YEDİTEPE UNIVERSITY
FACULTY OF ENGINEERING
DEPARTMENT OF GENETICS AND BIOENGINEERING

ANTIVIRAL ACTIVITY TEST REPORT

REPORT RECORD NUMBER AND DATE	80-VİR-2016-1 04.08.2016
SAMPLE RECORD NUMBER	2016-156
MANUFACTURER NAME AND ADRESS	Doğanay Kimya San. ve Tic. Ltd. Şti. Tuzla Org. Deri San. Böl. 15 Yol VII/2E Parsel Tuzla/İstanbul
THE LICENSE OWNER COMPANY AND ADRESS	Dyna Med Sağlık Gıda Tarım Hayv. San. İç ve Dış Tic. Ltd. Şti. Nine Hatun Mah. Çinçin Dere Cad. 223/B Esenler / İstanbul
TESTED PRODUCT NAME	VİRES 5
ACTIVE SUBSTANCES OF THE PRODUCT	Active Chlor 0,0160%
FORM OF PRODUCT FORMULATION	Liquid
SAMPLE ARRIVAL DATE	15.07.2016
TEST PURPOSE	Viral activity determination
SAMPLE SENDING INSTITUTION, DATE AND NO	İstanbul Governorate Public Health Directorate
PRODUCTION AND EXPIRATION DATE OF PRODUCT	14.07.2016 - 14.07.2018
SAMPLE CHARGE/SERIAL NO	*16002*
TEST START AND END DATE	15.07.2016 – 03.08.2016
TESTED VIRUS AND STRAIN	Poliovirus Type 1, Chat strain
TESTED VIRUS AND STRAIN PROPERTIES	Reference strain of ATCC coded VR-192
TESTED DOSE	The highest non-cytotoxic concentration of the product was 0.1%, hence higher concentration than 0.1% was not tested in *in vitro* viral activity assays.
CONTACT METHOD AND DURATION	Liquid mixture (inside the cell culture plates), 5 minutes and 60 minutes.
TEST CONDITIONS	**Clean Condition:** BSA-containing medium (20 °C) **Dirty Condition**: BSA and sheep erythrocytes-containing medium (20 °C)
TEST CELL CULTURE AND DILUTION BUFFER	HEp-2 cell culture (ATCC CCL-23) MEM, PBS, Hard water
ANALYSIS METHOD	TS EN 14476 test method of Turkish Standards Institute (2014)

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TEST RESULTS

ACTIVITY EVALUATION METHOD

Serial dilutions of reference Poliovirus type 1, chat strain were inoculated onto HEp-2 cells and viral titer was calculated using Spearman-Karper method based on the virus dilution which exerted visible cytopathic effect under invert microscope.

RESULTS

	Reference virus	Effect of Vires 5			
		5 minute		60 minutes	
Virus titer*	5.5	Clean Condition	Dirty Condition	Clean Condition	Dirty Condition
Virus titer with the disinfectant **		1.5	1.5	1.5	1.5
Reduction rate in virus titer ***		4.0	4.0	4.0	4.0

* Logarithmic TCID50 value of virus per ml
** Logarithmic TCID50 value of virus which was exposed to disinfectant at different contact time and conditions
*** Logarithmic TCID50 ratio of virus titer and virus titer with the disinfectant

COMMENT

As tested concentration Vires 5; 10 % and 1 %, was found to exert cytotoxicity against test cell culture, the highest concentration of the disinfectant which did not display any toxicity, 0,1 % was used in the experiments. According to the calculations based on test results, 10 % concentration of Vires 5 provided at least 4 log reduction in virus titer at room temperature (20 °C) in all test conditions (see result table) for 5 and 60 minutes contact time. According to the Antimicrobial Division US EPA standards, disinfectants has to provide minimum 4 log virus titer reduction to be an acceptable virucidal agent.

The results of the test show that Vires 5 possesses 99.99% antiviral activity against Poliovirus Type 1 at room temperature (20 °C) for 5 and 60 minutes contact time when used at 10 % concentration.

Binnur KIRATLI
Analyst

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ANTIVIRAL ACTIVITY TEST REPORT

REPORT RECORD NUMBER AND DATE	80-VİR-2016-2 04.08.2016
SAMPLE RECORD NUMBER	2016-156
MANUFACTURER NAME AND ADRESS	Doğanay Kimya San. ve Tic. Ltd. Şti. Tuzla Org. Deri San. Böl. 15 Yol VII/2E Parsel Tuzla/İstanbul
THE LICENSE OWNER COMPANY AND ADRESS	Dyna Med Sağlık Gıda Tarım Hayv. San. İç ve Dış Tic. Ltd. Şti. Nine Hatun Mah. Çinçin Dere Cad. 223/B Esenler / İstanbul
TESTED PRODUCT NAME	VİRES 5
ACTIVE SUBSTANCES OF THE PRODUCT	Active Chlor 0,0160%
FORM OF PRODUCT FORMULATION	Liquid
SAMPLE ARRIVAL DATE	15.07.2016
TEST PURPOSE	Viral activity determination
SAMPLE SENDING INSTITUTION, DATE AND NO	İstanbul Governorate Public Health Directorate
PRODUCTION AND EXPIRATION DATE OF PRODUCT	14.07.2016 - 14.07.2018
SAMPLE CHARGE/SERIAL NO	*16002*
TEST START AND END DATE	15.07.2016 – 03.08.2016
TESTED VIRUS AND STRAIN	Human adenovirus type 5, Adenoid 75 strain
TESTED VIRUS AND STRAIN PROPERTIES	Reference strain of ATCC coded VR-5
TESTED DOSE	The highest non-cytotoxic concentration of the product was 0.1%, hence higher concentration than 0.1% was not tested in *in vitro* viral activity assays.
CONTACT METHOD AND DURATION	Liquid mixture (inside the cell culture plates), 5 minutes and 60 minutes.
TEST CONDITIONS	**Clean Condition:** BSA-containing medium (20 °C) **Dirty Condition**: BSA and sheep erythrocytes-containing medium (20 °C)
TEST CELL CULTURE AND DILUTION BUFFER	HEp-2 cell culture (ATCC CCL-23) MEM, PBS, Hard water
ANALYSIS METHOD	TS EN 14476 test method of Turkish Standards Institute (2014)

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TEST RESULTS

ACTIVITY EVALUATION METHOD

Serial dilutions of reference Human adenovirus type 5, Adenoid 75 strain were inoculated onto HEp-2 cells and viral titer was calculated using Spearman-Karper method based on the virus dilution which exerted visible cytopathic effect under invert microscope.

RESULTS

	Reference virus	Effect of Vires 5			
		5 minute		60 minutes	
Virus titer*	5.0	Clean Condition	Dirty Condition	Clean Condition	Dirty Condition
Virus titer with the disinfectant **		1.5	1.5	1.5	1.5
Reduction rate in virus titer ***		4.0	4.0	4.0	4.0

* Logarithmic TCID50 value of virus per ml
** Logarithmic TCID50 value of virus which was exposed to disinfectant at different contact time and conditions
*** Logarithmic TCID50 ratio of virus titer and virus titer with the disinfectant

COMMENT

As tested concentration Vires 5; 10 % and 1 %, was found to exert cytotoxicity against test cell culture, the highest concentration of the disinfectant which did not display any toxicity, 0,1 % was used in the experiments. According to the calculations based on test results, 10 % concentration of Vires 5 provided at least 4 log reduction in virus titer at room temperature (20 °C) in all test conditions (see result table) for 5 and 60 minutes contact time. According to the Antimicrobial Division US EPA standards, disinfectants has to provide minimum 4 log virus titer reduction to be an acceptable virucidal agent.

The results of the test show that Vires 5 possesses 99.99% antiviral activity against Human adenovirus type 5 at room temperature (20 °C) for 5 and 60 minutes contact time when used at 10 % concentration.

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ANTIVIRAL ACTIVITY TEST REPORT

REPORT RECORD NUMBER AND DATE	80-VİR-2016-3 04.08.2016
SAMPLE RECORD NUMBER	2016-156
MANUFACTURER NAME AND ADRESS	Doğanay Kimya San. ve Tic. Ltd. Şti. Tuzla Org. Deri San. Böl. 15 Yol VII/2E Parsel Tuzla/İstanbul
THE LICENSE OWNER COMPANY AND ADRESS	Dyna Med Sağlık Gıda Tarım Hayv. San. İç ve Dış Tic. Ltd. Şti. Nine Hatun Mah. Çinçin Dere Cad. 223/B Esenler / İstanbul
TESTED PRODUCT NAME	VİRES 5
ACTIVE SUBSTANCES OF THE PRODUCT	Active Chlor 0,0160%
FORM OF PRODUCT FORMULATION	Liquid
SAMPLE ARRIVAL DATE	15.07.2016
TEST PURPOSE	Viral activity determination
SAMPLE SENDING INSTITUTION, DATE AND NO	İstanbul Governorate Public Health Directorate
PRODUCTION AND EXPIRATION DATE OF PRODUCT	14.07.2016 - 14.07.2018
SAMPLE CHARGE/SERIAL NO	*16002*
TEST START AND END DATE	15.07.2016 – 03.08.2016
TESTED VIRUS AND STRAIN	Murine Norovirus
TESTED VIRUS AND STRAIN PROPERTIES	Reference strain of ATCC coded PTA-5935
TESTED DOSE	The highest non-cytotoxic concentration of the product was 0.1%, hence higher concentration than 0.1% was not tested in *in vitro* viral activity assays.
CONTACT METHOD AND DURATION	Liquid mixture (inside the cell culture plates), 5 minutes and 60 minutes.
TEST CONDITIONS	**Clean Condition:** BSA-containing medium (20 °C) **Dirty Condition**: BSA and sheep erythrocytes-containing medium (20 °C)
TEST CELL CULTURE AND DILUTION BUFFER	RAW cell culture (ATCC TIB-71) MEM, PBS, Hard water
ANALYSIS METHOD	TS EN 14476 test method of Turkish Standards Institute (2014)

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TEST RESULTS

ACTIVITY EVALUATION METHOD

Serial dilutions of reference Murine Norovirus PTA-5935 strain were inoculated onto RAW cells and viral titer was calculated using Spearman-Karper method based on the virus dilution which exerted visible cytopathic effect under invert microscope.

RESULTS

	Reference virus	Effect of Vires 5			
		5 minute		60 minutes	
Virus titer*	5.5	Clean Condition	Dirty Condition	Clean Condition	Dirty Condition
Virus titer with the disinfectant **		1.5	1.5	1.5	1.5
Reduction rate in virus titer ***		4.0	4.0	4.0	4.0

* Logarithmic TCID50 value of virus per ml
** Logarithmic TCID50 value of virus which was exposed to disinfectant at different contact time and conditions
*** Logarithmic TCID50 ratio of virus titer and virus titer with the disinfectant

COMMENT

As tested concentration Vires 5; 10 % and 1 %, was found to exert cytotoxicity against test cell culture, the highest concentration of the disinfectant which did not display any toxicity, 0,1 % was used in the experiments. According to the calculations based on test results, 10 % concentration of Vires 5 provided at least 4 log reduction in virus titer at room temperature (20 °C) in all test conditions (see result table) for 5 and 60 minutes contact time. According to the Antimicrobial Division US EPA standards, disinfectants has to provide minimum 4 log virus titer reduction to be an acceptable virucidal agent.

The results of the test show that Vires 5 possesses 99.99% antiviral activity against Murine Norovirüs at room temperature (20 °C) for 5 and 60 minutes contact time when used at 10 % concentration.

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ANTIVIRAL ACTIVITY TEST REPORT

REPORT RECORD NUMBER AND DATE	80-VİR-2016-4 04.08.2016
SAMPLE RECORD NUMBER	2016-156
MANUFACTURER NAME AND ADRESS	Doğanay Kimya San. ve Tic. Ltd. Şti. Tuzla Org. Deri San. Böl. 15 Yol VII/2E Parsel Tuzla/İstanbul
THE LICENSE OWNER COMPANY AND ADRESS	Dyna Med Sağlık Gıda Tarım Hayv. San. İç ve Dış Tic. Ltd. Şti. Nine Hatun Mah. Çinçin Dere Cad. 223/B Esenler / İstanbul
TESTED PRODUCT NAME	VİRES 5
ACTIVE SUBSTANCES OF THE PRODUCT	Active Chlor 0,0160%
FORM OF PRODUCT FORMULATION	Liquid
SAMPLE ARRIVAL DATE	15.07.2016
TEST PURPOSE	Viral activity determination
SAMPLE SENDING INSTITUTION, DATE AND NO	İstanbul Governorate Public Health Directorate
PRODUCTION AND EXPIRATION DATE OF PRODUCT	14.07.2016 - 14.07.2018
SAMPLE CHARGE/SERIAL NO	*16002*
TEST START AND END DATE	15.07.2016 – 03.08.2016
TESTED VIRUS AND STRAIN	Bovine Enterovirus Type 1, LCR 4 strain
TESTED VIRUS AND STRAIN PROPERTIES	Reference strain of ATCC coded VR-248
TESTED DOSE	The highest non-cytotoxic concentration of the product was 0.1%, hence higher concentration than 0.1% was not tested in *in vitro* viral activity assays.
CONTACT METHOD AND DURATION	Liquid mixture (inside the cell culture plates), 30 minutes and 60 minutes.
TEST CONDITIONS	**Clean Condition:** BSA-containing medium (10 °C) **Dirty Condition**: BSA and sheep erythrocytes-containing medium (10 °C)
TEST CELL CULTURE AND DILUTION BUFFER	MDBK cell culture (ATCC CCL-22) MEM, PBS, Hard water
ANALYSIS METHOD	TS EN 14675 test method of Turkish Standards Institute (2006)

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TEST RESULTS

ACTIVITY EVALUATION METHOD

Serial dilutions of reference Bovine enterovirus Type 1 strain were inoculated onto MDBK cell culture and viral titer was calculated using Spearman-Karper method based on the virus dilution which exerted visible cytopathic effect under invert microscope.

RESULTS

	Reference virus	Effect of Vires 5			
		30 minute		60 minutes	
Virus titer*	6.0	Clean Condition	Dirty Condition	Clean Condition	Dirty Condition
Virus titer with the disinfectant **		1.5	1.5	1.5	1.5
Reduction rate in virus titer ***		4.5	4.5	4.5	4.5

* Logarithmic TCID50 value of virus per ml
** Logarithmic TCID50 value of virus which was exposed to disinfectant at different contact time and conditions
*** Logarithmic TCID50 ratio of virus titer and virus titer with the disinfectant

COMMENT

As tested concentration Vires 5; 10 % and 1 %, was found to exert cytotoxicity against test cell culture, the highest concentration of the disinfectant which did not display any toxicity, 0,1 % was used in the experiments. According to the calculations based on test results, 10 % concentration of Vires 5 provided at least 4 log reduction in virus titer at room temperature (10 °C) in all test conditions (see result table) for 30 and 60 minutes contact time. According to the Antimicrobial Division US EPA standards, disinfectants has to provide minimum 4 log virus titer reduction to be an acceptable virucidal agent.

The results of the test show that Vires 5 possesses 99.99% antiviral activity against Bovine Enterovirus Type 1 at room temperature (10 °C) for 30 and 60 minutes contact time when used at 10 % concentration.

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ANTIVIRAL ACTIVITY TEST REPORT

REPORT RECORD NUMBER AND DATE	80-VİR-2016-5 04.08.2016
SAMPLE RECORD NUMBER	2016-156
MANUFACTURER NAME AND ADRESS	Doğanay Kimya San. ve Tic. Ltd. Şti. Tuzla Org. Deri San. Böl. 15 Yol VII/2E Parsel Tuzla/İstanbul
THE LICENSE OWNER COMPANY AND ADRESS	Dyna Med Sağlık Gıda Tarım Hayv. San. İç ve Dış Tic. Ltd. Şti. Nine Hatun Mah. Çinçin Dere Cad. 223/B Esenler / İstanbul
TESTED PRODUCT NAME	VİRES 5
ACTIVE SUBSTANCES OF THE PRODUCT	Active Chlor 0,0160%
FORM OF PRODUCT FORMULATION	Liquid
SAMPLE ARRIVAL DATE	15.07.2016
TEST PURPOSE	Viral activity determination
SAMPLE SENDING INSTITUTION, DATE AND NO	İstanbul Governorate Public Health Directorate
PRODUCTION AND EXPIRATION DATE OF PRODUCT	14.07.2016 - 14.07.2018
SAMPLE CHARGE/SERIAL NO	*16002*
TEST START AND END DATE	15.07.2016 – 03.08.2016
TESTED VIRUS AND STRAIN	Human Rotavirüs Wa strain
TESTED VIRUS AND STRAIN PROPERTIES	Reference strain of ATCC coded VR-2018
TESTED DOSE	The highest non-cytotoxic concentration of the product was 0.1%, hence higher concentration than 0.1% was not tested in *in vitro* viral activity assays.
CONTACT METHOD AND DURATION	Liquid mixture (inside the cell culture plates), 2 minutes and 60 minutes.
TEST CONDITIONS	**Clean Condition:** BSA-containing medium (20 °C) **Dirty Condition**: BSA and sheep erythrocytes-containing medium (20 °C)
TEST CELL CULTURE AND DILUTION BUFFER	MA104 cell culture (ATCC CCL-23) MEM, PBS, Hard water
ANALYSIS METHOD	TS EN 14476 test method of Turkish Standards Institute (2014) And OECD ENV/JM/MONO/2012 (15)

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TEST RESULTS

ACTIVITY EVALUATION METHOD

Serial dilutions of reference Human Rotavirüs, Wa strain were inoculated onto MA104 cells and viral titer was calculated using Spearman-Karper method based on the virus dilution which exerted visible cytopathic effect under invert microscope.

RESULTS

	Reference virus	Effect of Vires 5			
		2 minute		60 minutes	
Virus titer*	5.0	Clean Condition	Dirty Condition	Clean Condition	Dirty Condition
Virus titer with the disinfectant **		1.5	1.5	1.5	1.5
Reduction rate in virus titer ***		3.0	3.0	4.0	4.0

* Logarithmic TCID50 value of virus per ml
** Logarithmic TCID50 value of virus which was exposed to disinfectant at different contact time and conditions
*** Logarithmic TCID50 ratio of virus titer and virus titer with the disinfectant

COMMENT

As tested concentration Vires 5; 10 % and 1 %, was found to exert cytotoxicity against test cell culture, the highest concentration of the disinfectant which did not display any toxicity, 0,1 % was used in the experiments. According to the calculations based on test results, 10 % concentration of Vires 5 provided at least 4 log reduction in virus titer at room temperature (20 °C) in all test conditions (see result table) for 2 and 60 minutes contact time. According to the Antimicrobial Division US EPA standards, disinfectants has to provide minimum 4 log virus titer reduction to be an acceptable virucidal agent.(According to OECD ENV/JM/MONO/2012 minimum 3 log)

The results of the test show that Vires 5 possesses 99.9% antiviral activity against Human Rotavirüs, Wa strain at room temperature (20 °C) for 2 and 60 minutes contact time when used at 1 ppm/Liter concentration.

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