Novochizol
First-in-class polysaccharide materials technology

BREAKTHROUGH CHITOSAN FORMULATION OF BOTULINUM TOXIN

INTRACELLULAR DELIVERY IN DIFFERENT TISSUES, ENABLING NEW MECHANISMS OF ACTION

Chitosan, a derivative of chitin, is the second must abundant polysaccharide on earth. It has numerous applications in healthcare and other fields, but its inherent characteristics limit its use.

Novochizol™ technology quantitatively transforms single linear chitosan molecules into uniformly sized nanoparticles that can be used alone, as excipients, emulsifiers or carriers of countless active ingredients.

Novochizol™ overcomes the limitations of chitosan, enhances its existing beneficial properties and displays new characteristics, offering first-in-class solutions for bioadhesive, sustained tissue-targeted drug delivery.

Watch a 5-minute video presentation of Novochizol™

NOVOCHIZOL™ vs CHITOSAN

Chitosan

- Solubility only at acid pH
- High viscosity
- Rapid biodegradation
- Low physical stability
- Low chemical stability
- Limited physical states
- Batch-to-bath heterogeneity
- Limited carrier possibilities

NOVOCHIZOL™

- Solubility/dispersibility under all conditions
- Low viscosity
- Slow biodegradation
- High physical stability
- High chemical stability
- Aqueous suspensions, aerosols, hydrogels, solid states
- Sustained release of small molecules, peptides, nucleic acids, and proteins, including recalcitrant , hydrophobic compounds.

NOVOCHIZOL™- BOTULINUM TOXIN A FORMULATIONS (N-BoNT/A)

- N-BoNT/A enables physically targeted delivery of botulinum toxin inside neurons and a variety of other cell types.
- N-BoNT/A prevents any systemic diffusion of botulinum toxin and any distant effects anywhere in the body.
- N-BoNT/A enables a rapid, yet sustained release of botulinum toxin over extended periods of time.
- BoNT/A formulations increase botulinum toxin LD_{50} by 40%, creating new therapeutic windows in clinical settings.
- N-BoNT/A may be formulated as injectables, hydrogels, aerosols, or coatings matrices for various medical devices.

BoNT/A IN ATRIAL FIBRILLATION

- N-BoNT/A injections into epicardial fat pads lead to substantial, long-lasting reduction in atrial fibrillation.
- N-BoNT/A anti-arrhythmic effects have been shown to span several months in preclinical animal studies.
- In human trials, the clinical benefits of a single intraoperative BoNT/A injection last several years.
- N-BoNT/A may be administered intraoperatively, in an x-ray/MRI-guided intervention or via a medical device.
- **A full preclinical efficacy/safety package is available.**

BoNT/A IN OTHER MEDICAL INDICATIONS

Botulinum toxin delivered by Novochizol™ is capable of inhibiting vesicular secretion in a general fashion, in different cell types, leading to new mechanisms of actions in different medical indications such as:

- **HYPERTENSION**: N-BoNT/A injections into renal arteries inhibit renin release, leading to lower blood pressure.
- **ONCOLOGY**: N-BoNT/A intra-tumoral injections are expected to inhibit immunosuppressive exosome trafficking.
- **HYPERHIDROSIS**: N-BoNT/A may replace cumbersome botulinum toxin injections by topical applications.
- **OTHER MEDICAL CONDITIONS:** whenever inhibition of vesicular secretion may disrupt disease mechanisms.

NOVOCHIZOL™ FORMULATIONS OF OTHER TOXINS

Additional formulations of botulinum and non-botulinum toxin types may be delivered to different cell types, reaching new intracellular targets extending the toxins' therapeutic modes of actions to meet a variety of medical needs.

FURTHER INFORMATION: www.novochizol.ch info@novochizol.ch Tel +41 76 370 73 25