Impel has developed its novel Precision Olfactory Delivery (POD) device for the delivery of therapeutics to the upper nasal cavity. Nasal delivery with the POD device enables drugs to effectively access the CNS, that would otherwise be excluded by the blood-brain barrier. Impel’s POD device technology delivers active, meaningful and effective concentrations of drug into various regions of the brain, generates meaningful pharmacodynamic drug responses in target systems and reduces systemic exposure. The POD device has been shown to be effective in man. Impel’s business model is to partner its technology to pharmaceutical and biotechnology partners. Impel has entered into more than 10 funded collaborations with major phamras and generic companies.

As innovators in nose-to-brain drug delivery, Impel NeuroPharma’s expertise complements the research and development programs underway within pharmaceutical and biotechnology companies. Impel NeuroPharma provides collaborative support in study design, execution, and analysis while considering patient comfort, regulatory approval pathways, and cost effectiveness.

Management Team:
John Hoekman, CSO/Founder
Michael Hite, CEO/Founder
Stewart Parker, Board Member

Research/Product Focus:
Impel’s Precision Olfactory Delivery (POD) device delivers aerosolized drugs to the upper nasal cavity where they are directly transported into the brain, effectively bypassing the blood-brain barrier. This region is the only part of the body where primary brain neurons are exposed to the outside environment. Due to the lack of a significant biological membrane barrier and the passive diffusion nature of the transport, studies have shown that both small molecules and biologics can be delivered along this pathway, leading up to 100 fold increases in brain concentration compared to IV dosing.

The primary challenge in achieving significant nose-to-brain drug delivery is depositing drug on the olfactory region of the nasal cavity. Due to the complex architecture of the nasal cavity, drug delivered with standard nasal devices such as droppers, sprays, or pumps typically deposit less than 5% of drug in the olfactory region whereas Impel's POD device technology results in greater than 50% deposition in this region.

The Precision Olfactory Delivery (POD) device is a scalable technology that allows therapeutic compounds to enter clinical development and progress through the product pipeline that may otherwise be unable to achieve effective levels in target CNS (central nervous system) tissues.

The POD device is compatible with both small molecule and biologic drugs providing our partners with multiple benefits:
• Enhanced CNS drug penetration and localization
• Compatible with powder and liquid formulations
• Single or multi-dose
• Hand-held, easy to use
• Low cost, disposable

We have clinical supplies of the POD device and can assist in compilation of regulatory filings regarding the device technology.

Recent Milestones:
1. H. Stewart Parker Joins Impel’s Board of Directors - October, 2014
3. Impel NeuroPharma Completed Industry’s First Nose-to-Brain Human Imaging Study - April, 2013

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