Peptide-Builder Report

About this Synthesis Report

This report provides a detailed record of the peptide synthesis, including reaction conditions, real-time UV and resin-bed volume monitoring, reagent consumption and system diagnostics.

These data provide valuable insight into synthesis performance, helping researchers understand the process, improve reproducibility and optimize synthesis conditions, while also supporting the investigation of unexpected results.

This section records the instrument serial number, software version and firmware versions, providing traceability and useful reference information for technical support and troubleshooting.

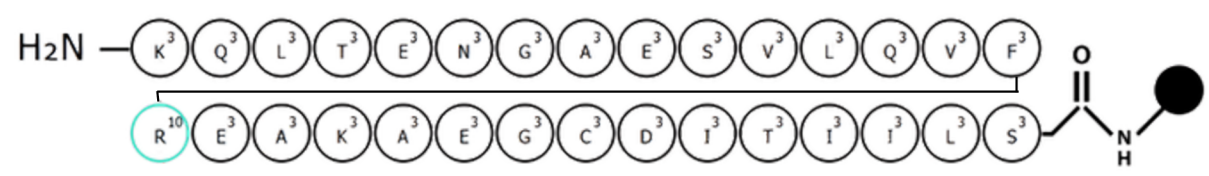
This section records the peptide sequence, resin type, synthesis scale, resin loading and selected processing options. These details provide an essential record of the experimental setup and support reproducibility between synthesis runs.

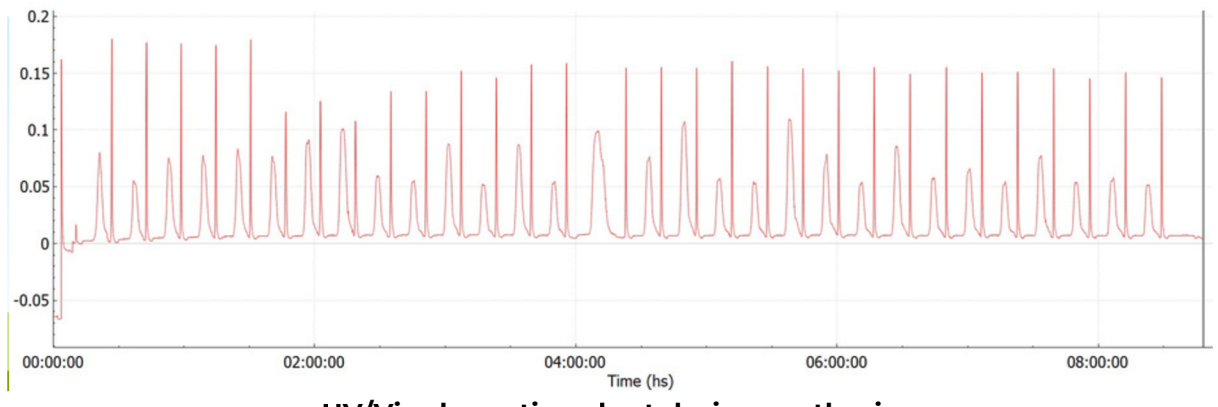
System information

Serial number	PB1005
Software version	v1.12.3
Firmware version	MV0.5.33 VV0.5.21 NV0.51

Synthesis information

Cartridge barcode **Cartridge position** **Start time** **End time**	001272 3 01/11/26 - 12:26 01/11/26 - 20:45	**Sequence name** **User** **Synthesis length**	Barstar No user 30-mer
Resin type **Resin loading** **Resin mass**	TentaGel S 0.24 mmol/g 0.7 g	**Scale** **Final deprotection** **Peptide terminal**	0.168 mmol Protocol 1 Amide
☐ Initial DMF wash		☐ Final wash using Pump 4	
Synthesis completed successfully			

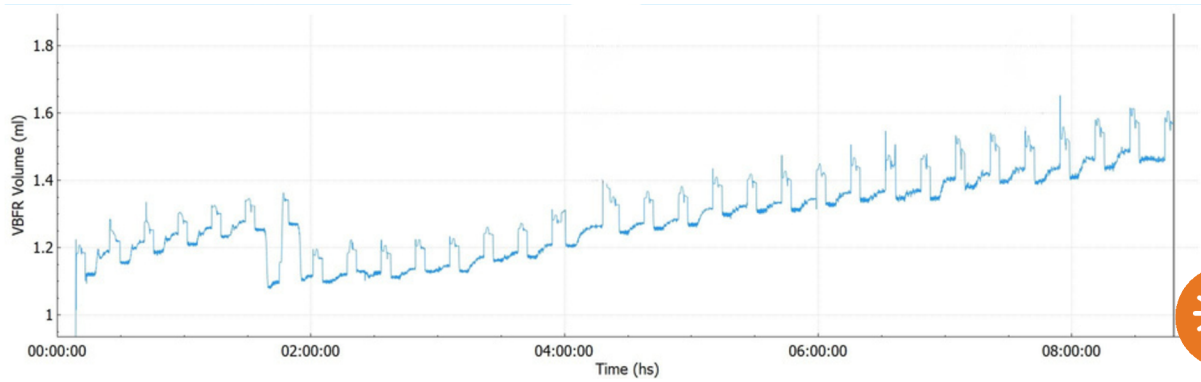




UV/Vis absorption chart during synthesis

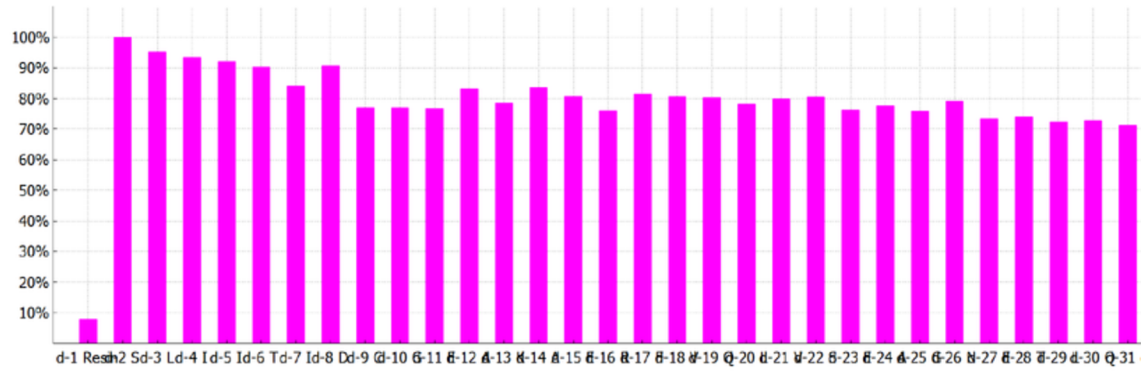
The in-line UV detector continuously monitors absorbance during synthesis, detecting both activated amino acids during coupling and Fmoc removal during deprotection. These signals provide a detailed record of successive synthesis cycles, allowing researchers to monitor reaction progress and investigate variations in coupling and deprotection behaviour.

The Variable Bed Flow Reactor (VBFR™) continuously monitors changes in resin-bed volume throughout synthesis. The volume profile provides insight into resin behaviour as the peptide chain grows, helping identify unusual changes that may indicate aggregation or other changes in resin swelling.

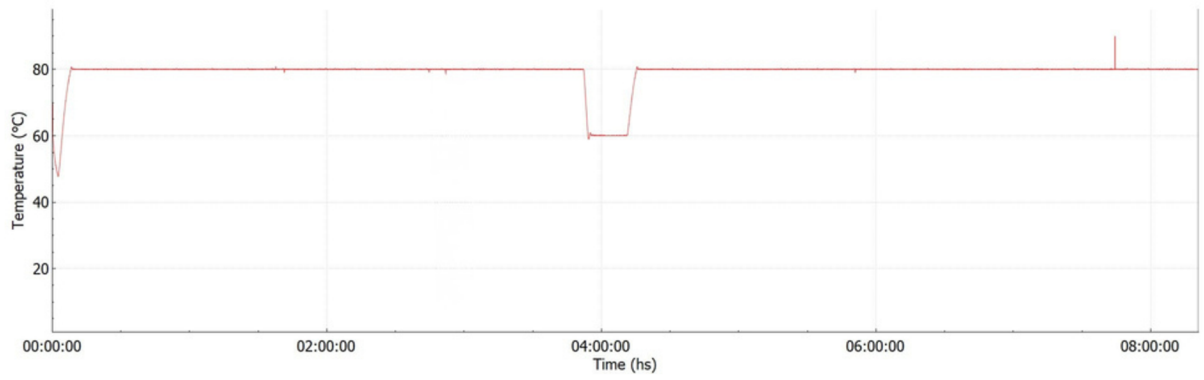


VBFR volume growth during synthesis

The integrated UV absorbance (AUC) from each Fmoc deprotection is compared across successive synthesis cycles. Changes in AUC can help identify unexpected variations in Fmoc removal and potential problems with preceding coupling steps, providing valuable information for synthesis optimization.



Fmoc Areas



Reactor temperature chart

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This table provides a detailed record of the deprotection conditions applied at each synthesis step, including piperidine volume, reaction temperature and UV analysis results. These data support reproducibility and help investigate unexpected variations in deprotection performance.

Deprotection number	Deprotection protocol			UV Analysis	
	Protocol name	Piperidine volume (ml)	Temp(°C)	A.U.C. (a.u.)	FWHM (min)
d-1 Resin	Protocol 1	5.0	80	0.021	0.367
d-2 S	Protocol 1	5.0	80	0.204	0.350
d-3 L	Protocol 1	5.0	80	0.209	0.350
d-4 I	Protocol 1	5.0	80	0.214	0.350
d-5 I	Protocol 1	5.0	80	0.200	0.350
d-6 T	Protocol 1	5.0	80	0.196	0.350
d-7 I	Protocol 1	5.0	80	0.201	0.350
d-8 D	Protocol 1	5.0	80	0.189	0.350
d-9 C	Protocol 1	5.0	80	0.179	0.350
d-10 G	Protocol 1	5.0	80	0.181	0.350
d-11 E	Protocol 1	5.0	80	0.196	0.350
d-12 A	Protocol 1	5.0	80	0.192	0.350
d-13 K	Protocol 1	5.0	80	0.187	0.350
d-14 A	Protocol 1	5.0	80	0.194	0.350
d-15 E	Protocol 1	5.0	80	0.187	0.350
d-16 R	Protocol 1	5.0	80	0.154	0.350
d-17 F	Protocol 1	5.0	80	0.189	0.350
d-18 V	Protocol 1	5.0	80	0.178	0.350
d-19 Q	Protocol 1	5.0	80	0.197	0.350
d-20 L	Protocol 1	5.0	80	0.173	0.350
d-21 V	Protocol 1	5.0	80	0.180	0.350
d-22 S	Protocol 1	5.0	80	0.184	0.350
d-23 E	Protocol 1	5.0	80	0.184	0.350
d-24 A	Protocol 1	5.0	80	0.191	0.350
d-25 G	Protocol 1	5.0	80	0.190	0.350
d-26 N	Protocol 1	5.0	80	0.186	0.350
d-27 E	Protocol 1	5.0	80	0.179	0.350
d-28 T	Protocol 1	5.0	80	0.178	0.350
d-29 L	Protocol 1	5.0	80	0.175	0.350
d-30 Q	Protocol 1	5.0	80	0.177	0.350
d-31 K	Protocol 1	5.0	80	0.177	0.350

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Coupling number	Coupling protocol					Reagent usage	
	Protocol name	AA eq	DIC eq	Contact time (min)	Temp (°C)	AA (ml)	DIC (ml)
c-1 S	Standard	3.0	4.5	1.2	80	1.7	0.8
c-2 L	Standard	3.0	4.5	1.2	80	1.7	0.8
c-3 I	Standard	3.0	4.5	1.2	80	1.7	0.8
c-4 I	Standard	3.0	4.5	1.2	80	1.7	0.8
c-5 T	Standard	3.0	4.5	1.2	80	1.7	0.8
c-6 I	Standard	3.0	4.5	1.2	80	1.7	0.8
c-7 D	Standard	3.0	4.5	1.2	80	1.7	0.8
c-8 C	Standard	3.0	4.5	1.2	80	1.7	0.8
c-9 G	Standard	3.0	4.5	1.2	80	1.7	0.8
c-10 E	Standard	3.0	4.5	1.2	80	1.7	0.8
c-11 A	Standard	3.0	4.5	1.2	80	1.7	0.8
c-12 K	Standard	3.0	4.5	1.2	80	1.7	0.8
c-13 A	Standard	3.0	4.5	1.2	80	1.7	0.8
c-14 E	Standard	3.0	4.5	1.2	80	1.7	0.8
c-15 R	Difficult	10.0	40.0	1.2	60	5.6	7.3
c-16 F	Standard	3.0	4.5	1.2	80	1.7	0.8
c-17 V	Standard	3.0	4.5	1.2	80	1.7	0.8
c-18 Q	Standard	3.0	4.5	1.2	80	1.7	0.8
c-19 L	Standard	3.0	4.5	1.2	80	1.7	0.8
c-20 V	Standard	3.0	4.5	1.2	80	1.7	0.8
c-21 S	Standard	3.0	4.5	1.2	80	1.7	0.8
c-22 E	Standard	3.0	4.5	1.2	80	1.7	0.8
c-23 A	Standard	3.0	4.5	1.2	80	1.7	0.8
c-24 G	Standard	3.0	4.5	1.2	80	1.7	0.8
c-25 N	Standard	3.0	4.5	1.2	80	1.7	0.8
c-26 E	Standard	3.0	4.5	1.2	80	1.7	0.8
c-27 T	Standard	3.0	4.5	1.2	80	1.7	0.8
c-28 L	Standard	3.0	4.5	1.2	80	1.7	0.8
c-29 Q	Standard	3.0	4.5	1.2	80	1.7	0.8
c-30 K	Standard	3.0	4.5	1.2	80	1.7	0.8

This table records the coupling conditions used for each amino acid, including reagent equivalents, contact time and temperature. It also identifies where alternative coupling protocols have been applied, providing valuable information when investigating difficult coupling steps or optimizing synthesis conditions.

This section summarizes the quantities of solvents and reagents consumed during synthesis, together with the total waste volume generated. This data help researchers assess reagent consumption, estimate synthesis costs and plan solvent and waste requirements.

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Process chemical consumption

Chemical	Usage
DMF	959 ml
DIC Solution	31 ml
Piperidine Solution	154 ml
Pump 4 solvent	0 ml
Pump 4 reagent	0 ml
Total waste volume	1199 ml

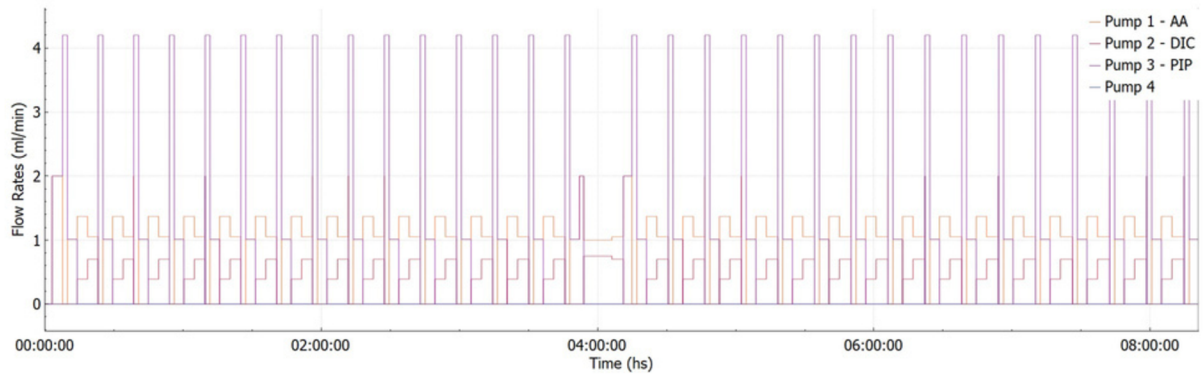
This section records the cumulative volume delivered by each pump since its last service, together with the remaining service life. This information supports preventative maintenance planning and helps maintain reliable system operation.

Pump Status

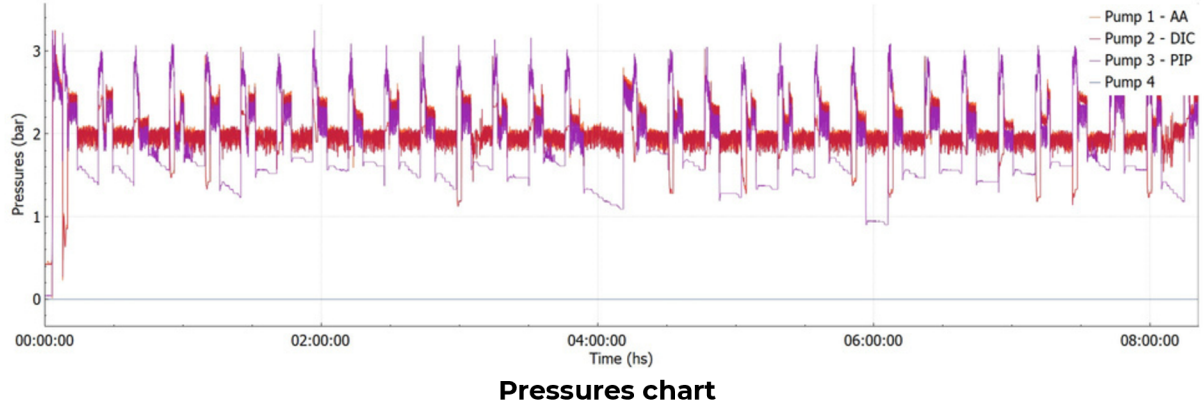
Pump	Volume delivered since last service (l)	Volume remaining before next service (%)
Pump 1 - AA	4.2 litres	97.9 %
Pump 2 - DIC	1.3 litres	99.3 %
Pump 3 - PIP	3.4 litres	98.3 %
Pump 4	0.1 litres	100.0 %

The diagnostic charts record flow rates and system pressures throughout synthesis, complementing the reactor temperature data presented earlier in the report. These measurements help identify unexpected changes in operating conditions and provide valuable information when investigating synthesis or equipment performance.

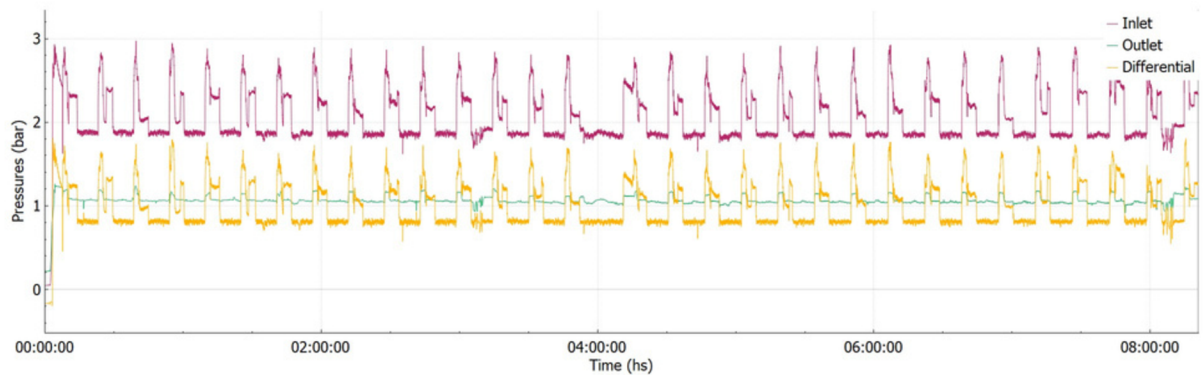
Diagnostic data



Flow rates chart



Pressures chart



VBFR pressures chart

Contact information

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