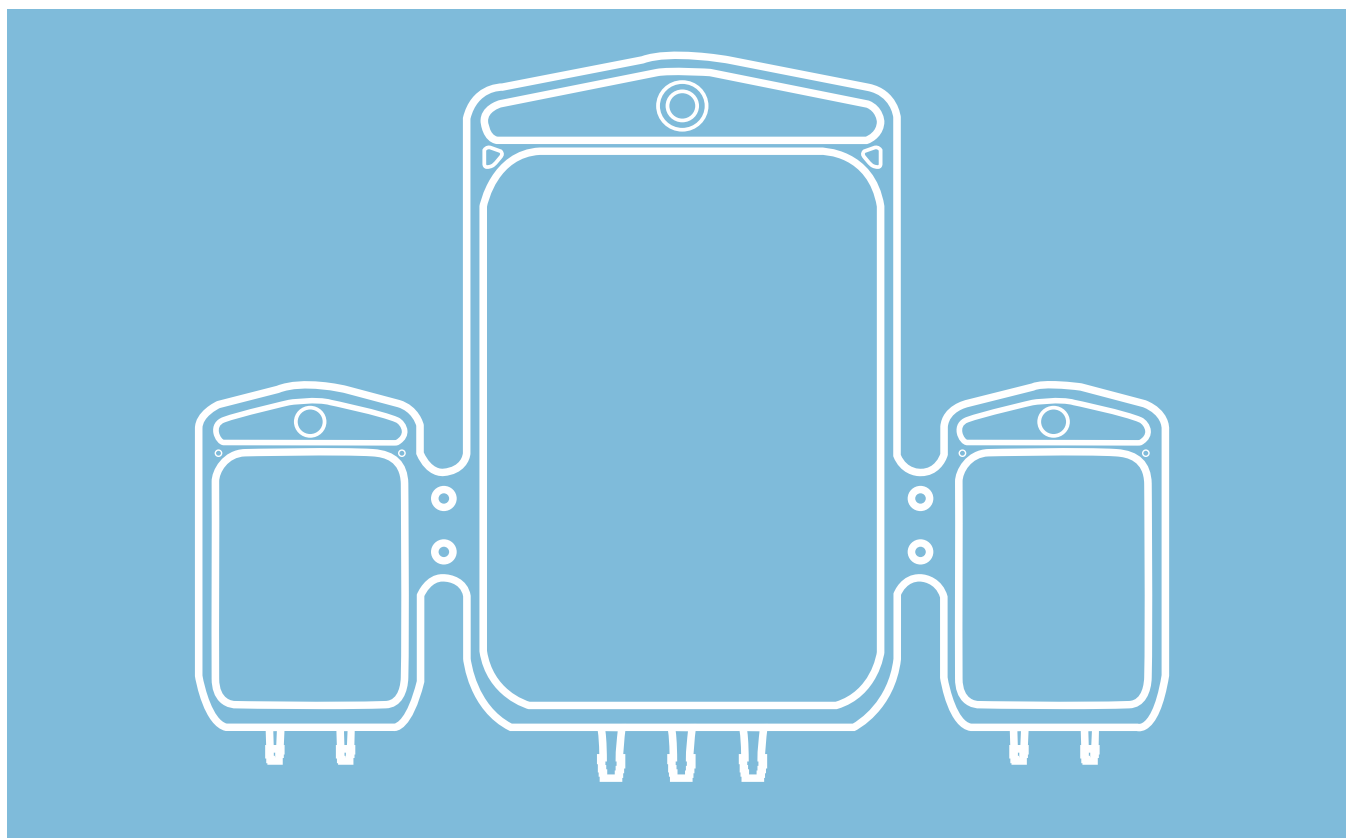


RNase-free Disposable Consumables

mRNA is a new-generation technology platform that is expected to change traditional ways of vaccines and monoclonal anti-body development and manufacturing. Due to its short R&D cycle, simple production process, strong immunogenicity, and high safety, mRNA has the potential to be widely applied in various fields such as vaccines for infectious diseases, tumor immunology, and recombinant protein. Even though mRNA vaccines are booming, the mRNA drugs are in low profile. To date, there is no particularly welcomed mRNA drug, mainly due to the difficulty of mRNA drug development - the higher the purity, the stronger the druggability.

However, due to ubiquitous RNase in the environment, mRNA is easily contaminated, which is why Moderna has invested heavily in building a nuclease-free laboratory (RNase-free Lab). The construction costs are as high as tens of millions of dollars; and with subsequent operations and maintenance, the cost requires an investment of hundreds of millions of dollars. This is possibly why the development of many mRNA drugs is stalled.

Ribonuclease (RNase) is a class of nucleic acid hydrolases that are widely found in animals and plants. Due to its “ubiquitous” nature, it is necessary to take multiple and complex clean-ups to eliminate the effects of RNase in the mRNA production process, which greatly reduces production efficiency. Meanwhile, the process validation and verification of RNase removal are also time-consuming and labor-intensive. Therefore, RNase-free disposable consumables are highly welcomed by mRNA manufacturers using single-use bioprocess technology for production. In addition, the RNase level within those consumables shall be inspected before release and can be verified post-use without damage.



As a supplier of bioprocess disposable equipment and consumables for bioprocessing, GVS has launched an innovative design and comprehensive solution of master bag + double satellite bags for the first time with 100% RNase/ DNase inspection and release of products as well as customer verification.



Features

- Innovative design of master bag + double satellite bags (enabling 100% individual inspection of RNase-/DNase-free bags)
- Identical material/production environment of the master bag and satellite bag
- Satellite bag-1 (QC release): for RNase inspection prior to product release
- Satellite bag-2 (customer verification): for customer verification test before/after use
- Different sizes/models of bioprocess disposable products (Storage bags + Bioreactor bags + Cell bags, etc.)
- High-standard production environment control and monthly RNase monitoring

Nuclease-free Single-Use Consumables		
Single-use storage bottle	Batch inspection	DNase-free/ RNase-free/ Nuclease-free (DNase-free & RNase-free)
Single-use 2D storage bag	Individual/hybrid/batch inspection	
Single-use 3D storage bag	Individual/hybrid/batch inspection	
Single-use mixing bag	Individual/hybrid/batch inspection	
Single-use cell bag/mixing bag	Individual/hybrid/batch inspection	
Single-use bioreactor bag	Individual/hybrid/batch inspection	



Ordering information

DNase-free product code	RNase-free product code	Nuclease-free product code	Volume	Product name	Matching type	Package
BIOGBTA5ML001D	BIOGBTA5ML001R	BIOGBTA5ML001N	5 ml	5 ml single-use storage bottle	Regular cap	200
BIOGBTA20ML001D	BIOGBTA20ML001R	BIOGBTA20ML001N	20 ml	20 ml single-use storage bottle		200
BIOGBTA50ML001D	BTA50ML001R	BIOGBTA50ML001N	50 ml	50 ml single-use storage bottle		120
BIOGBTA125ML001D	BTA125ML001R	BIOGBTA125ML001N	125 ml	125 ml single-use storage bottle		60
BIOGBTA250ML001D	BTA250ML001R	BIOGBTA250ML001N	250 ml	250 ml single-use storage bottle		40
BIOGBTA500ML001D	BTA500ML001R	BIOGBTA500ML001N	500 ml	500 ml single-use storage bottle		20
BIOGBTA1L001D	BIOGBTA1L001R	BIOGBTA1L001N	1L	1 L single-use storage bottle		25
BIOGBTA2L001D	BIOGBTA2L001R	BIOGBTA2L001N	2L	2 L single-use storage bottle		16
BIOGBTA5ML002D	BIOGBTA5ML002R	BIOGBTA5ML002N	5 ml	5 ml single-use storage bottle	2-port cap	200
BIOGBTA20ML002D	BIOGBTA20ML002R	BIOGBTA20ML002N	20 ml	20 ml single-use storage bottle		200
BIOGBTA50ML002D	BIOGBTA50ML002R	BIOGBTA50ML002N	50 ml	50 ml single-use storage bottle		120
BIOGBTA125ML002D	BIOGBTA125ML002R	BIOGBTA125ML002N	125 ml	125 ml single-use storage bottle		60
BIOGBTA250ML002D	BIOGBTA250ML002R	BIOGBTA250ML002N	250 ml	250 ml single-use storage bottle		40
BIOGBTA500ML002D	BIOGBTA500ML002R	BIOGBTA500ML002N	500 ml	500 ml single-use storage bottle		20
BIOGBTA1L002D	BIOGBTA1L002R	BIOGBTA1L002N	1 L	1 L single-use storage bottle		25
BIOGBTA2L002D	BIOGBTA2L002R	BIOGBTA2L002N	2 L	2 L single-use storage bottle		16
BIOGBTA5ML003D	BIOGBTA5ML003R	BIOGBTA5ML003N	5 ml	5 ml single-use storage bottle	3-port cap	200
BIOGBTA20ML003D	BIOGBTA20ML003R	BIOGBTA20ML003N	20 ml	20 ml single-use storage bottle		200
BIOGBTA50ML003D	BIOGBTA50ML003R	BIOGBTA50ML003N	50 ml	50 ml single-use storage bottle		120
BIOGBTA125ML003D	BIOGBTA125ML003R	BIOGBTA125ML003N	125 ml	125 ml single-use storage bottle		60
BIOGBTA250ML003D	BIOGBTA250ML003R	BIOGBTA250ML003N	250 ml	250 ml single-use storage bottle		40
BIOGBTA500ML003D	BIOGBTA500ML003R	BIOGBTA500ML003N	500 ml	500 ml single-use storage bottle		20
BIOGBTA1L003D	BIOGBTA1L003R	BIOGBTA1L003N	1 L	1 L single-use storage bottle		25
BIOGBTA2L003D	BIOGBTA2L003R	BIOGBTA2L003N	2 L	2 L single-use storage bottle		16

DNase-free product code	RNase-free product code	Nuclease-free product code	Volume	Line
BIOGBD0001S003	BIOGBR0001S003	BIOGBN0001S003	1 L	50 ml satellite bag 20 cm ID1/8" * OD1/4" platinum cured silicone tubing + female Luer
				30 cm ID1/4" * OD7/16" Platinum 50 platinum cured silicone tubing + AseptiQuik® G connector
BIOGBD0002S003	BIOGBR0002S003	BIOGBN0002S003	2 L	30 cm ID1/4" * OD7/16" Platinum 50 platinum cured silicone tubing + AseptiQuik® G connector 20 cm ID1/4" * OD7/16" C-Flex thermoplastic tubing + needleless sampling
BIOGBD0005S003	BIOGBR0005S003	BIOGBN0005S003	5 L	
BIOGBD0010S003	BIOGBR0010S003	BIOGBN0010S003	10 L	50 ml satellite bag 20 cm ID1/8" * OD1/4" platinum cured silicone tubing + female Luer
				30 cm ID3/8" * OD5/8" Platinum 50 platinum cured silicone tubing + AseptiQuik® G connector
BIOGBD0020S003	BIOGBR0020S003	BIOGBN0020S003	20 L	30 cm ID3/8" * OD5/8" Platinum 50 platinum cured silicone tubing + AseptiQuik® G connector 20 cm ID1/4" * OD7/16" C-Flex thermoplastic tubing + needleless sampling
BIOGBD0050S003	BIOGBR0050S003	BIOGBN0050S003	50 L	
BIOGBD0001S004	BIOGBR0001S004	BIOGBN0001S004	1 L	50 ml satellite bag 10 cm ID1/8" * OD1/4" platinum cured silicone tubing + 10 cm ID1/8" * OD1/4" C-Flex thermoplastic tubing + female Luer
				30 cm ID1/4" * OD7/16" Platinum 50 platinum cured silicone tubing + female MPC
BIOGBD0002S004	BIOGBR0002S004	BIOGBN0002S004	2 L	30 cm ID1/4" * OD7/16" C-Flex thermoplastic tubing + male MPC 20 cm ID1/4" * OD7/16" C-Flex thermoplastic tubing + plug
BIOGBD0005S004	BIOGBR0005S004	BIOGBN0005S004	5 L	
BIOGBD0010S004	BIOGBR0010S004	BIOGBN0010S004	10 L	50 ml satellite bag 10 cm ID1/8" * OD1/4" platinum cured silicone tubing + 10 cm ID1/8" * OD1/4" C-Flex thermoplastic tubing + female Luer
				30 cm ID3/8" * OD5/8" Platinum 50 platinum cured silicone tubing + female MPC
BIOGBD0020S004	BIOGBR0020S004	BIOGBN0020S004	20 L	30 cm ID3/8" * OD5/8" C-Flex thermoplastic tubing + female MPC 20 cm ID1/4" * OD7/16" C-Flex thermoplastic tubing + plug
BIOGBD0050S004	BIOGBR0050S004	BIOGBN0050S004	50 L	

DNase-free product code	RNase-free product code	Nuclease-free product code	Volume	Line
BIOGGBD0001S005	BIOGGBR0001S005	BIOGGBN0001S005	1 L	50 ml satellite bag 10 cm ID1/8" * OD1/4" platinum cured silicone tubing + 10 cm ID1/8" * OD1/4" C-Flex thermoplastic tubing + female Luer 30 cm ID1/4" * OD7/16" Platinum 50 platinum cured silicone tubing + TC25 quick connector 30 cm ID1/4" * OD7/16" C-Flex thermoplastic tubing + TC25 quick connector 20 cm ID1/4" * OD7/16" C-Flex thermoplastic tubing + needleless sampling
BIOGGBD0002S005	BIOGGBR0002S005	BIOGGBN0002S005	2 L	
BIOGGBD0005S005	BIOGGBR0005S005	BIOGGBN0005S005	5 L	
BIOGGBD0010S005	BIOGGBR0010S005	BIOGGBN0010S005	10 L	50 ml satellite bag 10 cm ID1/8" * OD1/4" platinum cured silicone tubing + 10 cm ID1/8" * OD1/4" C-Flex thermoplastic tubing + female Luer 30 cm ID3/8" * OD5/8" Platinum 50 platinum cured silicone tubing + TC25 quick connector 30 cm ID3/8" * OD5/8" C-Flex thermoplastic tubing + TC25 quick connector 20 cm ID1/4" * OD7/16" C-Flex thermoplastic tubing + needleless sampling
BIOGGBD0020S005	BIOGGBR0020S005	BIOGGBN0020S005	20 L	
BIOGGBD0050S005	BIOGGBR0050S005	BIOGGBN0050S005	50 L	