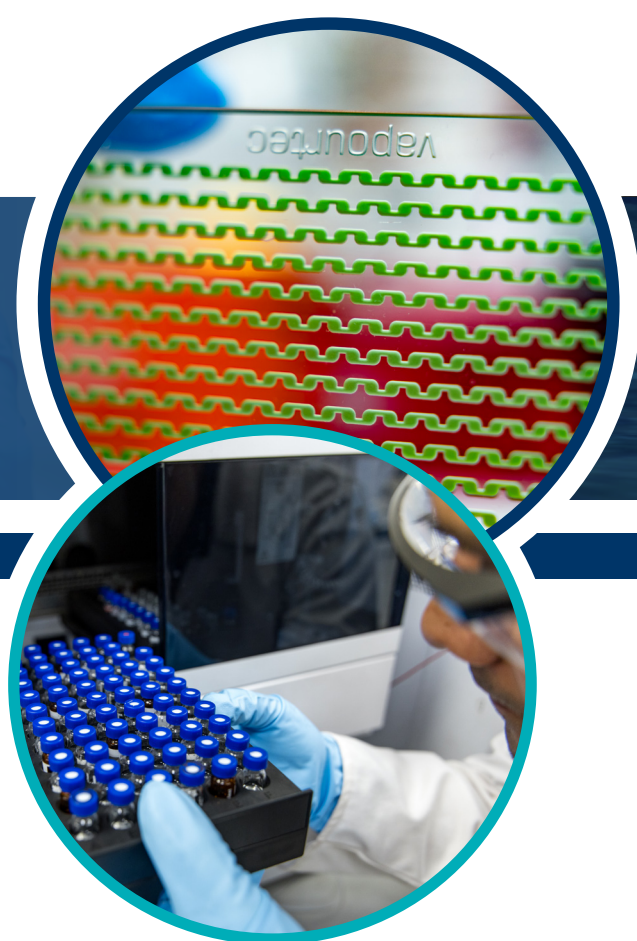


FREQUENTLY ASKED QUESTIONS

FuturePHARMA Small Molecule Facility



1. What is the FuturePHARMA Small Molecule Facility (SMF)?

The SMF is a national pilot-scale facility hosted by the CSIR for developing, scaling and demonstrating the manufacture of small-molecule active pharmaceutical ingredients (APIs). It bridges the gap between laboratory research and commercial pharmaceutical production.

2. What are APIs?

APIs are the chemically synthesised compounds responsible for the therapeutic effect of medicines. They are a critical component of the pharmaceutical manufacturing value chain.

3. Why is the SMF strategically important for South Africa and Africa?

South Africa imports approximately 98% of its APIs, creating exposure to international price fluctuations, supply disruptions and export restrictions. The SMF builds local capability to develop and scale API manufacturing processes, strengthening pharmaceutical resilience and health security.

4. What makes the SMF different from a conventional pharmaceutical manufacturing facility?

The SMF focuses on process development, optimisation and pilot-scale demonstration

rather than only commercial production. It de-risks manufacturing processes so that proven technologies can subsequently be transferred to commercial manufacturers.

5. What is continuous-flow manufacturing?

Continuous-flow manufacturing is a process in which chemical reagents continuously move through compact, precisely controlled reactors. It can improve process efficiency, safety, scalability and consistency compared with conventional batch processing.

6. What are the benefits of the SMF's continuous-flow technology?

The technology can enable faster reactions, improved yields, reduced waste and more efficient use of solvents and energy. Modular systems also provide flexibility to develop and manufacture different APIs, while small reactor volumes can improve the safe handling of challenging chemistry.

CONTACT: Dr Jenny-Lee Panayides | E-mail: jpanayides@csir.co.za

www.csir.co.za



science, technology
& innovation

Department:
Science, Technology and Innovation
REPUBLIC OF SOUTH AFRICA



CSIR
Touching lives through innovation

7. How does the SMF support local pharmaceutical manufacturing?

The facility develops and demonstrates API processes at kilogram to multi-kilogram scale, reducing technical and scale-up risks. These de-risked processes can then be transferred to South African manufacturers for commercial production.

8. What impact can the SMF have beyond pharmaceutical manufacturing?

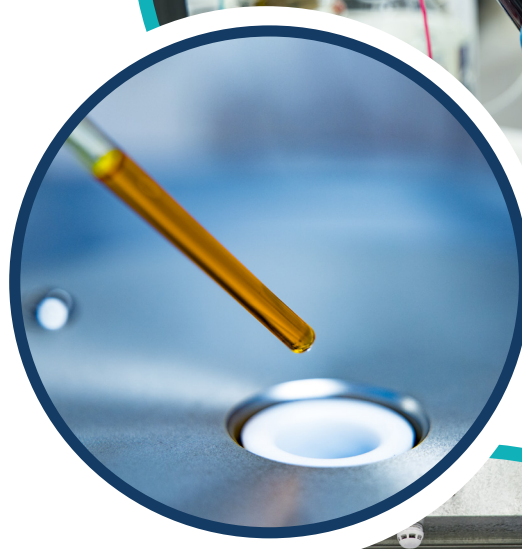
The facility can contribute to industrial development, skills development and local value creation by stimulating demand for chemicals, starting materials, engineering services and manufacturing capabilities, while developing specialised expertise in flow chemistry and pharmaceutical process development.

9. Who can partner or collaborate with the SMF?

The SMF is open to pharmaceutical companies, manufacturers, universities, research institutions, technology providers, funders and development partners. Collaboration can include process development, pilot-scale demonstration, technology transfer, collaborative research, investment and skills development.

10. How can organisations engage with the SMF?

Engagement opportunities include contract process development, pilot-scale campaigns, technology transfer and licensing, contract development and manufacturing, collaborative research, investment and co-investment, and skills partnerships. Opportunities also include supporting future cGood Manufacturing Practice expansion and co-developing priority API pipelines.



CONTACT: Dr Jenny-Lee Panayides | E-mail: jpanayides@csir.co.za

www.csir.co.za



**science, technology
& innovation**

Department:
Science, Technology and Innovation
REPUBLIC OF SOUTH AFRICA



CSIR

Touching lives through innovation