

# Intranasal Sumatriptan Powder Delivered with a New Device is as Effective as 6 mg SC Sumatriptan in Preventing Glyceryltrinitrate (GTN) Challenge Induced EEG Changes in Migraineurs

Remy Luthringer<sup>1</sup>, Colin D Sheldrake<sup>2</sup>, Anthony Flint<sup>2</sup>, Per G Djupesland<sup>2,3</sup>

(1) Forenap Pharma, Rouffach France (2) OptiNose UK Ltd, Wiltshire United Kingdom & (3) OptiNose AS, Oslo Norway

FORENAP *Pharmaceuticals*

## Background

- Current nasal delivery devices are suboptimal in reaching target sites beyond nasal valve<sup>1</sup>
- Nasal sprays deliver predominantly to the non-ciliated anterior region where it is readily sniffed along the nasal floor and swallowed
- The bi-directional OptiNose nasal devices improves delivery to the highly vascularized respiratory mucosa beyond the nasal valve<sup>2</sup>
- GTN challenge induces migraine attack in 75% of patients in absence of pretreatment<sup>3</sup>

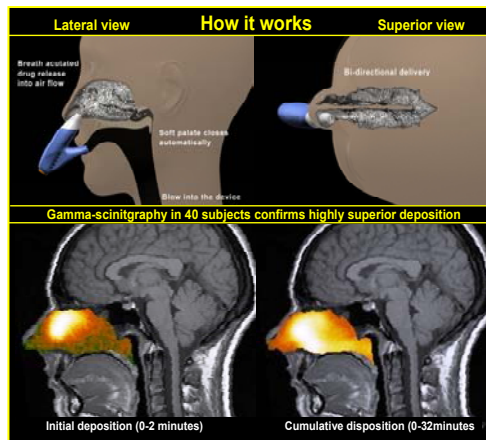
## Objectives

- To compare, by quantified wake EEG (qEEG), effects of IN sumatriptan succinate delivered using the OptiNose powder delivery device with SC sumatriptan on GTN-induced migraine
- To compare the pharmacokinetics (PK) and tolerability of IN and SC sumatriptan.

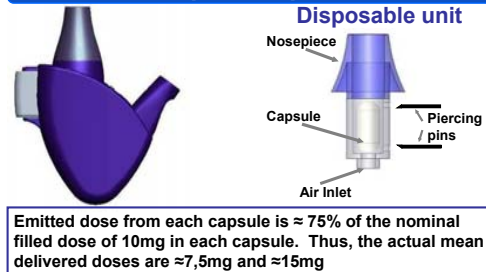
## Study design

- 12 patients with moderate or severe migraine without aura
- Controlled, randomized 3-way cross-over study.
- Pretreatment with SC sumatriptan (6mg) and IN 10mg and 20mg (2 x 10mg) delivered 15 minutes before the GTN-challenge (0.9mg sublingual)
- Assessment of pharmacokinetics, quantitative wake EEG (qEEG) and migraine/pain scores

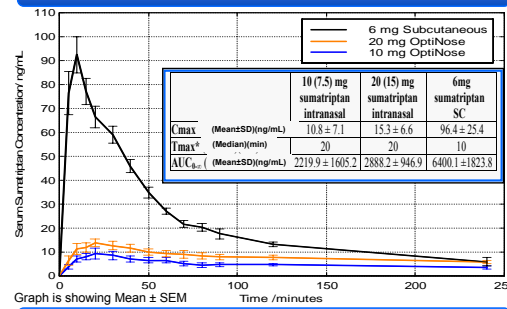
## Bi-directional nasal delivery



## Multi-use OptiNose powder device



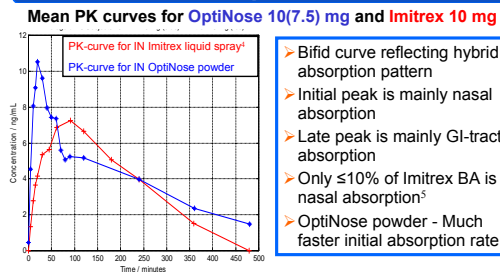
## Results - Pharmacokinetics



## No migraine attacks occurred

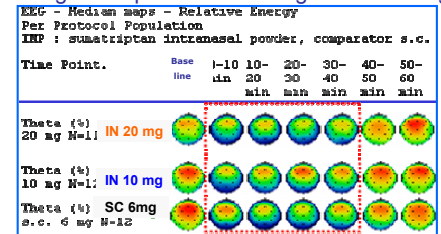
Sumatriptan powder delivered with the OptiNose device is as efficient as 6mg SC in preventing migraine attacks in migraineurs receiving GTN challenge despite much lower bioavailability

## Much faster absorption than Imitrex IN



## Results - Median qEEG maps

Similar qEEG-profile for IN sumatriptan powder and 6mg SC in patients receiving GTN challenge



## Conclusions

- IN sumatriptan powder is safe and well tolerated. No reports of bad aftertaste
- IN sumatriptan powder delivered with the OptiNose device is much faster absorbed from the nose than marketed nasal product
- As effective as SC in preventing migraine attacks after GTN challenge
- Mean qEEG changes for OptiNose IN Sumatriptan powder are similar to SC
- Results support that CNS effects correlates with the rate, not extent, of drug absorption<sup>6</sup>
- Phase II results will be available in 2008

## References

- Aggrawal R et al. Clin. Otolaryngol. 2004; 29, 201-205
- Djupesland PG et al. Laryngoscope. 2006; 116: 466-72.
- Sances G et al. Cephalalgia. 2004; 24:110-9.
- Food and Drug Administration, NDA 20-826.
- Furuse E et al. Clin Pharmacokinet. 2002; 41(11): 801-811.
- Fox WA, Headache. 2004; 44: 142-147.