

Special Package for Bulk Drugs Parks promotion schemes

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New Delhi, March 30 (India Science Wire): The Indian pharmaceutical industry is the third largest in the world by volume of drugs produced. However, it is critically dependent on imports of raw materials or key starting materials (KSMs), to the extent of 80% in some cases, mainly from China. Drug security, self-sufficiency and continuous supply of essential medicines are critical for national security and healthy population. As part of its multi-pronged response to the medical emergency situation prevailing in the country due to COVID-19 lockdown for an extended period, the Union Cabinet has approved a special package for Bulk Drugs Parks promotion schemes.

This package will help to finance common infrastructural facilities and production-linked incentive schemes for the manufacture of KSMs, drug intermediates and active pharmaceutical ingredients (APIs) in the country.

In consultation with industry experts on essential APIs, the organic chemistry and chemical engineering scientists of the National Chemical Laboratory (NCL) analysed the structures of chemical intermediates and the state of readiness for employing synthetic routes, which are scale-able and economical.

For 3-4 drug intermediates, bulk chemicals, research and development (R&D) projects are already ongoing and these will be fast tracked. For remaining 4-5 molecules, the most efficient routes considering atom economy, novel catalysis, flow chemistry, process intensification, plant safety, cost of raw materials, reagents and solvents, and recycling of by-products, and energy management have been designed. These chemical processes are expected to bring down the cost of production through continuous flow synthesis, process optimization and reaction engineering and NCL will play role in this.

More than 27 bulk drugs covering different therapeutic classes such as anti-viral, retro-viral, antibiotics, anti-bacterial, anti-fungal, cardiovascular, diabetes, cholesterol lowering, anti-cancer, and pain killers like paracetamol are synthesized from about 10-12 simpler building blocks or KSMs, drug intermediates. Self-sufficiency in drug supply chain for India means indigenous processes and platform technology to produce these important KSMs.

Prof. Ashwini Kumar Nangia, Director of NCL, is hopeful that the organization will be able to release the R&D reports to the government and chemicals and pharmaceutical industry bodies soon. "The capability and infrastructure for further synthesis of final APIs from the intermediate KSMs largely exists in the country," said Prof. Nangia. (India Science Wire)

Keywords: Bulk Drug Parks, Key Starting Materials, special package