INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

MATERIALS MANAGEMENT DIVISION

Powai, Mumbai - 400076

Department of Chemistry, IIT Bombay

Technical Specifications for Microwave based Automated Peptide Synthesis System/ Automated Peptide Synthesis System with Heating Capacity.

General

Most robust, fully automated bench top Solid Phase Automated Peptide Synthesizer with excellent performance, ease of operation, flexibility for our Central instrument facility to be used by multiple users.

Basic system requirements

1. System must should be able to conduct solid phase peptide synthesis with the ability to load all reagents except resin automatically.
2. System must have the ability for heating the reaction flask using a focused microwave delivered power of 300 watts or more

   OR

   The system should have latest, most advanced, rapid and precise heating technology preferably.
3. This system should be able to add at least 27 or more amino acid, from vessels automatically.
4. All the steps like deprotection, coupling, washing should be done automatically and volume of amino acid bottles should be 120 ml or more.
5. Should have facility to load natural as well as unnatural amino acids
6. System should have automatic detection system in case of air bubbles or any other defect in amino acid delivery & level detection in waste reservoir

7. Software of the offered system should be able to deliver microwave power in accordance with pre-set programme

   OR

   Heating must be user's defined programmable steps.

8. System should be controlled through either laptop or desktop PC or equivalent. Suitable software for operation should be offered in the main quotation.
9. A branded PC wit h i5 processor having at least 8GB RAM and 1GB hard drive with 22 inch monitor needs to be supplied.
10. The software should be able to calculate the total synthesis time for each peptide and amount of reagents required during synthesis.
11. The system should have self-diagnostics and automated cleaning routines.
12. System must have facility to synthesize peptide 1 mmol or more up to 5 mmol scale
13. The system should have suitable means of stirring the resin and the amino acids and reactor needs to be maintained under inert gas.
14. System should have temperature range of ambient at least 90 deg C or more.
15. The system should have suitable means like fibre optic probe or other techniques to measure accurate & precise temperature of the reaction.
16. The instrument should have the option to be paused at any time and continue from where it was paused.
17. Consumables like filters, tubes, valves for 5 year trouble free operation, must be provided,
18. Spare reactors should be provided for 1-5 mmol (at least 5 nos.) and <1 mmol (at least 5 nos.) scale reactions.
19. System should be provided with suitable branded UPS with 30 min. back-up.
20. System should be provided with a total of 5 years Warranty
21. Installation & Training: Installation & Training at our site should be provided by an expert engineer