

# Spray characterisation testing

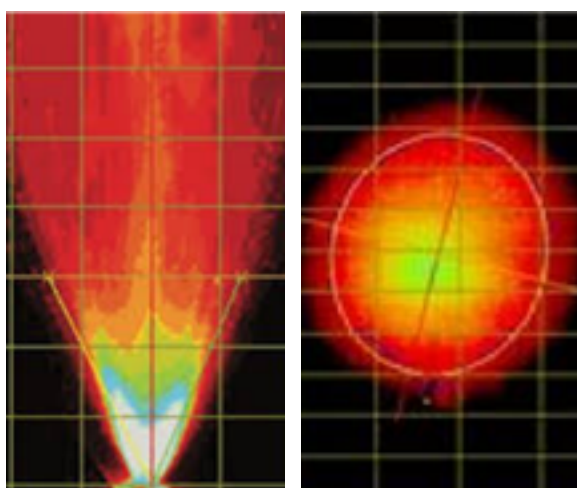


## SprayVIEW® measuring systems by Proveris\*

At Recipharm, we have the expertise and specialised equipment to provide analytical support for the development of inhaled products, specifically nasal sprays, oral sprays and pMDIs. This includes the use of SprayVIEW® measurement system and automated actuation stations by our expert development team.

Inhalation products are extremely complex to develop and manufacture and it is important to understand all potential interactions between the formulation and the delivery device throughout the development stages.

Spray pattern and plume geometry are critical attributes when characterising nasal sprays, oral sprays and metered dose inhaler aerosols.



Images acquired through real time, high speed camera footage of aerosols or sprays emitted from a device allow for subsequent data analysis of spray pattern and plume geometry to determine the shape and size of the aerosol or spray.

The automated actuation stations allow for consistent actuation using parameters such as actuation velocity and acceleration, minimising intra- and inter-device variability.

Actuation graphs are collected during spray pattern and plume geometry measurements displaying the actuation profile which can be used to determine the force-to-actuate of the device.

SprayVIEW® measurement systems are not only valuable tools to guide drug product development but can also be used to support quality control for container closure components (i.e. valves, pumps) and finished drug products.

## For spray pattern and plume geometry test services at Recipharm, we offer:

- ▶ Inhalation and nasal spray product development from initial formulation/process development to registration, commercial batch release and product characterisation.
- ▶ IVBE studies in generic inhalation and nasal spray product development.
- ▶ Expertise in developing and validating SprayVIEW® based methods for aerosol and nasal spray testing.
- ▶ Support with device, formulation, or process related changes during product life cycle.



## Why choose Recipharm:

- ▶ **Comprehensive offering:** our integrated service manages complexity and reduces risk for our customers.
- ▶ **Experience and track record:** Recipharm is a leading CDMO in the inhalation space with a long history in inhalation drug product and device development and manufacturing.
- ▶ **We understand your challenges:** Our depth of knowledge means we can overcome the challenges associated with inhalation drug products and devices. By developing inhalation products with the device and commercial manufacture in mind we eliminate hurdles and reduce time to market.
- ▶ **Our global network:** We have facilities in the US and EU dedicated to inhalation development and manufacturing, including a large pilot plant for clinical manufacture and small-scale manufacture. In addition, our services are supported by strong corporate health, safety and environment (HSE) and cGMP quality systems to ensure the highest levels of compliance across worldwide markets.

## From development to commercial – experience at every stage

Recipharm offers a fully integrated service for developing and manufacturing inhalation drug products and devices to the global pharmaceutical market, including pressurised metered dose inhalers (pMDIs), soft mist inhalers (SMIs), dry powder inhalers (DPIs), unit dose and multi dose nasal sprays.

Recipharm has a long history in inhalation device design & development and manufacturing. By developing inhalation products with the device and commercial manufacture in mind we minimise hurdles and reduce time to market.

*\* SprayVIEW® is a registered trademark of Proveris Scientific Corporation.*

### About us

Established in 1995, Recipharm's manufacturing, fill & finish, and delivery-device services encompass a wide variety of drug dosage forms and modalities. Recipharm is an industry leading CDMO with over 30 facilities and 9,000 employees globally – supporting companies that are developing small molecules, biologics, and drug-device combinations. The company operates development and manufacturing facilities in France, Germany, India, Israel, Italy, Portugal, Spain, Sweden, the UK and the US.

Introducing ReciBioPharm, Recipharm's biologics business combining the capabilities of recently acquired CDMOs Arranta Bio, Genlbet and Vibalogics. Our expanded biologics drug development and manufacturing services encompass technologies based on live viruses and viral vectors, live-microbial biopharmaceutical products, recombinant proteins, nucleic acid-based mRNA and plasmid DNA production.