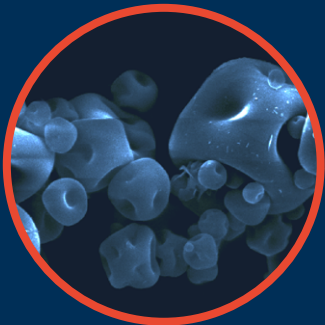


# Dry Powder Inhaler Products – Choose a partner to help you succeed

- Advance your DPI programme from pre-clinical to commercialisation with integrated formulation, device, and development services
- Device flexibility with capsule- and blister-based platforms
- Access commercially-validated Vectura devices used in products approved in US, EU, UK and Rest of World



## Our integrated dry powder services



Particle Engineering & Formulation Development



Capsule- & Blister-based Device Platforms

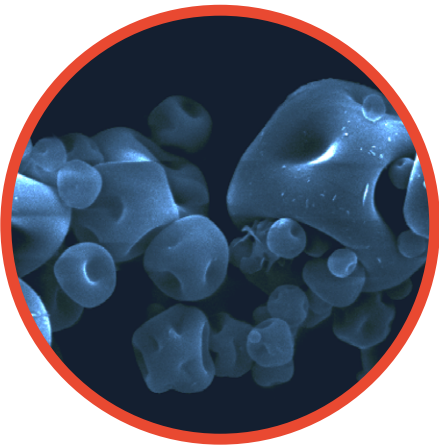


Advanced Inhalation Analytics



GMP Manufacturing

# Particle engineering and formulation development to optimise drug delivery



With **micronisation** and **spray-drying** capabilities, particle size and aerosol performance can be optimised for both small molecules and macromolecules, including biologics.



Enhance powder flow and aerosolisation characteristics using **force control agents** and advanced **low- and high-shear blending**.

## Device flexibility with capsule- and blister-based platforms

Select the right DPI device for your programme and phase of development



Fast-to-clinic approaches with non-proprietary capsule technology from early development to smallscale commercialisation



### Open-Inhale-Close (OIC)

3 user steps  
Designed with digital connectivity in mind



Commercially-validated, blister-based, device technology for multi-dose applications



### Gyrohaler®

5 user steps  
Approved & marketed in UK, EU and Rest of World



### Lever Operated Multi-dose Inhaler (LOMI)

4 user steps  
Approved & marketed in US



### F1P Unit-dose

Higher payload volume with cyclone design to assist aerosolisation for greater lung deposition

## Require a bespoke drug delivery device?

With expertise in device design, human factors, navigating complex regulatory requirements for combination products, and a track record of commercially-validated devices, our expert team can support device development from concept to commercialisation.

Find out more at [www.vectura.com](http://www.vectura.com)

# Advanced analytics to improve understanding of physical properties



Advanced characterisation analytics can reduce time to target an optimal formulation, improve the performance of formulation & device, and provide better insight into lung deposition to reduce development risk.

- **Physico-chemical (Q3 type)** methods including throat models and patient inhalation profiles
- **Dedicated physical properties** capabilities including Morphologi 4-ID particle analysis
- **Biologics evaluation methodologies** including SDS-PAGE and dynamic light scattering

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## Scale-up with GMP manufacturing

Scale-up your programme through all phases of clinical development to small-scale commercialisation

- **Spray-drying** - For high-dose products or biologics requiring low-energy processing
- **Powder blending** - High shear, low shear (tumble blending) and mechanofusion
- **Capsule and blister filling** - Volumetric, dosator and fill-to-weight technology
- **Device assembly** - Up to 1 million devices per year



See how our dry powder inhalation services can advance your programme through all stages of development

Please contact: [enquiries@vectura.com](mailto:enquiries@vectura.com)  
[www.vectura.com](http://www.vectura.com)



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