Background Paper for Retraglutide™ Oral Microdose Spray

Introduction
Retraglutide™ Oral Microdose Spray is a clinician-oriented formulation aimed at supporting appetite awareness and food noise management through precise microdosing. The product uses a 6C homeopathic ethanol alcohol base for sublingual delivery, intended for gradual titration under physician direction in clinical settings.

Incretin Biology and Appetite Regulation
Retraglutide is conceptually aligned with incretin-based pharmacology, a class of therapies that modulate appetite and metabolic regulation. Incretins are gastrointestinal hormones released in response to nutrient ingestion and include glucagon-like peptide-1 (GLP-1) and glucose-dependent insulinotropic polypeptide (GIP). These hormones stimulate insulin secretion in a glucose-dependent manner and act on central nervous system pathways that influence appetite and satiety. In particular, GLP-1 receptor activity has been shown to slow gastric emptying and promote satiety via hypothalamic mechanisms, contributing to reduced caloric intake and appetite suppression (Wikipedia).

While conventional incretin therapies (e.g., tirzepatide) are administered via injection, the underlying biology of appetite modulation is relevant to conceptualizing oral approaches to support appetite awareness in clinical contexts. Tirzepatide exemplifies this mechanism, acting as a dual agonist at GIP and GLP-1 receptors, with evidence showing impact on glycaemic control and body weight in clinical studies (Cell).

Microdosing: Concepts and Applications
In pharmacological research, microdosing refers to the administration of extremely low, subpharmacologic doses of a compound to examine kinetics or to provide minimal physiological effects without overt pharmacologic action. In research settings, microdosing is often used to assess early human exposure and safety (Wikipedia).

In product development and clinical practice, the term may also be applied to precise low-dose delivery intended to reduce unwanted systemic effects while maintaining targeted signaling modulation.

Sublingual Delivery and Drug Absorption
The sublingual route offers a highly vascularized mucosal surface that can facilitate rapid absorption of active molecules into systemic circulation, bypassing first-pass metabolism in the liver. Sublingual sprays and formulations have been used successfully for a range of small molecules and peptides where direct mucosal uptake confers advantages in onset and bioavailability (Springer).

Role of Homeopathic Ethanol Bases in Formulations
Homeopathic dilutions frequently use ethanol as a solvent. Ethanol can act as a co-solvent in highly diluted preparations, influencing the physical characteristics of the final formulation and assisting in stability. Ethanol is commonly present in homeopathic preparations depending on pharmacopoeial standards (Thieme Connect, Unbound Medicine).

Clinical Considerations
Retraglutide™ Oral Microdose Spray is intended for physician-directed use in clinical environments, with dosing protocols individualized based on practitioner judgment and patient needs. It is not intended as a standalone therapeutic for disease management but as a tool for supporting appetite awareness within a broader clinical care plan.

Selected References
Cell; Wikipedia; Springer; Thieme Connect; Unbound Medicine