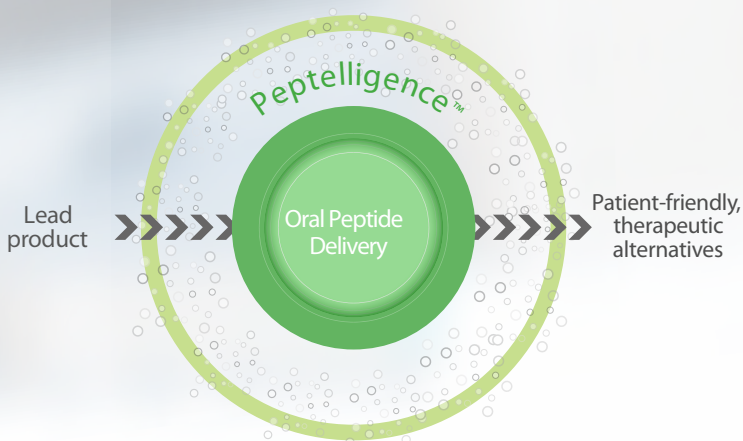


unigene

A leader in the design, delivery, manufacture and development of PEPTIDE-BASED THERAPEUTICS

Peptide therapeutics need a more patient-friendly delivery option

SOLUTION: UNIGENE'S ORAL DELIVERY



UNIGENE'S Oral Peptide Delivery

UNIGENE'S PROPRIETARY TECHNOLOGY:

- Overcomes the need for injection
- Reduces degradation in the GI tract
- Increases absorption through intestinal membranes

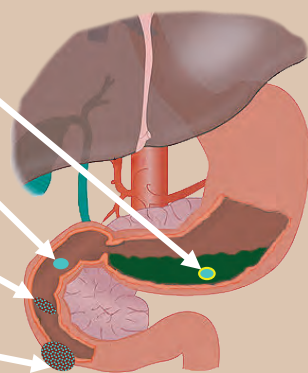
HOW IT WORKS:

Enteric coating prevents capsule from opening in stomach at low pH

Enteric coat dissolves at neutral pH in the small intestine

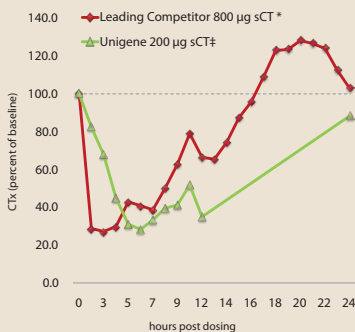
Protease inhibitor, permeability enhancers and peptide released

Peptide absorbed across intestinal wall via paracellular transport



ADVANTAGES:

- Positive Phase 3 data validates technology
- Most advanced oral peptide in development
- Up to 25% absolute bioavailability
- Not impacted by food or liquid intake
- Less API required compared to competitor
- Patent protection to 2028



Measured by the reduction of the blood marker CTx-1

UNIGENE'S ORAL DELIVERY TECHNOLOGY OFFERS:

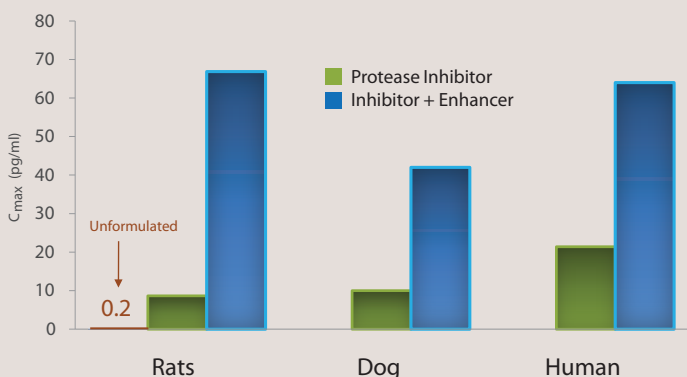
- Lifecycle management for currently approved peptides
- Greater market potential for niche peptides
- Increased commercial viability for development stage peptides

* J Clin Pharm OnlineFirst, published on July 21, 2010 as doi:10.1177/0091270010372625

‡ Unigene Phase 2 clinical trial data on file

Low Risk to Establishing Feasibility

ORAL DELIVERY CORRELATION AMONG THREE SPECIES



FEASIBILITY PATHWAY:

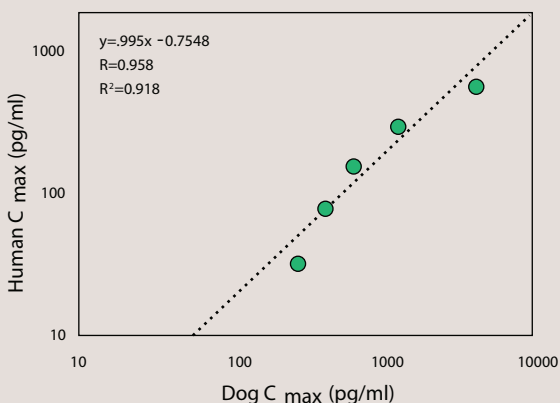
Small Animal Preclinical Models

- Intraduodenal administration of formulated peptide
- Blood samples tested for peptide PK profile

Large Animal Preclinical Models

- Enteric-coated solid dosage capsules
- Peptide bioavailability evaluated
- The dog model is the best predictor of bioavailability in humans using Unigene's proprietary oral formulation

DOG DATA DIRECTLY CORRESPONDS WITH HUMAN



Feasibility can be completed within 3 months

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