



Raybow USA Site - Brevard, NC, USA

CDMO Services of Raybow - A Jiuzhou Pharmaceutical Company

We are a global CDMO with 11 sites for chemical development from pre-clinical through development to commercial launch of drug product. We develop medicinal chemistry processes and may ultimately scale them up to multi-ton quantities for commercial launch. We are focused on innovative small molecules, including peptides, for both DS and DP.

Green Chemistry Focus

- Flow chemistry units are installed in all our facilities including both R&D and manufacturing facilities for efficient process development and transfer to manufacturing. We have everything from lab and intermediate scale units, all the way to custom designs that may produce 100+ tons of product per year.
- Asymmetric Ligands Technology Platform has been applied successfully to optimize over 200 asymmetric reactions, and being used in the process of more than a dozen commercial chiral intermediates/APIs of innovative drugs.
- Fluorination Chemistry Technology Platform could selectively and efficiently introduce SulfoxFluor, difluoromethyl or trifluoromethyl functional group into the target compound. Raybow has made great progress within flow, ligands and fluorination to make reactions safer, more economical and much more sustainable.

Quality and EHS

- ISO14001/OSHA18000 certified system.
- Equipped with closed charging system, exhaust gas collecting system, hot thermal oxidizer, solvent recycling and in-house waste treatment plant.
- Raybow has been recognized with a bronze Ecovadis medal while Jiuzhou has achieved silver.
- Repeatedly passed worldwide regulatory authority inspections (FDA, Europe, Japan, China, Brazil, Mexico).

Global Operations

- 550+** experienced chemists
- 2,500+** Raybow employees (5000+ with our parent company)
- 800+** clients worldwide
- 70%** of revenue from Western pharma and biotech
- 1,000+** projects delivered
- 98%** on-time delivery (OTIF)

R&D and Manufacturing in both the United States and China. Sales & logistics offices in Germany and Denmark.

Chemistry Development Services

- Custom Synthesis, route scouting, optimization and design
- Synthesis Route Development including DoE
- Process Development and Business Continuity, including Sourcing and Continuity strategies
- Analytical Method Development and Validation
- Extensive on-site analytical instrumentation
- Designing manufacturing for optimal sustainability and minimal environmental footprint

R&D Kilo Labs and Pilot Plants

- Up to 72 L reactors in Kilo labs
- Micronization for particle sizing
- Spray drying on-site for both small scale and full industrial scale
- Four modern pilot plants in both U.S. and China

Current Expansion at our Brevard Site

- Infrastructure will support multiple reactors with capacities from 750 L to 1250 L
- Ongoing plans are to triple our lab space, capacity and U.S. workforce

One-stop Formulation CDMO Services

- Formulation Development for most dosage forms
- Design and evaluation of pre-dosage forms of innovative drugs and conducting preclinical pharmaceutical research
- Pilot batch, clinical batch and commercial batch production of tablets, oral solutions, gels, capsules including Schedule IV psychotropic medicines