuanticSphere™ PQNS Technology

PQNS (Phytosome Quantum Nano Sphere) vesicles are **cationic phospholipid nanocarriers** engineered for:

Protection:

Resistance to gastric acid and enzymatic degradation

Targeting:

Positive surface charge ensures electrostatic adherence to enterocytes

Controlled release:

Smooth 24-hour release curve with minimal peaks/troughs

Tolerance:

Phospholipid bilayer minimizes gastrointestinal irritation

Outcome: Sustained plasma curcumin concentration with improved patient comfort and compliance.

Synergistic Value Proposition

Category	Standard Curcumin	Curcumin + Piperine	Q-Curviva™ (PQNS)
Absorption	<5%	10–20%	70–90%
Effective Dose	1000–2000 mg/day	500–1000 mg/day	100–150 mg/day
Stability	Rapid degradation	Partial protected	>90% stability
Efficacy	Modest, short-lived	Improved, variable	Sustained 24h exposure
Safety	High-dose GI upset	Possible drug interactions	Gut-friendly, lower dose

Clinical and Market Positioning

Therapeutic Scope:

- Joint and musculoskeletal inflammation (Osteoarthritis, Rheumatoid conditions)
- Metabolic and inflammatory disorders (Obesity, Diabetes, Syndrome X)
- Neuroprotection and mood regulation (Cognitive decline, Depression)
- Oncology support (Anti-angiogenic, Chemosensitizing actions)

Ideal Users: Adults 35+, athletes, or individuals seeking **joint comfort, anti-aging, metabolic balance, or cognitive resilience.**

Differentiation

First curcumin supplement explicitly powered by **PQNS nanosphere delivery.**

Dosage & Results

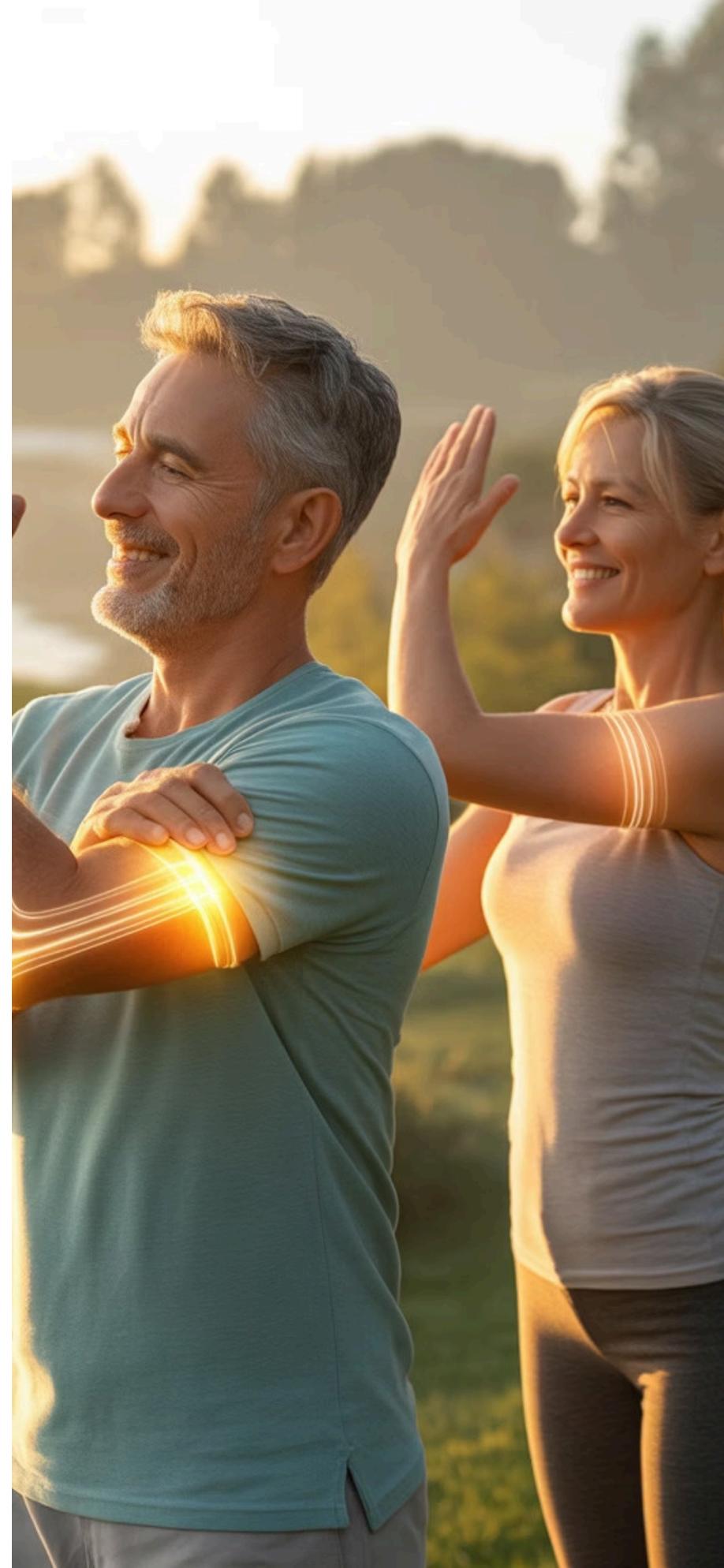
Clinically relevant results at **1/10th traditional dose.**

Superior Design

Designed for **precision absorption, stability, and comfort.**

Regulatory Confidence

Built on **GRAS-certified phospholipids**; compliant with global nutraceutical standards.



Summary — The Q-Curviva™ Promise

Q-Curviva™, powered by **QuanticSphere™**, integrates advanced biophysics and clinical insight to redefine curcumin therapy through:



Protection of fragile curcuminoids



Controlled, sustained release



Synergy with piperine for optimal absorption



Direct cellular delivery and anti-inflammatory regulation

Result: Superior bioavailability, fewer side effects, and stronger clinical outcomes across chronic inflammation, oxidative stress, and degenerative diseases.

Relief from Inflammation. Balance Restored.

Q-Curviva™ is not just a curcumin supplement — it is a **scientifically engineered anti-inflammatory system** that restores cellular harmony, mobility, and resilience through **nanotechnology and nature's intelligence**.

“Reclaim comfort, clarity, and vitality with **enhanced curcumin absorption and 24-hour cellular protection.**”

 Crassula®



QuanticSphere™