

Caliper delivers CBD into the bloodstream **significantly faster** — up to **424x** faster than isolate and up to **64x** faster than tinctures*

Clinical Substantiation Matters

At Caliper Ingredients, we invest heavily in **credible research to substantiate our product claims**. Pharmacokinetic data (including rate and speed of absorption) are a critical foundation for claims such as “fast acting,” or “superior bioavailability.” This is the **first human clinical substantiation** of such claims—and the first to do so using **commercially available CBD products**.

THE STUDY

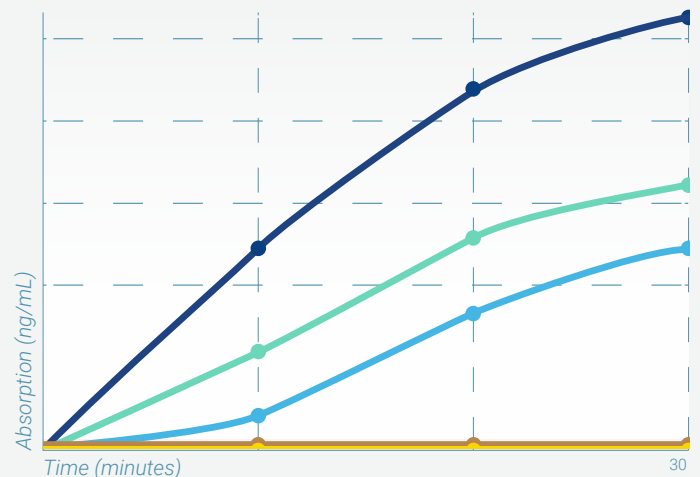
Human Subjects, Rigorous Design

Colorado State University researchers compared pharmacokinetics of Caliper’s suite of soluble cannabinoid ingredients against two controls: oil-based CBD tincture and unemulsified CBD isolate—the forms most widely available to today’s consumers.

- Colorado State University IRB-approved
- Double-blind, randomized crossover design
- 15 healthy male & female subjects, ages 21–62
- 30mg dose of each product given on five different days
- All subjects had fasted for 6 hours
- Blood samples were taken at 0,10, 20, 30, 45, 60, 120, 180, & 240 minutes following ingestion
- CBD blood levels were determined using UHPLC mass spectrometry

All Caliper CBD ingredients absorbed dramatically faster than oil-based CBD tincture or CBD isolate.

Absorption of Caliper CBD Formulations versus CBD Isolate and Tincture



- Caliper 5% CBD Liquid Concentrate (gum arabic-based)
- Caliper 20% CBD Liquid Concentrate (quillaia-based)
- Caliper 5% CBD Powder
- CBD Isolate
- CBD Tincture

- **Absorption began within 10 minutes** — significantly faster than either control.
- How formulations delivered CBD into the bloodstream at 30 minutes:
 - **Caliper 5% CBD Liquid Concentrate (gum arabic-based): 424x faster** than isolate & **64x faster** than tincture.
 - **Caliper 20% CBD Liquid Concentrate (quillaia-based): 218x faster** than isolate & **33x times faster** than tincture.
 - **Caliper 5% CBD Powder: 142x faster** than isolate and **22x faster** than tincture.

*2021 Colorado State University study, *Pharmaceuticals*.

We’re ready to help you innovate with *clinically proven* cannabinoid products.

Contact your account manager or email us at ingredients@caliper.life | www.caliperingredients.life

Our Products

We are ready to help move your cannabinoid innovation forward.

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Product Name	Cannabinoid Concentration	Applications & Benefits	Incorporate By
<i>LIQUID</i>			
20% CBD Liquid Concentrate (SKU: TL-Q-20)	20% CBD	RTD beverages, shots, gummies, baked goods, confections, topicals. Excellent heat & process stability.	6 months from date of manufacturing.
20% Composed Broad Spectrum Liquid Concentrate (SKU: CB-L-Q-20)	20% CBD 1% CBG		
5% CBD Liquid Concentrate (SKU: TL-A-5)	5% CBD		
5% Composed Broad Spectrum Liquid Concentrate (SKU: CB-L-A-5)	5% CBD 0.25% CBG		
<i>POWDER</i>			
5% CBD Powder (SKU: TP-S-5)	5% CBD	Bars, drink mixes, gummies, capsules, tablets. Flowable powder, long shelf-life, quick dissolving.	14 months from date of manufacturing.
5% Composed Broad Spectrum Powder (SKU: CB-P-S-5)	5% CBD 0.25% CBG		
10% CBD Powder (SKU: TP-S-10)	10% CBD		
10% Composed Broad Spectrum Powder (SKU: CB-P-S-10)	10% CBD 0.5% CBG		



Non-GMO | Kosher | Vegan | All Natural Flavors | Gluten-Free | Sugar-Free | Preservative-Free