

Biotage® Initiator+ Alstra™ 2014

Improved Functionality



Biotage® Initiator+ Alstra™ is a fully automated, single channel, programmable microwave peptide synthesizer for Fmoc-solid phase peptide synthesis. This instrument now comes with the Alstra 1.1 software upgrade that introduces new functionality such as Branches, Preactivation and “Edit on the fly”, and options for UV monitoring and MAOS (organic synthesis) capability.

Branches

This exciting new feature is a tool that allows skilled peptide chemists to assign custom methods and to enable scheduling and visualization (Figure 1) of their operations in order to make complex peptide modifications such as:

- » Side chain modification and elaboration
e.g. attachment of a dye label
- » MAPs
- » Intramolecular cyclization
- » Head-to-tail cyclization
- » Side-chain to side-chain cyclization
- » Disulfide bridge formation

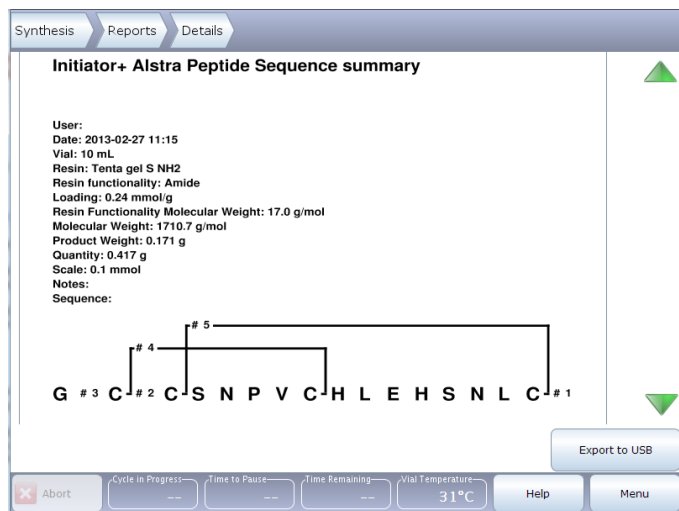


Figure 1. α-Conotoxin MMII.

Microwave Assisted Organic Synthesis (MAOS) Option

Use the Alstra MAOS kit (part number 356445) to enable your system to be configured for both microwave peptide and microwave organic synthesis modes of operation with dual mode of mixing: oscillating mixing for peptide synthesis and magnetic stirring for organic synthesis (Figure 2).

- » 300 °C controlled reaction temperature
- » 30 bar controlled reaction pressure
- » Organic Chemistry mode using the step-by-step wizard
- » In situ temperature measurement
- » Utilizes all Biotage vials, from 0.2 to 20 mL



Figure 2. Run in progress.

UV Monitoring Option

Use the Alstra UV monitoring kit (part number 356444) to follow the removal of the Fmoc group during the Fmoc deprotection reaction and modify the deprotection and coupling parameters (Figure 3). This enables the user to:

- » Automatically control the deprotection time and also the number of iterations
- » Automatically change the deprotection method (time only)
- » Automatically control the subsequent coupling protocols including reaction times and number of couplings
- » Automatically set a pause step (and washed) if Fmoc deprotection has not reached the assigned threshold

Preactivation/Premixing

Now you can choose to activate the amino acid *in situ* or preactivate any amino acid in a cycle as required (Figure 4).

- » Preactivate any position in the sequence
- » Set the time required for preactivation reaction to occur
- » Use a designated position on the amino acid rack for premixing to occur
- » Allows dispensing into the amino acid rack which can be used for other premixing type operations



Figure 3. UV Monitoring of the Fmoc Deprotection Reaction.

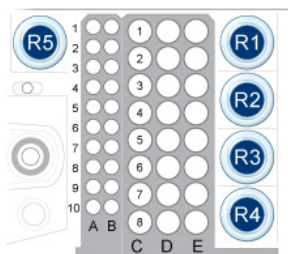


Figure 4. Preactivation rack.

“Edit on the fly”

This is a very powerful feature which gives the user even more control during a peptide synthesis run (Figure 5) and allows the user to:

- » Make changes to a synthesis that is already in progress (after pausing operation)
- » Pause and check a coupling and make changes based on the result without having to reprogram the synthesis, with the additional volume of reagents required adjusted in the calculation table
- » Make changes to a manual, semi-automated or automated operation
- » Avoid unnecessary double couplings and easy to implement if required

E-mail Notification

Let Initiator+ Alstra keep you informed when you are away from the instrument (Figure 6). Enables the user to:

- » Receive notification at the end of a synthesis run
- » Receive notification when a pause step has been set after an operation
- » Receive notification when a programmed manual step requires to be executed
- » Receive notification when an error occurs

Step	Chemical Name	Volume (mL)	Concentration (M)	Total Volume (mL)	Concentration (M)	Time (min)	Temperature (°C)
C1	Protein-DH	0.0	0.001	0.001	0.0	20	25
C2	Protein-DH	0.0	0.001	0.001	0.0	20	25
D1	Protein-DH	0.0	0.001	0.001	0.0	20	25
D2	Protein-DH	0.0	0.001	0.001	0.0	20	25
R1	DCU-DH in DMF	0.0	0.001	0.001	0.0	20	25
R2	DCU-DH in DMF	0.0	0.001	0.001	0.0	20	25
R3	DCU-DH in DMF	0.0	0.001	0.001	0.0	20	25

Figure 5. Calculation table adjusted after changes.

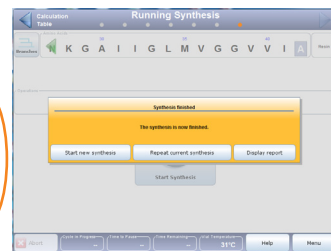


Figure 6. Notification when synthesis completed.

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Part Number: PPS320.v.1

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