

Around the clock therapy through continuous dosing



DUROS[®] Technology Platform

The DUROS[®] technology platform is an implantable drug-dispensing osmotic pump. The system is shaped as a small rod with titanium housing, which can be as small as a matchstick, designed to release drugs.

Overview of Technology

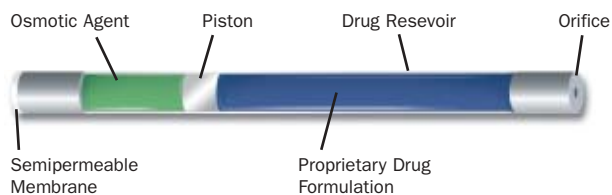
The DUROS[®] pump conceptually resembles a miniature syringe in which drug is pushed out in highly controlled, minute dosages. Through osmosis, water from the body is slowly drawn through the semi-permeable membrane into the pump by salt (osmotic agent) residing in the engine compartment. The water drawn into the engine compartment expands the osmotic agent and slowly and continuously displaces a piston to dispense small amounts of drug formulation from the drug reservoir through the orifice. The osmotic engine does not require batteries, switches or other electromechanical parts to operate.

Systemic and Site-Specific Administration using DUROS[®] Technology

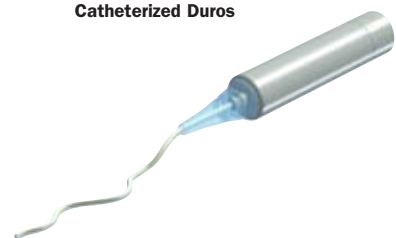
The DUROS[®] system can be used for therapies requiring systemic or site-specific administration of a drug. To deliver drugs systemically, the DUROS[®] system is placed just under the skin, for example in the upper arm, in an outpatient procedure that is completed in just a few minutes using local anesthetic. Removal or replacement of the product is also a simple, quick procedure completed in the doctor's office.

To deliver a drug to a specific site, DURECT is developing proprietary miniaturized catheter technology. The catheter can be attached to the DUROS[®] system to direct the flow of a drug to the target organ, tissue or synthetic medical structure, such as a graft. Site-specific delivery enables a therapeutic concentration of a drug to be administered to the desired target without exposing the entire body to a similar concentration. The precision, size and performance of the DUROS[®] system will allow for continuous site-specific delivery to a variety of precise locations within the body.

Duros Technology Dimensions: 44mm L x 3.8mm D



Catheterized Duros



Compounds delivered using DUROS® Technology

DUROS® has the potential to provide more flexibility than competitive products regarding the types of drugs that can be administered, including proteins, peptides and genes because the drug dispensing mechanism is independent from the drug substance.

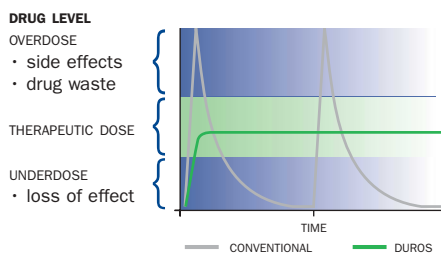
Performance Characteristics of the DUROS® Technology Platform

- DUROS® can be designed to deliver up to 1,000 mg of concentrated drug from months to one year.
- The engine can generate pressure sufficient to deliver highly concentrated, viscous and non-water-based drug formulations.
- The system can be engineered to accurately deliver a drug formulation at dosing rates down to 1/100 of a drop per day on a continuous basis.
- The titanium shell of the system protects the drug formulation inside from contact with body fluids, thus protecting it from degradation by enzymes, water and clearance processes within the body.
- The delivery rate is typically designed to be constant \pm 10% for better than 95% of its drug content.
- The delivery rate in vivo is equal to the delivery rate in vitro where the delivery rate can be controlled for quality.

Continuous Delivery and Therapeutic Window

Pharmaceutical systems can provide continuous, controlled dosing automatically to a patient. Most drugs must be present in a minimal amount in the body to have significant therapeutic effects. Above a certain level, however, the drug can be overdosed, causing toxic or unwanted side effects. It is between these two levels where the optimal dosing level lies. The DUROS® system can allow dosing within the optimal therapeutic range, as opposed to the spikes and troughs associated with repeated administrations of pills or bolus injections.

Continuous Delivery and Therapeutic Window



Benefits of Continuous Dosage vs. Conventional Drug Administration

- Better control of treatment regimens with added convenience
- Potential elimination of self-administered injections
- Improved efficacy
- Increased patient compliance
- Reduction of side effects

DUROS® Technology Enables the Commercialization of Biotech Drug Products

The Company's unique capabilities may greatly accelerate the development and commercialization of many biotech compounds/genomics targets. The DUROS® system can deliver large molecules to its intended site of action.

Technology Platform Is Proven and Patented

The potential of the DUROS® technology, licensed from ALZA, was demonstrated by the Food and Drug Administration's approval in March 2000 of ALZA Corporation's Viadur™ product for the palliative treatment of prostate cancer, the first product utilizing the DUROS® platform.

DURECT is holding an exclusive license from ALZA Corporation to develop and commercialize products in selected fields based on the DUROS® implant technology

Viadur™ and DUROS® are trademarks of ALZA Corporation.



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