Oral semaglutide (RT-116) via RaniPill® is Bioequivalent to SC Injections and Elicits Similar Weight Loss in Dogs

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Rani THERAPEUTICS

Introduction

RT-116 is an orally ingestible robotic pill that deploys in the small intestine to deliver semaglutide via painless transenteric injection. This study was a head-to-head comparison of PK and PD between oral RT-116 and subcutaneous semaglutide.

Methods

8 Healthy Beagles
Randomized 1:1

Period 1 (21 days)

Group A (n=4)	Group B (n=4)
RT-116 Oral	**SC Injection**
0.5mg semaglutide	0.5mg semaglutide

Daily Monitoring: PK (plasma concentrations, PD (weight, food intake), Safety

CROSSOVER

Washout Period

Period 2 (21 days)

Group A (n=4)	Group B (n=4)
SC Injection	**RT-116 Oral**
0.5mg semaglutide	0.5mg semaglutide

Same Monitoring: PK, PD, Safety

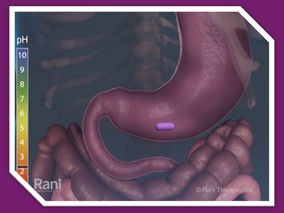
Primary Endpoint:
Bioavailability • Weight Loss • Safety Profile



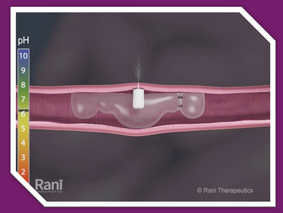
1.) The RaniPill capsule is swallowed like a regular pill. The capsule contains the biologic drug payload and a sophisticated robotic injection mechanism.



3.) Upon reaching the small intestine, the higher pH triggers the enteric coating to dissolve. This activates a chemical reaction that inflates a tiny polymer balloon.



2.) The RaniPill moves intact thought the harsh acidic environment of the stomach, where traditional oral biologics would be destroyed.



4.) A microneedle is pushed through the intestinal wall for a painless transenteric injection. Drug is rapidly absorbed achieving bioavailability comparable to SC injection.

Clinical Implications

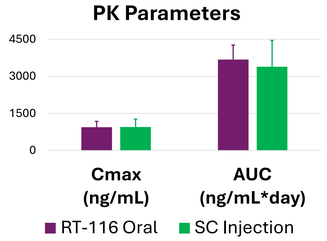
- **Enhanced Patient Compliance**: Oral delivery eliminates injection burden
- **Earlier Therapy Adoption**: Reduced treatment barriers
- **Alternative Dosing Strategies**: Potential to mitigate GI adverse effects
- **Expanded Access**: Broader patient population reach

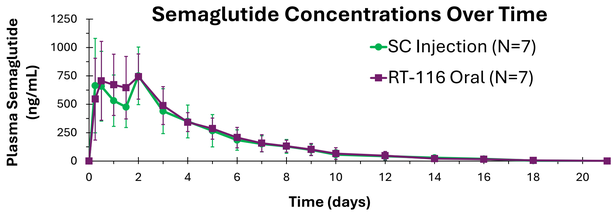
Conclusion

RT-116 capsules administered orally were safe, well-tolerated, and delivered semaglutide with high reliability. The bioequivalence and comparable weight loss efficacy to SC injections, combined with the established safety profile of semaglutide, positions RT-116 as a viable oral alternative to injectable GLP-1 therapies.

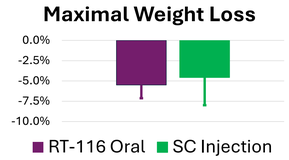
Results

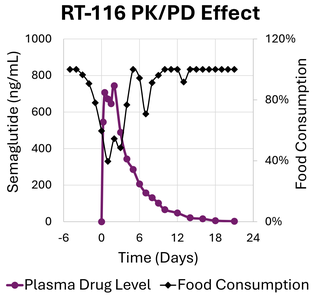
Bioequivalence Achieved
107%
Relative bioavailability

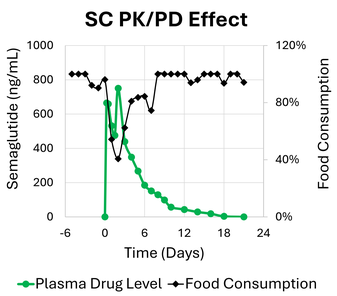




Similar Efficacy
5.5% vs 4.6%
Comparable weight loss between routes







Excellent Safety
0
Treatment-related adverse events

High Reliability
87.5%
RT-116 delivery success rate
(based on drug exposures obtained)