MICROBAC®

FINAL REPORT

VIRUCIDAL EFFICACY SUSPENSION TEST – Influenza A Virus (H3N2)

Test Substance
CloSYS Ultra Sensitive Rinse (CloSYS Unflavored Rinse)

Lot Number
0007B 2-00106

Test Organism
Influenza A Virus (H3N2), A/Hong Kong/8/68, Source: Charles River Laboratories

Author
Semhar Fanuel

Study Completion Date
09/30/20

Performing Laboratory
Microbac Laboratories, Inc.
105 Carpenter Drive
Sterling, VA 20164

Laboratory Project Identification Number
540-106

Protocol Identification Number
540.3.04.28.20

Sponsor
Rowpar Pharmaceuticals, Inc.
16100 N. Greenway-Hayden Loop, Suite 400
Scottsdale, AZ 85260

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GOOD LABORATORY PRACTICE COMPLIANCE STATEMENT

This study meets the requirements for 21 CFR § 58 with the following exceptions:

- Information on the identity, strength, purity, stability, uniformity, and dose solution analysis of the test article resides with the sponsor of the study.

The following technical personnel participated in this study:

Semhar Fanuel, Alivia Rinaldi

Study Director:

Semhar Fanuel — Date: 09/30/2020

QUALITY ASSURANCE UNIT STATEMENT

The Quality Assurance Unit of Microbac has inspected Project Number 540-106 to be in compliance with current Good Laboratory Practice regulations, (21 CFR § 58).

The dates that inspections were made and the dates that findings were reported to management and to the study director are listed below.

Phase Inspected	Date of Inspection	Date Reported to Study Director	Date Reported to Management
Protocol	07/24/20	07/24/20	07/24/20
In Process	07/24/20	07/24/20	07/24/20
Draft Report	09/10/20	09/10/20	09/10/20
Final Report	09/30/20	09/30/20	09/30/20

Jeanne M. Anderegg, RQAP-GLP
Quality Assurance Manager

09-30-2020
Date

TEST SUMMARY

TITLE: VIRUCIDAL EFFICACY SUSPENSION TEST – Influenza A Virus (H3N2)

STUDY DESIGN: This study was performed according to the signed protocol and project sheet(s) issued by the Study Director.

TEST METHOD: ASTM E1052-20: Standard Test Method to Assess the Activity of Microbicides against Viruses in Suspension

TEST MATERIALS: CloSYS Ultra Sensitive Rinse (CloSYS Unflavored Rinse), Lot No. 0007B 2-00106, received at Microbac on 05/04/20 and assigned DS No. K521

SPONSOR: Rowpar Pharmaceuticals, Inc.
16100 N. Greenway-Hayden Loop, Suite 400
Scottsdale, AZ 85260

TEST CONDITIONS

Challenge virus:

Influenza A Virus (H3N2), A/Hong Kong/8/68, Source: Charles River Laboratories

Host:

MDCK cells, Source: ATCC CCL-34

Active ingredient(s):

Stabilized chlorine dioxide

Test condition storage condition:

Dark, at ambient room temperature

Test product appearance:

Liquid

Dilution medium:

Minimum Essential Medium (MEM) + 1.0 µg/mL Trypsin

Neutralizer(s):

MEM + 1% Newborn Calf Serum (NCS) + 0.5% $Na_2S_2O_3$

Contact time:

30 seconds, 60 seconds

Contact temperature(s):

20 ± 1°C (actual: 21°C)

TEST CONDITIONS (continued)

Dilutions tested:

Not applicable (received ready to use)

Diluent:

Not applicable

Media and reagents:

MEM + 1.0 µg/mL Trypsin
MEM + 1% NCS + 0.5% $Na_2S_2O_3$
MEM
Phosphate Buffered Saline (PBS)

STUDY DATES AND FACILITIES

The laboratory phase of this test was performed at Microbac Laboratories, Inc., 105 Carpenter Drive, Sterling, VA 20164, from 07/23/20 – 07/29/20. The study director signed the protocol on 07/23/20. The study completion date is the date the study director signed the final report. The individual test dates are as follows:

- Testing started at 2:30 pm on 07/23/20 and ended at 10:30 am on 07/29/20

All changes or revisions of the protocol were documented, signed by the study director, dated and maintained with the protocol.

RECORDS TO BE MAINTAINED

All testing data, protocol, protocol modifications, test substance records, the final report, and correspondence between Microbac and the sponsor will be stored in the archives at Microbac Laboratories, Inc., 105 Carpenter Drive, Sterling, VA 20164, or at a controlled facility off site.

TEST PROCEDURES

Indicator Cells:

MDCK cells were obtained from ATCC and maintained in cell culture at 36 ± 2°C with 5 ± 3% CO_2 prior to seeding. The indicator cell plates were prepared 12 – 30 hours prior to inoculation with test sample. The cells were seeded in 24-well plates at a density of 1 x 10^5 cells/mL at 1.0 mL per well.

Inoculum preparation:

The original stock virus used contained 0% serum.

Summary of the Test Method

The Virucidal Suspension Test included the following parameters:

Parameter	Summary	Plate Replicates
Virucidal Efficacy suspension test	Virus + Test Product → Exposure → Neutralization → Dilution → Plating	4 per group
Virus Control	Virus + Diluent → Neutralization → Dilution → Plating	4 per group
Cytotoxicity Control	Test Product + Diluent → Neutralization → Dilution → Plating	4 per group
Neutralization Effectiveness/Viral Interference Control	Test Product + Diluent → Neutralization → Virus inoculation → Dilution → Plating	4 per group
Cell Viability/Media Sterility Control	Maintenance medium	4 per group

TEST PROCEDURES (continued)

Virus Suspension Test

Two replicates per contact time exposure were performed. A 0.3 mL aliquot of test virus was transferred to a vial containing 2.7 mL of test solution and mixed by vortex. The challenge suspension was exposed to the test solution for the contact time. Immediately after the contact exposure, the 3.0 mL aliquot of the test virus/product suspension was neutralized with 3.0 mL of neutralizer, mixed thoroughly, and serially diluted in Dilution Medium (DM). Each dilution was plated in four replicates.

Virus Control

Two replicates of the Virus Control were performed. A 0.3 mL aliquot of the test virus was added to 2.7 mL of DM, mixed by vortex and exposed for the contact time at test temperature. Immediately after the contact exposure, a 3.0 mL aliquot of the test virus/product suspension was neutralized with 3.0 mL of neutralizer, mixed thoroughly, and serially diluted in Dilution Medium (DM). Each dilution was plated in four replicates.

Neutralization Effectiveness/Viral Interference Control

A 0.3 mL aliquot of DM was added to a vial containing a 2.7 mL aliquot of the test product, mixed by vortexing and held for the contact time. Upon completion of the contact time, an aliquot or the entirety of the reaction mixture was immediately mixed with an equal volume of neutralizer via vortexing (3.0 mL). Subsequent serial dilutions of this mixture were made in DM. An aliquot of the virus was added to each dilution and thoroughly mixed. 100 µL of low tittered virus was added to 4.5 mL of each dilution and held for a period of no shorter than the longest contact time. Selected dilutions were inoculated onto the host cell plates in four replicates.

Cytotoxicity Control

This control was performed for each test substance at one replicate and one contact time (the longer of the two). Selected dilutions of the sample obtained from the NE/VI control were inoculated onto host cells in four replicates without any virus to determine any cytotoxic effects from the test product.

Cell Viability/Media Sterility Control

Intact cell culture served as the control of cell culture viability. Dilution Medium was added

TEST PROCEDURES (continued)

to all cell control wells. All plates were incubated in a CO_2 incubator for 6 days at the appropriate temperature for the virus. Cytopathic/cytotoxic effects were monitored using an Inverted Compound Microscope.

TEST ACCEPTANCE CRITERIA

The test will be acceptable for evaluation of the test results if the criteria listed below are satisfied. The study director may consider other causes that may affect test reliability and acceptance.

- Virus must be recovered from the neutralizer effectiveness/viral interference control (not exhibiting cytotoxicity).
- Viral-induced cytopathic effects (CPE) must be distinguishable from test substance induced toxicity.
- The cell viability control must remain viable throughout the course of the assay period and exhibit absence of virus.

CALCULATIONS

The 50% Tissue Culture Infectious Dose per mL ($TCID_{50}$/mL) was determined using the Spearman-Karber method using the following formula:

$$m = x_k + \left(\frac{d}{2}\right) - d\sum p_i$$

where:

m = the logarithm of the dilution at which half of the wells are infected relative to the test volume
x_k = the logarithm of the smallest dosage which induces infection in all cultures
d = the logarithm of the dilution factor
p_i = the proportion of positive results at dilution i
$\sum p_i$ = the sum of p_i (starting with the highest dilution producing 100% infection)

The values were converted to $TCID_{50}$/mL using a sample inoculum of 1.0 mL.

RESULTS

Results are presented in Tables 1– 3.

The Viral Load was determined in the following manner:

Viral Load (Log_{10} $TCID_{50}$) = Titer (Log_{10} $TCID_{50}$/mL) + Log_{10} [Volume (mL) x Volume Correction] (e.g., neutralization)

Note: The volume (mL) of the Undiluted (10^0) sample was used in the above equation.

The Log_{10} Reduction Factor (LRF) was calculated in the following manner:

LRF = Initial Viral Load (Log_{10} $TCID_{50}$) – Output Viral Load (Log_{10} $TCID_{50}$)

The Average Log_{10} Virus Recovery Control was calculated in the following manner:

Average Log_{10} = (Replicate 1 + Replicate 2)/2)

Table 1
Titer Results

Sample	Contact Time	Replicate	Titer ($Log_{10}TCID_{50}$/mL)	Volume (mL)	Volume Correction [a]	Viral Load ($Log_{10}TCID_{50}$)
Virus Stock Titer Control	N/A	N/A	6.75	-	-	-
Cell Viability Control			no virus was detected, cells remained viable; media was sterile			
Virus Recovery Control	60 seconds	Rep 1	6.25	3	2	7.03
		Rep 2	6.50	3	2	7.28
	Virus Recovery Control - Average					7.16
CloSYS Ultra Sensitive Rinse (CloSYS Unflavored Rinse) (Batch No. 0007B 2-00106)[b]	30 seconds	Rep 1	2.25	3	2	3.03
		Rep 2	2.25	3	2	3.03
CloSYS Ultra Sensitive Rinse (CloSYS Unflavored Rinse) (Batch No. 0007B 2-00106)[b]	60 seconds	Rep 1	2.00	3	2	2.78
		Rep 2	1.75	3	2	2.53

[a] Volume correction accounts for the neutralization of the sample post contact time.
[b] Cytotoxicity observed at 10^{-1} dilution.

RESULTS (continued)

Table 2
Neutralizer Effectiveness/Viral Interference (NE/VI) and Cytotoxicity Controls (CT)
CloSYS Ultra Sensitive Rinse (CloSYS Unflavored Rinse)
(Batch No. 0007B 2-00106) 60 seconds

Dilution*	NE/VI	CT
10^{-1}	Cytotoxicity observed in all inoculated wells	Cytotoxicity observed in all inoculated wells
10^{-2}	virus detected in all inoculated wells	no virus detected in all inoculated wells
10^{-3}	virus detected in all inoculated wells	no virus detected in all inoculated wells

* Dilution refers to the fold of the diliuton from the neutralized sample.

Table 3
Reduction Factors

Test Substance	Contact Time	Replicate	Initial Load ($Log_{10}TCID_{50}$)*	Output Load ($Log_{10}TCID_{50}$)	Log_{10} Reduction	Reduction (%)
CloSYS Ultra Sensitive Rinse (CloSYS Unflavored Rinse) (Batch No. 0007B 2-00106)	30 seconds	Rep 1	7.16	3.03	4.13	99.993
		Rep 2		3.03	4.13	99.993
CloSYS Ultra Sensitive Rinse (CloSYS Unflavored Rinse) (Batch No. 0007B 2-00106)	60 seconds	Rep 1		2.78	4.38	99.996
		Rep 2		2.53	4.63	99.998

* The Average VRC for the corresponding contact time was used as the Initial Load.

CONCLUSIONS

When tested as described, CloSYS Ultra Sensitive Rinse (CloSYS Unflavored Rinse), Lot No. 0007B 2-00106 was evaluated for its ability to inactivate Influenza A Virus (H3N2). The results are presented in Tables 1 – 3. The data shows that CloSYS Ultra Sensitive Rinse (CloSYS Unflavored Rinse) reduced 99.993% of the Influenza A Virus (H3N2) within 30 seconds and 99.996 to 99.998% within 60 seconds.

All of the controls met the criteria for a valid test.

APPENDIX I

MICROBAC

Microbac Protocol

VIRUCIDAL EFFICACY SUSPENSION TEST -

Influenza A Virus (H3N2)

Testing Facility
Microbac Laboratories, Inc.
105 Carpenter Drive
Sterling, VA 20164

Prepared for
Rowpar Pharmaceuticals, Inc.
16100 N. Greenway-Hayden Loop, Suite 400
Scottsdale, AZ 85260

April 28, 2020

Microbac Protocol: 540.3.04.28.20

Microbac Project: 540-106

OBJECTIVE:

This study is designed to measure the virucidal effectiveness of a liquid test substance. It determines the potential of the test substance to inactivate the target virus – Influenza A Virus (H3N2) – in suspension. The test follows the ASTM International test method designated E1052 "Standard Test Method to Assess the Activity of Microbicides against Viruses in Suspension".

TESTING CONDITIONS:

One test substance, one batch (lot), will be tested. The test substance will be challenged with Influenza A Virus (H3N2) in suspension at ambient temperature and held for the stipulated contact time. Two contact times will be tested in two replicates (N=2).

For each run, the volume of virus inoculum added to test substance will be kept at 10% of the total volume of the test in order to minimize buffer interference and to minimize reduction of virucidal activity. Upon completion of the contact time, an aliquot or the entirety of the test substance-virus reaction mixture will be neutralized with an equal volume of neutralizer, passed through a Sephacryl column if required, and then serially diluted in a dilution medium and inoculated onto an appropriate host cell system. The inoculated host system will be incubated and scored for presence of infectious virus.

MATERIALS:

A. Test, control and reference substances will be supplied by the sponsor of the study (see last page).

The test substance will be tested as supplied by the sponsor unless directed otherwise. All operations performed on the test substance such as dilution or specialized storage conditions must be specified by the sponsor before initiation of testing.

The sponsor assures Microbac testing facility management that the test substance has been appropriately tested for identity, strength, purity, stability, and uniformity as applicable.

Upon the completion of the test, Microbac will return all unused test substances per the Sponsor's instructions unless otherwise directed by the Sponsor.

B. Materials supplied by Microbac, including, but not limited to:

1. Challenge virus (requested by the sponsor of the study): Influenza A Virus (H3N2), Strain: A/Hong Kong/8/68, Source: Charles River Laboratories

2. Host cell line: MDCK cells, source: ATCC CCL-34

3. Laboratory equipment and supplies.

4. Media and reagents:

   Media and reagents appropriate to the virus-host system will be used and documented in the data pack and project sheets.

TEST SYSTEM IDENTIFICATION:

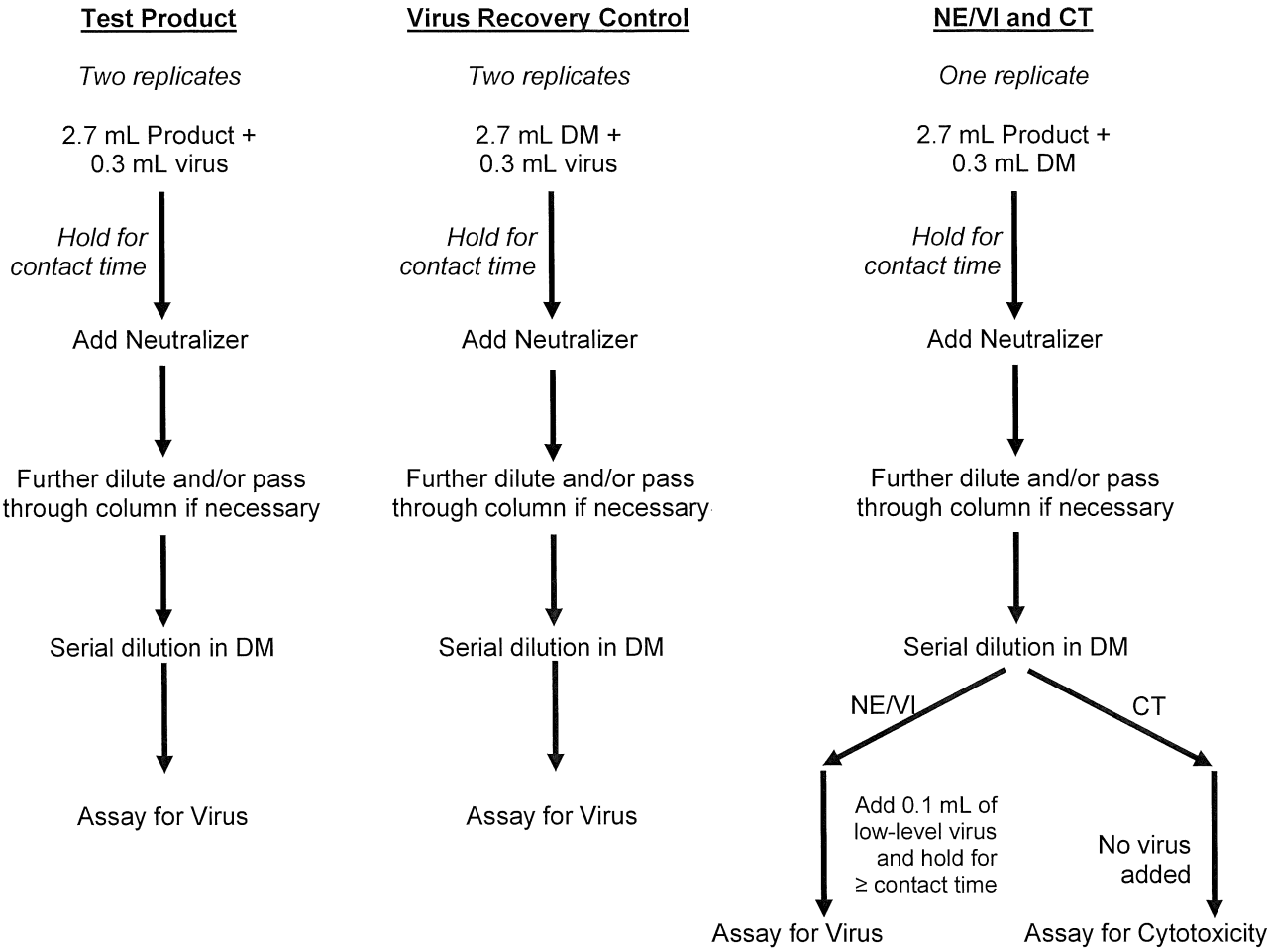
All dilution tube racks, and host cell-containing apparatus will be labeled with virus identification and project number.

EXPERIMENTAL DESIGN:

All the procedures involved in performance of this study are described in a detailed series of SOPs that are maintained at Microbac. SOPs and Logs are referred to in the raw data and are required as part of GLP regulations. The procedures used in different phases of the study will be documented in the data pack. The study flow diagram is summarized in Figure 1, with details described below.

FIGURE 1

Title: VIRUCIDAL EFFICACY SUSPENSION TEST – Influenza A Virus (H3N2)



DM: *Dilution Medium*
NE/VI: *Neutralizer Effectiveness/Viral Interference*
CT: *Cytotoxicity Control*

Note: One test product will be tested, at two contact times and two replicates (N=2). The VRC will be performed at one contact time (the longer of the two) and two replicates. The NE/VI and CT controls will be performed for each test product at one contact time (the longer of the two) and one replicate.

A. Inoculum preparation:

Viral stocks are purchased from reputable sources that identify them by scientifically accepted methods and are propagated at Microbac. Records are maintained that demonstrate the origin of the virus. The virus stocks are stored at an ultra-low temperature.

Frozen viral stocks will be thawed on the day of the test (fresh stock cultures may be used at the discretion of the Study Director). The challenge virus stock will contain 5.0% serum.

B. Test substance preparation:

Note: Information on the identity, strength, purity, stability, uniformity, and dose solution analysis of the test substance resides with the sponsor of the study.

The test substance(s) will be prepared exactly according to the sponsor's directions (if provided). If the sponsor requests dilution of the test substance, the diluted test substance will be used for testing within three hours of preparation. The test substance will be pre-equilibrated to the test temperature prior to use in the study as applicable.

C. Test

One test substance will be evaluated at two contact times in two replicates (N=2).

For each run, an aliquot of 0.3 mL virus stock will be added to 2.7 mL of the product test solution (post dilution, if applicable) and mixed by vortexing. A stopwatch will be started immediately to monitor the contact time. No stirring is required.

Upon completion of the contact time, an aliquot or the entirety of the reaction mixture will be pulled and immediately mixed with an equal volume of a neutralizer medium and then vortexed. The “post-neutralized sample” (PNS) is considered undiluted (10^0).

Selected dilutions will be inoculated onto the host cells to assay for the quantity of infectious virus units, as described in the “Infectivity Assay” section. If Sephacryl columns are used to aid in the neutralization and to further reduce the cytotoxicity, each inoculum/test substance/neutralizer mixture sample will be loaded onto a pre-

spun Sephacryl column. Following the passage through columns, the eluates will be aseptically collected and serially ten-fold diluted in DM. If columns are not used, serial ten-fold dilutions of the inoculum/test substance/neutralizer mixture will directly be prepared in DM.

D. Controls:

All controls will be performed at the same time as the test, incubated under the same conditions and assayed in the same manner as the test.

1. Virus recovery control (VRC):

   This control will be performed in two replicates (N=2) at one contact time (the longer of the two), concurrently with the test substance runs.

   A 2.7-mL aliquot of DM will be spiked with 0.3 mL of virus and mixed by vortexing. A stopwatch will be started immediately after virus addition to monitor the contact time.

   Upon completion of the contact time, an aliquot or the entirety of the reaction mixture will be immediately mixed with an equal volume of a neutralizer medium via vortexing. This "post-neutralized sample" (PNS) is considered undiluted (10^0).

   Selected dilutions will be inoculated onto the host cells to assay for the quantity of infectious virus, as described in the "Infectivity Assay" section.

   The results from this control will be used as the input viral load and compared with the test substance results to evaluate the viral reduction by the test substance.

2. Neutralizer effectiveness/viral interference (NE/VI) control:

   This control will determine if residual active ingredient is present after neutralization and if the neutralized test substance interferes with virus infectivity. This control will be performed for each test substance at one replicate (N=1) at one contact time (the longer of the two).

A 2.7-mL aliquot of the test substance will be spiked with 0.3 mL of DM (in lieu of virus), mixed by vortexing and held for the contact time.

Upon completion of the contact time, an aliquot or the entirety of the reaction mixture will be immediately mixed with an equal volume of a neutralizer medium via vortexing. This "post-neutralized sample" (PNS) is considered undiluted (10^0). The PNS will be divided into two portions, one for cytotoxicity control and the other for neutralizer effectiveness/viral interference control; and processed as the test.

If columns are used, each portion will be passed through individual columns and the eluate will be serially diluted ten-fold in DM. If columns are not used, each portion will be directly diluted using serial ten-fold dilutions in DM.

Following the serial dilutions of the sample, for the NE/VI control, 100 µL of a low titered virus (containing no more than approximately 5,000 units of virus) will be added to 4.5 mL of each dilution and held for a period of no shorter than the contact time. Then these selected dilutions will be inoculated onto the host cells as described for the test procedure.

3. Cytotoxicity control (CT):

   This control will be performed for each test substance at one replicate (N=1) at one contact time (the longer of the two).

   Selected dilutions of the sample obtained from the NE/VI control test setup will be inoculated onto host cells and incubated together with other test and control samples as described for the test procedure. The condition of the host cells will be recorded at the end of the incubation period. The cytotoxic effects should be distinct from virus-specific cytopathic effects, which will be evident in the stock titer and virus recovery control cultures.

4. Column titer control (to be performed only if a Sephacryl column is used):

   This control will be performed to determine any affect the columns may have on infectious virus titer. It will be performed in singlet runs.

The sample for this control will be acquired from a portion of the VRC, prior to passing through the columns and will be serially diluted in DM, then processed in the same manner as the test.

5. Cell viability control:

   At least four wells will be inoculated with an appropriate media during the incubation phase of the study. This control will demonstrate that cells remain viable throughout the course of the assay period. In addition, it will confirm the sterility of the media employed throughout the assay period.

6. Virus Stock Titer control (VST):

   An aliquot of the virus stock as used in the study will be directly serially diluted and inoculated onto the host cells to confirm the titer of the stock virus. This control will demonstrate that the titer of the stock virus is appropriate for use and that the viral infectivity assay is performed appropriately.

E. Infectivity assay:

The residual infectious virus in the test and controls will be detected by viral-induced cytopathic effect (CPE).

Selected dilutions of the neutralized inoculum / test substance (or DM) mixture will be added to cultured cell monolayers at a minimum of four wells per dilution per sample. The inoculated plates will be incubated at 36±2°C in 5±3% CO_2 for 4 – 6 days. The host cells may be washed twice with phosphate buffered saline prior to inoculation. The host cell cultures will be observed and refed, as necessary, during the incubation period. The host cells will be examined for presence of infectious virus following the completion of the incubation period. The resulting virus-specific CPE and test-article specific cytotoxic effects, if present, will be scored by examining both test and controls. If necessary, virus will be detected via staining with virus-specific antibody. These observations will be recorded.

F. Calculation:

The 50% tissue culture infective dose per mL ($TCID_{50}$/mL) will be determined using the method of Spearman-Karber (Kärber G. Arch. Exp. Pathol. Pharmakol, 1931,162:480-483) or other appropriate methods such as Reed and Muench (Am. J. of Hyg. 1938, 27:493). In the case where a sample contains no detectable virus, a statistical analysis may be performed based on Poisson distribution (International Conference On Harmonization, 1999, Topic Q5A:24-25) to determine the theoretical maximum possible titer for that sample. These analyses will be described in detail in the final report. The test results will be reported as the reduction of the virus titer due to treatment with test substance expressed as log_{10}.

The Virus Load will be calculated in the following manner:
Virus Load (Log_{10} $TCID_{50}$) = Virus Titer (Log_{10} $TCID_{50}$/mL) + Log_{10} [Volume (mL) x Volume correction (e.g., neutralization)]

The Log_{10} Reduction Factor (LRF) will be calculated in the following manner:
Log_{10} Reduction Factor = Virus Recovery Control (Log_{10} $TCID_{50}$) – Test (Log_{10} $TCID_{50}$)

TEST ACCEPTANCE CRITERIA:

The test will be acceptable for evaluation of the test results if the criteria listed below are satisfied. The study director may consider other causes that may affect test reliability and acceptance.

- Virus must be recovered from the neutralizer effectiveness/viral interference control (not exhibiting cytotoxicity).
- Viral-induced CPE must be distinguishable from test substance induced toxicity.
- The cell viability control must remain viable throughout the course of the assay period and exhibit absence of virus.

PERSONNEL AND TESTING FACILITIES:

A study director will be assigned prior to initiation of the test. Resumes are maintained and are available on request. This study will be conducted at Microbac Laboratories, Inc., 105 Carpenter Drive, Sterling, Virginia 20164.

REPORT FORMAT:

A standard report format will be used for this test design. Each final report will provide at least the following information:

- Sponsor identification
- Test substance identification
- Type of assay and project number
- Study start and end time (clock time)
- Interpretation of results and conclusions
- Test results presented in tabular form
- Methods and evaluation criteria, if applicable
- Dates of study initiation and completion (GLP studies only)
- Signed Quality Assurance and Compliance Statements (GLP studies only)
- Certificate of Analysis (for GLP studies only; if provided by the Sponsor)

RECORDS TO BE MAINTAINED:

For all GLP studies, the original signed final report will be sent to the Sponsor.

All raw data, protocol, protocol modifications, test substance records, final report, and correspondence between Microbac and the sponsor will be stored in the archives at Microbac Laboratories, Inc., 105 Carpenter Drive, Sterling, Virginia 20164 or in a controlled facility off site.

All changes or revisions to this approved protocol will be documented, signed by the study director, dated and maintained with this protocol. The sponsor will be notified of any change, resolution, and impact on the study as soon as practical.

The proposed experimental start and termination dates; additional information about the test substance, challenge virus, and host cell line monolayers used and the type of neutralizers employed in the test will be addressed in a project sheet issued separately for each study. The date the study director signs the protocol will be the study initiation date. All project sheets issued will be forwarded to the study sponsor for appropriate action.

MISCELLANEOUS INFORMATION:

The following information is to be completed by the sponsor prior to initiation of the study (please check all applicable open boxes):

A. Test substance information:

Test substance name	ClōSys Unflavored Rinse		
Test substance batch numbers	0007B 2-00106		
Manufacture Date	01/07/2020		
Expiration Date	01/2023		
Active ingredient(s)	Stabilized Chlorine Dioxide		
Test substance storage conditions	☑ Ambient ☐ Refrigerated ☐ Other:_____		
Level of active ingredients in testing	☐ Lower Certified Limit (LCL) ☑ At or below nominal		
MSDS provided	☑ Yes ☐ No	C of A provided	☑ Yes ☐ No
Dilution	☑ Ready to use ☐ _____ (_____ parts test substance + _____ parts diluent)		
Diluent	☑ Not applicable ☐ _____ ppm ±2.9% AOAC hard water ☐ Other:_____		
Contact times	■ 30 seconds; ■ 60 seconds		
Contact temperature	☑ Room Temperature (20±1°C) ☐ Other :_____		
Organic Load	☐ 5.0% serum in viral inoculum ☑ Other: 0% Serum		
Test substance application	0.3 mL of virus will be added to 2.7 mL of test substance and mixed by vortex mixing.		
Study conduct	■ GLP ☐ Non-GLP		
Report submission	☐ EPA ☐ Health Canada ☑ Other: ~~ASA~~, FDA		

PROTOCOL APPROVAL BY SPONSOR:

Sponsor Signature: _____ Date: 05/01/2020

Printed Name: Jayprakash G. Shewale

PROTOCOL APPROVAL BY STUDY DIRECTOR (Microbac):

Study Director Signature: _____ Date: 07/23/2020

Printed Name: SEMHAR FANUEL

Date Issued: 07/23/20 Project Sheet No. 1 Page No. 1 Laboratory Project Identification No. 540-106

STUDY TITLE: VIRUCIDAL EFFICACY SUSPENSION TEST- Influenza A Virus (H3N2)	**STUDY DIRECTOR:** Semhar Fanuel Semhar Fanuel 07/23/2020 Signature Date		
TEST MATERIAL(S): CloSYS Unflavored Rinse	**LOT NO.:** 0007B 2-00106	**DATE RECEIVED:** 05/04/20	**DS NO.:** K521
PERFORMING DEPARTMENT(S): Virology and Toxicology	**STORAGE CONDITIONS:** Location: H2 ■Dark ■ Ambient Room Temperature ☐ Desiccator ☐ Freezer ☐ Refrigerator ☐ Other:		

PROTECTIVE PRECAUTION REQUIRED: MSDS ■ Yes / ☐ No

PHYSICAL DESCRIPTION: ☐ Solid ■Liquid ☐ Aerosol ☐ Other:

PURPOSE: See attached protocol. **AUTHORIZATION:** See client signature.

PROPOSED EXPERIMENTAL START DATE: 07/23/20 **TERMINATION DATE:** 07/29/20

CONDUCT OF STUDY: ■FDA ☐EPA ☐R&D ■GLP ☐GCP ■Other: ADA

SPONSOR: Rowpar Pharmaceuticals, Inc. 16100 N. Greenway-Hayden Loop, Suite 400 Scottsdale, AZ 85260	**CONTACT PERSON:** Jaiprakash Shewale Email: Jshewale@rowpar.com Phone: 480-948-6997 X 17

TEST CONDITIONS:

Challenge organism(s):	Influenza A Virus (H3N2), A/Hong Kong/8/68, Source: Charles River Laboratories
Host Cells:	MDCK cells, Source: ATCC CCL-34
Active ingredient(s):	Stabilized Chlorine Dioxide
Dilution Medium:	Minimum Essential Medium (MEM) + 1.0 µg/mL Trypsin
Neutralizer(s):	MEM + 1% Newborn Calf Serum (NCS) + 0.5% $Na_2S_2O_3$
Contact Time(s):	30 seconds, 60 seconds
Contact Temperature(s):	20±1°C
Dilution(s):	Not applicable (received ready to use)
Diluent:	Not applicable
Organic Load:	0% serum in viral inoculum
Incubation Time(s):	4-6 days
Incubation Condition(s):	36±2°C with 5±3% CO_2
Test Substance Application:	0.3 mL of virus will be added to 2.7 mL of test substance and mixed by vortex mixing.

Date Issued: 09/10/20 Project Sheet No. 2 Page No. 1 Laboratory Project Identification No. 540-106

STUDY TITLE: VIRUCIDAL EFFICACY SUSPENSION TEST- Influenza A Virus (H3N2)	**STUDY DIRECTOR:** Semhar Fanuel Semhar Fan 9/10/2020 Signature Date		
TEST MATERIAL(S): CloSYS Unflavored Rinse	**LOT NO.:** 0007B 2-00106	**DATE RECEIVED:** 05/04/20	**DS NO.:** K521
PERFORMING DEPARTMENT(S): Virology and Toxicology	**STORAGE CONDITIONS:** Location: H2 ■Dark ■ Ambient Room Temperature ☐ Desiccator ☐ Freezer ☐ Refrigerator ☐ Other:		
CONDUCT OF STUDY: ■FDA ☐EPA ☐R&D ■GLP ☐GCP ■Other: ADA			
SPONSOR: Rowpar Pharmaceuticals, Inc. 16100 N. Greenway-Hayden Loop, Suite 400 Scottsdale, AZ 85260	**CONTACT PERSON:** Jaiprakash Shewale Email: Jshewale@rowpar.com Phone: 480-948-6997 X 17		

PROTOCOL AMENDMENT(S):

1. The Inoculum Preparation section of the Protocol states, "The challenge virus stock will contain 5% serum". Per sponsor, the challenge virus stock should be "0% serum". This amendment serves to clarify the Protocol.

Date Issued: 09/28/20	Project Sheet No. 3 Page No. 1	Laboratory Project Identification No. 540-106
STUDY TITLE: VIRUCIDAL EFFICACY SUSPENSION TEST- Influenza A Virus (H3N2)	**STUDY DIRECTOR:** Semhar Fanuel Semhar Fanuel 09/28/2020 Signature Date	
TEST MATERIAL(S): CloSYS Unflavored Rinse	**LOT NO.:** 0007B 2-00106	**DATE RECEIVED:** 05/04/20
PERFORMING DEPARTMENT(S): Virology and Toxicology	**STORAGE CONDITIONS:** Location: H2 ■Dark ■ Ambient Room Temperature ☐ Desiccator ☐ Freezer ☐ Refrigerator ☐ Other:	
CONDUCT OF STUDY: ■FDA ☐EPA ☐R&D ■GLP ☐GCP ■Other: ADA		
SPONSOR: Rowpar Pharmaceuticals, Inc. 16100 N. Greenway-Hayden Loop, Suite 400 Scottsdale, AZ 85260	**CONTACT PERSON:** Jaiprakash Shewale Email: Jshewale@rowpar.com Phone: 480-948-6997 X 17	

PROTOCOL AMENDMENT(S):

2. The Miscellaneous Information section of the Protocol and Project Sheet Nos.1 and 2 list the Test Material name as, "CloSYS Unflavored Rinse". Per Sponsor, the Test Material name should be, "CloSYS Ultra Sensitive Rinse (CloSYS Unflavored Rinse)". This amendment serves to clarify the Test Material name.