Johnson Matthey
Pharma Services

CASE STUDY

Development of a scalable process from a g-scale medicinal chemistry route

Summary
Client needed JMPS to develop an economical, scalable process from the original medicinal chemistry route (gm) for plant production (100+ kg).

Approach

- Conducted route scouting exercise reducing the number of synthetic steps from 19 to14.
- Identified and developed a catalytic carbonylation step in catalyst screening lab and scaled into 500 gal reactor.
- Identified unique reagent to convert functionality in one step; previously converted in two steps.
- Implemented engineering and handling controls for potent intermediate.
- Utilized Pharma Materials 2000 gal reactor trains to reduce cost and timelines.
- Improved yield from 2-3% to 28% overall.

Results
Developed process amenable to 200kg scale while reducing cost of goods by 80%. Supplying API to both US and ex-US clients for phase II clinical programs.