

**For Any Technical Questions, Please Contact at [info@nodesus.com](mailto:info@nodesus.com)**

Product Name: VERSA 1100 Next Generation Sequencing Work Station

Part Number:

Product Description:

### **VERSA 1100 Next Generation Sequencing Work Station**

Next generation sequencing (NGS) has revolutionized the ability to perform genomic analyses by providing the power to sequence an entire genome economically in a single day.

Automation to support NGS technologies needs to meet the throughput required by NGS workflows and offer robustness and Flexibility to fully realize the power of NGS. The VERSA Gene 1100 workstation was developed as a complete walk- away solution for all genomic workflows.

Aurora's VERSA1100 Next Generation Sequencing Sample Preparation workstation features an 8-channel pipetting head to enable the high throughput demanded by NGS technologies but offers the flexibility to handle other tasks such as library normalization and sample pooling via the single channel function of the head. Aurora has worked to streamline the library preparation process by offering unique features such as the magnetic bead vortex, the magnet/shaker elevator, and the 96-tip aspirator. These modules were designed with the goal of reducing library preparation time while improving sample recovery and consistency.

VERSA's innovative modules are designed to tackle the challenging steps of Automated NGS Library Preparation (also known as NGS automation). The Magnetic Bead Vortex ensures homogeneous bead suspension and distribution. The combination of ReagentDrop bulk reagent dispensing module and 96-Tip Aspirator offers fast and efficient bead washing steps while saving tip costs. The VERSA automated Next Generation Sequencing (NGS) library preparation and sample preparation workstations are compatible with various commercial available kits, reagents, and labware. VERSA automated NGS library and sample preparation workstations are highly scalable for different throughputs and budget.

#### **Application:**

√ Genomics:

- NGS library preparation
- DNA/RNA Extraction and Purification
- DNA/RNA fragment size selection
- Enzymatic reaction setup
- Library normalization and pooling
- Single and multiplex real-time PCR setup
- Sequencing reaction setup
- Oligo-based gene synthesis plate setup

√ General liquid handling:

- Cherry picking / reagent and sample pooling
- Plate transfer, replication and reformatting
- Serial and parallel dilution
- Master mix preparation and distribution

User cases

Here, we present the validation and implementation of an open liquid handling platform, the VERSA™ 1100 GENE (Aurora Biomed, Vancouver, BC) for medium to high-throughput library preparation for routine utilization with the Ion AmpliSeq™ Cancer Hotspot Panel v2 (CHP2) assay on FFPE clinical specimens, including FFPE Quality Control (QC) materials (1).



Virginia Commonwealth University  
弗吉尼亚联邦大学



Validation of an Automated Method for Library Preparation for a Next-Generation Sequencing-Based Assay for Oncology

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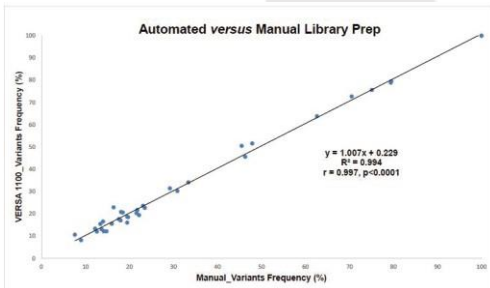
checker-board cross-contamination experiment

Well	Sample ID	Library Conc. (ng/mL)	Well	Sample ID	Library Conc. (ng/mL)
1A	Pos Ctl	196	2A	NTC	0
1B	NTC	0	2B	Pos Ctl	782
1C	Pos Ctl	318	2C	NTC	0
1D	NTC	0	2D	Pos Ctl	598
1E	Pos Ctl	280	2E	NTC	0
1F	NTC	0	2F	Pos Ctl	572
1G	Pos Ctl	288	2G	NTC	0
1H	NTC	0	2H	Pos Ctl	582

MiaPaCa-2											
Gene ID	CDS_mut_syntax	AA_mut_syntax	Chrom	hg19 Position	Ref	Variant	Frequency	Quality	Coverage	Allele Cov	Strand Bias
APC	Not a HotSpot	Not a HotSpot	chr5	112175770	G	A	74.7	19084.4	1997	1491	0.50
FGFR3	Not a HotSpot	Not a HotSpot	chr4	1807894	G	A	100.0	11210.5	899	899	0.50
FLT3	Not a HotSpot	Not a HotSpot	chr13	28610183	A	G	84.0	14997.7	2200	1281	0.52
HRAS	c.81T>C	p.His27His	chr11	534242	A	G	83.1	8543.8	993	627	0.51
KDR	Not a HotSpot	Not a HotSpot	chr4	5580239	C	T	100.0	7165.1	455	455	0.50
KRAS	c.34G>T	p.Gly12Cys	chr12	25368285	C	A	100.0	31607.9	1986	1986	0.50
MET	Not a HotSpot	Not a HotSpot	chr7	116339672	C	T	68.3	16596.2	1999	1366	0.51
NOTCH1	Not a HotSpot	Not a HotSpot	chr9	139340822	G	C	100.0	21173.3	1325	1325	0.50
PDGFRA	Not a HotSpot	Not a HotSpot	chr4	55141055	A	G	100.0	14788.1	924	924	0.50
RET	Not a HotSpot	Not a HotSpot	chr10	43613943	G	T	87.6	15035.9	1846	1247	0.50
RET	Not a HotSpot	Not a HotSpot	chr10	43615633	C	G	85.9	12191.1	1564	1030	0.52
STK11	Not a HotSpot	Not a HotSpot	chr19	1220321	T	C	87.2	8842.7	1094	735	0.51
TP53	c.742C>T	p.Arg248Trp	chr17	7577539	G	A	100.0	31566.4	1983	1983	0.50

Negative Control											
Gene ID	CDS_mut_syntax	AA_mut_syntax	Chrom	hg19 Position	Ref	Variant	Frequency	Quality	Coverage	Allele Cov	Strand Bias
APC	Not a HotSpot	Not a HotSpot	chr5	112175770	G	A	48.8	9248.7	1899	923	0.51
ATM	c.2872T>C	p.Phe858Leu	chr11	108138003	T	C	51.4	10550.2	1996	1025	0.50
FGFR3	Not a HotSpot	Not a HotSpot	chr4	1807894	G	A	100.0	16809.8	1048	1048	0.50
FLT3	Not a HotSpot	Not a HotSpot	chr13	28602252	T	C	47.6	9375.2	1996	960	0.52
FLT3	Not a HotSpot	Not a HotSpot	chr13	28610183	A	G	100.0	32079.3	2000	2000	0.50
HRAS	c.81T>C	p.His27His	chr11	534242	A	G	47.9	8761.1	1220	584	0.50
KDR	Not a HotSpot	Not a HotSpot	chr4	55872974	T	A	50.3	7480.7	1455	737	0.51
KDR	Not a HotSpot	Not a HotSpot	chr4	5580239	C	T	100.0	9211.1	880	580	0.50
PDGFRA	Not a HotSpot	Not a HotSpot	chr4	55141055	A	G	100.0	19424.4	1228	1228	0.50
RET	Not a HotSpot	Not a HotSpot	chr10	43613943	G	T	100.0	30332.6	1892	1892	0.50
STK11	Not a HotSpot	Not a HotSpot	chr19	1220321	T	C	51.0	4307.5	828	422	0.53
STK11	c.1062C>G	p.Phe354Leu	chr19	1223125	C	G	49.5	8451.3	1704	843	0.51
TP53	Not a HotSpot	Not a HotSpot	chr17	7576210	T	C	51.3	10561.7	1999	1026	0.51
TP53	Not a HotSpot	Not a HotSpot	chr17	7579472	G	C	92.2	18216.1	1337	1233	0.52

NGS Data from Ion AmpliSeq Cancer Hotspot Panel v2



Dr. Catherine Dumur from Virginia Commonwealth University validated VERSA 1100 GENE performance by using FFPE clinical samples and Ion AmpliSeq™ kit. From the checkerboard experiments, it was concluded that this automated liquid handling system shows no evidence of cross-contamination, by either no library on the no template control (NTC) wells, or no variants called on negative samples after sequencing using the CHP2 assay. The results show that the performance of the VERSA™ 1100 Gene automated liquid handling workstation is very robust and helps eliminate human-introduced errors, when compared to the manual library preparation method for the CHP2 assay.

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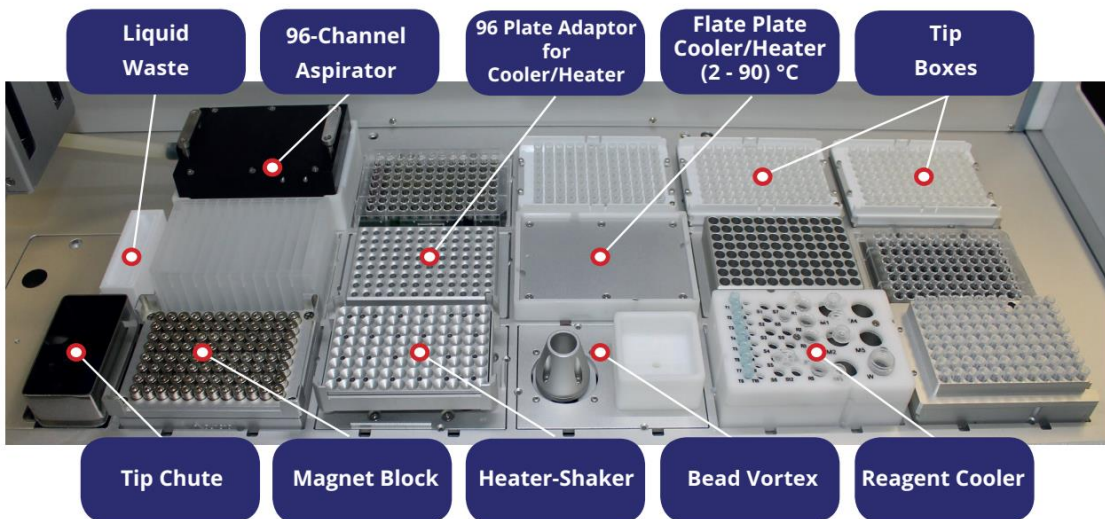
Features:

- ✓ The complete NGS sample preparation process can automatically complete the construction of enzymatic reaction systems such as nucleic acid extraction, nucleic acid purification, PCR, and liquid handling processes such as concentration normalization and merger sequencing. It also covers DNA-Seq, RNA-Seq, Exome-Seq, Chip-Seq, microRNA-Seq and other applications.
- ✓ Open system - compatible with diverse kit chemistry and labware such as illumina, Life Technology, Pacific Biosystems and a variety of third-party Brand Library Building reagents, including but not limited to Roche KAPA, Agilent, etc.
- ✓ 96-tip aspirator reduces protocol time and tip usage
- ✓ Magnetic bead vortex ensures homogenous bead suspension
- ✓ ReagentDrop module provides accurate dispensing of bulk reagents allowing conservation of reagents and tips

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- ✓ Cooling plate - suitable for various consumables on the market, such as centrifugal tubes, PCR plates, etc., preserves precious dNTPs, buffers and enzymes at 4 degrees
- ✓ Gripper - moves sample plates between magnetic bead separator and shaker for on-deck mixing and washing
- ✓ Magnetic Bead Separator- pulls down magnetic beads for sample purification and facilitates homogenous suspension of the sample
- ✓ HEPA Filtered UV/Fluorescent light enclosure with automatic door keeps samples contaminant free
- ✓ Software interface is friendly, concise, easy to learn and powerful
- ✓ Personalized customization can be accepted according to user's scheme

### Deck Layout



Sample VERSA 1100 Gene Deck Layout

### Product Specification:

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	Basic Configuration	Recommended Configuration
Syringe Pipettor (Disposable Tips)	8-channel	8 or 96-channel
Reagent Drop Channnels (Multiple Reagents)	5	8
Liquid-Level Sensing	Optional	Optional
Plate Shaker	1	1
96-tip Aspirator	1	1
Temperature Regulation Block	2	2
Reagent Cooling Block	1	1
Magnetic Block	Included	Included
Plate Gripper	Included	Included
HEPA / UV/ Fluorescent Light Enclosure	Optional	Included
Length	98.5 cm / 38.8 in	98.5 cm / 38.8 in
Depth	75.2 cm / 29.6 in	75.2 cm / 29.6 in
Height	89 cm / 35 in	108.2 cm / 46.2 in
Weight	162 kg / 357 lbs	225 kg / 496 lbs
Deck Capacity	15	15



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