Prelude X

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Tool Type: Automated Peptide Synthesizer
Manufacturer: Gyros Protein Technologies
Location: Elings Hall 2417

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About

The Prelude X system (Gyros Protein Technologies) enables users to synthesize novel peptides and related structures (peptoids and other solid-phase synthesized sequence specific materials) not available for commercial purchase, providing a lower cost solution for producing peptides with non-natural amino-acids, and supporting the synthesis of branching or cyclic peptides.

This flexible peptide synthesizer supports various peptide and peptidomimetic chemistries and facilitates multi-user accessibility via 6 fully independent, simultaneous reaction stations with real-time UV monitoring, heating, and vortex mixing on a scale of 10 mg to 2 g of resin per reaction vessel in 10- or 40-mL capacities.

Agitation of the reaction is performed by nitrogen bubbling, oscillation mixing, or a combination of these. The system supports Fmoc, t-Boc, organic, peptoid, combinatorial, branched, and PNA chemistries.

The system is capable of heating all RVs to 90ºC using induction heating while oscillation mixing the reactor. Elevated temperature can raise reaction rates, accelerating difficult deprotections and couplings that would otherwise cause deletion sequences. Heating can improve the purity of hydrophobic and aggregated sequences.

Safety Concerns

• Many peptide coupling agents (e.g., DIC, EDC, HBTU, HCTU and HATU) are known skin and respiratory sensitizers. Allergy symptoms, including dermatitis, hives, rhinitis (e.g., nasal congestion, runny nose, sneezing, and itching), asthma, and potentially deadly anaphylaxis, can develop as a result of handling coupling agents.

• DMF and NMP, commonly used solvents, are toxic and can be readily absorbed through the skin, affecting the liver. Always wear proper PPE, including gloves, a lab coat, and, when pouring large volumes, a face shield and booties.

• To minimize exposure, perform all operations in a fume hood or ventilated cabinet, including opening reagent bottles, weighing, and transferring reagents. Dispose of contaminated materials in the labeled waste containers, and rinse glassware and tools in the fume hood into designated waste containers.

Reference Documentation

Coming soon.

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