GOVERNMENT OF INDIA
MINISTRY OF CHEMICALS AND FERTILIZERS
DEPARTMENT OF PHARMACEUTICALS

LOK SABHA
UNSTARRED QUESTION NO. 1170
TO BE ANSWERED ON THE 9TH FEBRUARY, 2024

Generative AI in Pharmaceutical Research

1170. SHRI S. JAGATHRAKSHAKAN:

Will the Minister of **CHEMICALS AND FERTILIZERS** be pleased to state:

(a) whether the Government is aware that Generative AI (Gen AI) can revolutionize pharmaceutical research by predicting how specific compounds interact with different targets in the body, expediting drug discovery and development, can identify potential drug candidates more rapidly, leading to breakthrough treatments for various diseases, and can also assist in identifying suitable patient cohorts for clinical trials, optimizing the research process and accelerating the delivery of innovative therapies to patients in need;
(b) if so, the details thereof; and
(c) the steps proposed to be taken by the Government for adopting this technology to speed up the traditional drug discovery process in the country which presently is time-consuming and expensive?

ANSWER

MINISTER OF STATE IN THE MINISTRY OF CHEMICALS & FERTILIZERS
(SHRI BHAGWANTH KHUBA)

(a) to (c): Yes, Generative AI is revolutionizing the pharmaceutical industry by analyzing molecular properties, projecting compound models, and predicting outcomes. Generative AI holds significant importance in pharmaceutical research due to its ability to accelerate drug discovery and development processes. Key aspects include drug design and discovery, optimizing drug formulation, target identification and validation, AI algorithms for drug side effects prediction, optimizing clinical trials, data analysis and integration. In India, it's being used for patient-centric applications and drug development, with biotech startups leading the way.

National Institutes of Pharmaceutical Education & Research (NIPERs) under the aegis of the Department of Pharmaceuticals is training, educating and undertaking research using AI. NIPERs are integrating the AI/ML tools in Drug Discovery and Development and Health Care Projects to speed up traditional drug discovery process and its translational output. Further, the Department of Biotechnology has implemented projects for use of Generative AI in Pharmaceutical research. In addition, CSIR-Central Drug Research Institute (CSIR-CDRI), Lucknow is also engaged in research activities using AI in collaboration with other agencies.

****