

TD-INTELGEL™ · NEEDLE-FREE BUCCAL DELIVERY PLATFORM

Peptides, delivered beyond pills & needles.

Patented · human clinical tested platform

NeoPep is an innovation-driven company specializing in the research and manufacturing of needle-free, buccal-patch peptide delivery solutions.

Its patented **TD-IntelGel™** platform delivers large-molecule, temperature-sensitive actives through a buccal dissolving patch placed inside the cheek — with no injections and no gut. One familiar patch, engineered for consistent, repeatable absorption.



Intelligent hydrogel

A smart matrix that stabilizes the peptide and controls how it releases.



Buccal delivery

Absorption through the inner cheek — not the stomach.



Needle-free

No injections, no sharps, no cold-chain anxiety.



Direct to bloodstream

Bypasses the gut and first-pass metabolism.

Patented

TD-IntelGel™ platform technology

Human clinical

Tested & documented

Needle-free

Buccal dissolving patch format

<8°C

Cold-mix GMP production

THE DELIVERY CHALLENGE

Every conventional format solves one problem — while creating another.

PILLS & CAPSULES

Easy to take. Difficult to deliver.

Digestive enzymes and first-pass metabolism degrade peptides before they reach circulation.

INJECTIONS

Effective delivery. Limited convenience.

Invasive and uncomfortable — often reducing long-term patient compliance.

CONVENTIONAL ORAL STRIPS

Convenient. Not optimized for peptides.

Saliva exposure and inconsistent contact reduce peptide absorption.

What if the cheek could do the work of the **needle?**

The inner cheek is thin and rich in blood vessels that drain straight into circulation — bypassing the gut and the liver's first-pass metabolism.

INSIDE THE PATCH

TD-IntelGel™ — a patented tri-layer hydrogel platform.

**1** INCREASED BUCCAL ABSORPTION**HydroGel layer**

Holds the peptide in a stabilizing hydrogel matrix and releases it at a steady, repeatable rate.

2 CONTROLLED DIFFUSION**Structural support layer**

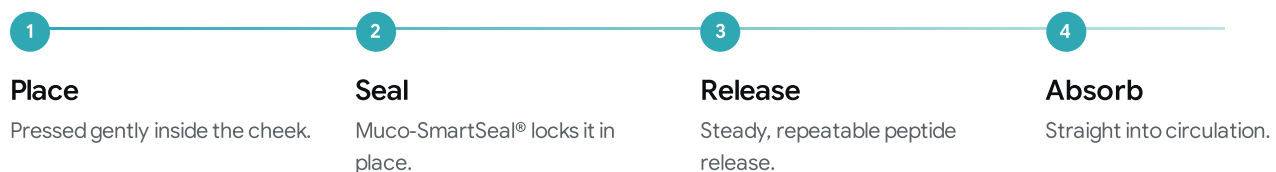
Adds strength and sustained contact for controlled diffusion across the buccal membrane.

3 STAYS IN PLACE**Muco-SmartSeal® adhesive layer**

Seals the patch at the edges — no drifting, no peptide lost to saliva.

HOW IT WORKS

From cheek to bloodstream, in four steps.



WHY IT'S DIFFERENT

Near injection-level delivery — without the needle.

Evaluated in human clinical studies measuring the bioavailability, or buccal absorption, of peptides.

Comparative delivery performance for peptides
Relative peptide bioavailability by delivery format

Tablets & capsules Very poor or nil

Oral dissolving strips Less than 10%

Injections / IV 90% — needle-based

TD-IntelGel™ buccal patch 65–90% · human clinically tested

* Performance may vary by peptide, formulation and study conditions.

TD-IntelGel™ vs injection

	INJECTION	TD-INTELGEL™
Delivery	Needle	Buccal patch
Ease of use	May need assistance	Self-applied in the cheek
Disposal	Sharps required	No sharps
Portability	Syringes & kit	Compact patch

TESTING & VALIDATION

Validated in three phases.

PHASE 01 · IN-VITRO 01

Biomimetic barrier

Permeation measured on PermeaPad™, which models the buccal membrane, and benchmarked against oral formats.

PHASE 02 · PRE-CLINICAL 02

In-vivo pharmacokinetics

Single dose vs oral suspension and SC injection — satisfactory outcomes across 70–90% efficacy levels.

PHASE 03 · CLINICAL 03

Human study vs injection

Randomised study in healthy adults — consistent absorption and estimated high bioavailability.

MANUFACTURING

Made cold, made carefully.

COLD-MIX GMP

<8°C

From mixing to finished, individually pouched patch.

Cold-mix
Combined below 8°C to preserve bioactivity.

Tri-layer forming
Formed with the Muco-SmartSeal® layer.

Batch testing
Quality and stability checks.

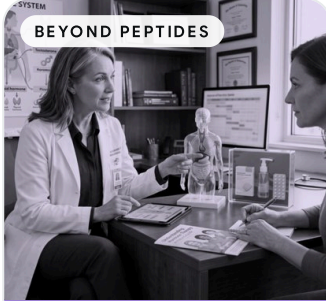
Pouching
Individually sealed for B2B supply.

Results are indicative and may vary by peptide, formulation and study conditions. Study summaries available to partners under NDA. PermeaPad™ is a trademark of its respective owner.

PLATFORM APPLICATIONS

One platform. Multiple possibilities.

Built for large, temperature-sensitive and fragile actives — on one buccal patch format.

 PROVEN STARTING POINT	 BEYOND PEPTIDES	 BEYOND PEPTIDES	 IN EXPLORATION
Peptides Fragile, temperature-sensitive peptides — the format it was clinically tested on.	Vaccines A buccal route with less cold-chain and sharps burden.	Hormones Stable delivery for large-molecule hormone therapies.	Oncology Needle-free routes for sensitive actives, with partners.

WHY PARTNERS CHOOSE NEOPEP

 Proprietary & patented Our own platform — hard to copy, by design.	 Clinically evaluated Documented for partner due diligence.	 Cold-mix GMP Sub-8°C, individually pouched.
 Patient-friendly No needles, no sharps — simple and discreet.	 Your brand We handle research, manufacturing and supply.	 Documented Specs, COAs and IP summary under NDA.

Ways to work with NeoPep - Bulk supply - OEM manufacturing - Private label - Distribution - Licensing & co-development	1 Discovery Share your requirement.	2 Development Formulation & branding.	3 GMP manufacturing Cold-mix, tested, pouched.	4 Supply & scale Bulk supply with COA.
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PARTNER WITH NEOPEP

Bring your molecule to a needle-free delivery platform.

For pharma, biotech, healthcare brands and distributors.

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