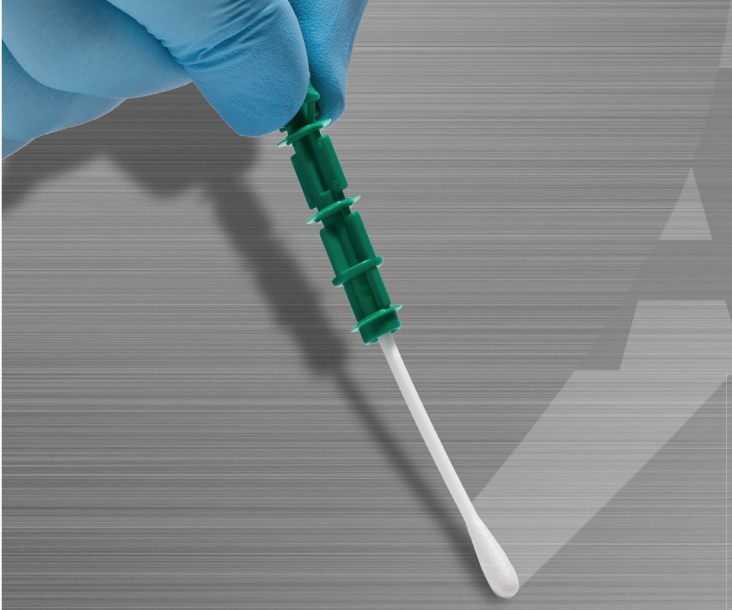
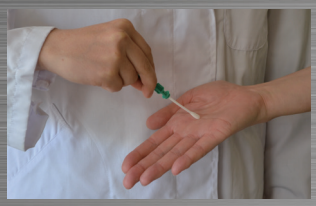


Because better detection equals better protection.



Hand Hygiene / Education, Monitoring and Feedback

Environmental Cleaning and Monitoring for Infection Prevention and Control

Cleaning Evaluation of Medical Instrument / CSSD

Endoscope Cleaning Verification

Lumitester Smart

LuciPac A3 Surface

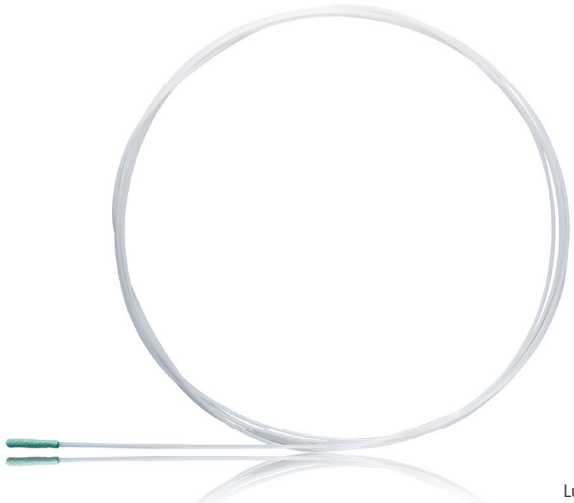
Lumitester™

With A3 Detection

ATP+ADP+AMP

More Reliable and Sensitive

A3 Finds What Others Miss



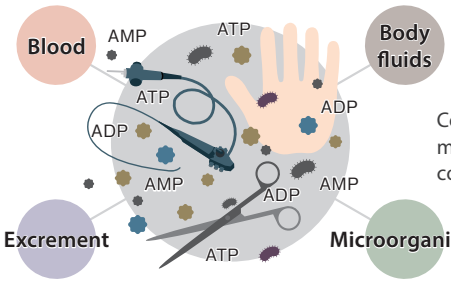
LuciSwab ES 2.0-2.2
LuciSwab ES 2.8-3.2
LuciSwab ES 3.7-4.2

kikkoman®

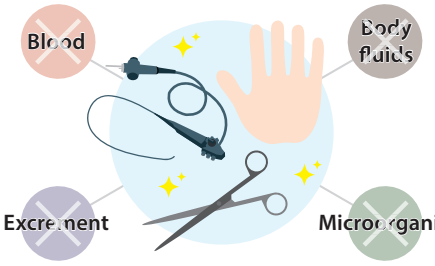
What is A Novel ATP Test? - ATP Test (Kikkoman A3)

A novel ATP test – ATP Test (Kikkoman A3) is used to measure the amounts of ATP, ADP and AMP.

ATP, ADP and AMP are present in contaminants of medical facilities (blood, body fluids, excrement,microorganism).
If the level of ATP,ADP,AMP is high, the cleaning is considered insufficient; If the level is low, the cleaning is considered adequate.



Contaminants in medical facilities contain ATP,ADP,AMP



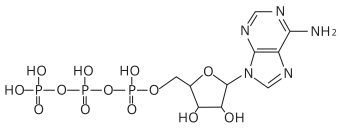
You can check the cleanliness by the amount of ATP, ADP, AMP

Principle of Kikkoman A3– ATP+ADP+AMP Detection

Kikkoman has developed ATP+ADP+AMP detection, Kikkoman A3 by utilizing brewing technique of soy sauce.
Kikkoman's own Kikkoman A3 allows you to detect not only ATP but also ADP and AMP have been overlooked.

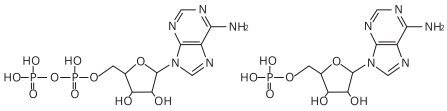
What is ATP?

ATP(adenosine triphosphate)is the primary molecule involved in metabolism in all living organisms.



What is ADP,AMP?

ADP(adenosine diphosphate) and AMP(adenosine monophosphate) are derived from ATP during the processing, such as heat treatment and fermentation.



adenosine diphosphate　　adenosine monophosphate

Kikkoman A3

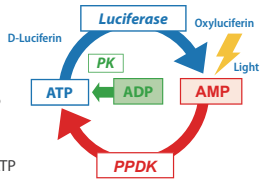
Kikkoman has forever improved the ATP test using Kikkoman A3 that employs advanced chemistry to detect ATP+ADP+AMP to offer higher sensitivity and better detection.

ATP recycling enzyme

PK: Enzyme for the conversion of ADP to ATP
PPDK: Enzyme for the conversion of AMP to ATP

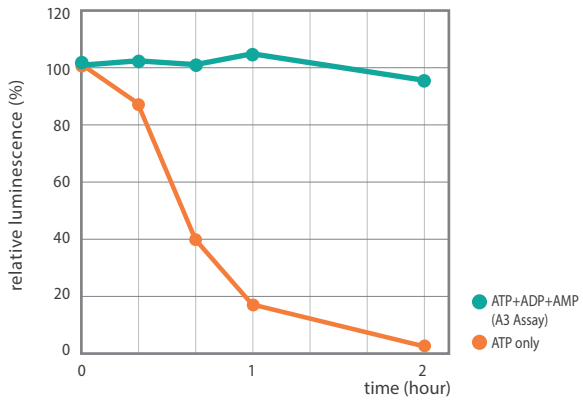
Luciferase

Enzyme for producing light in the presence of ATP



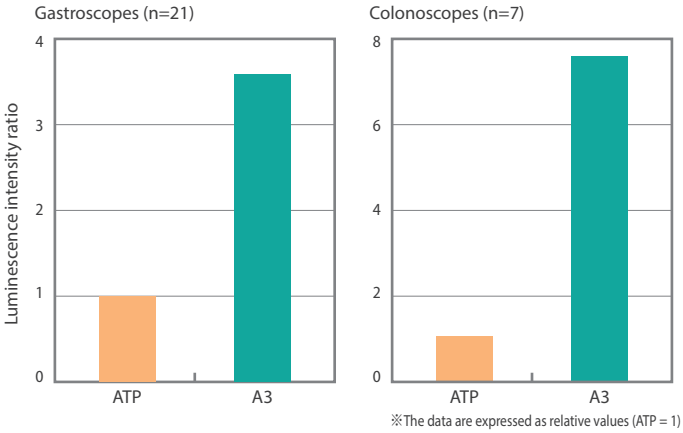
Kikkoman A3– More Reliable and Sensitive

Dilution of blood 10 times in water and samples measured by the Kikkoman A3 and a conventional ATP test.



ATP was degraded dramatically after hemolysis. Yet, the concentration of ATP+ADP+AMP was stable and detected by A3 assay. Kikkoman A3 is a more reliable marker for the detection of blood contamination.

Detection of adenosine nucleotides from Gastroscopes and Colonoscopes immediately after patient use.



※The data are expressed as relative values (ATP = 1)

The detection sensitivity of the Kikkoman A3 on residues derived from gastroscopes and colonoscopes were between 3 and 8 times higher than those of ATP method. Thus, Kikkoman A3is more sensitive for monitoring gastrointestinal endoscope hygiene.

Reference: "Evaluation of the total adenylate (ATP + ADP + AMP) test for cleaning verification in healthcare settings" M. Bakke et al. *J Prev Med Hyg*. 2019 Jun; 60(2)

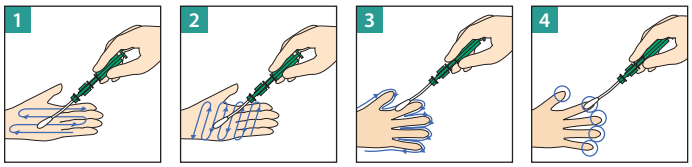
Infection Prevention and Control – Hand Hygiene / Education, Monitoring and Feedback

Test locations, limits and swabbing methods

Test locations	Limits (RLU)	Swabbing methods
▶ Hands and Fingers		
Palm(dominant hand)	2000	Swab the entire palm of the hand over 5-10passes in the left-to-right and up-to-down directions as well as between fingers and the tips of fingers

Kikkoman A3 makes training impressive and encourage handwashing.

Handwashing is primary measure of infection prevention and control.



Infection Prevention and Control – Environmental Cleaning and Monitoring

Test locations, limits and swabbing methods

Test locations	Limits (RLU)	Swabbing methods
▶ Nurses' Station		
Cart	500	Swab the entire surface of each arm
Stethoscope	500	Swab the entire surface of the chest piece
Sphygmomanometer pump	500	Swab the entire surface of the pump
IV pole	500	Swab the entire surface of the handle
Phone receiver	500	Swab the entire surface of surface (inner and outer side)
PC keyboard / mouse	500	Swab the entire surface
Refrigerator(handle)	500	Swab the entire surface of the handle (inner and outer side)
▶ Hospital Ward		
Overbed table	500	Swab each corner and a 10 cm by 10 cm area at the center in all directions
Door handle	500	Swab the entire surface of the handle
Bed side rails	500	Swab 10 cm-wide areas at the three spots (left and right side,center) of the top of the side rails
Nurse call button	500	Swab the entire surface of the button
Remote control	500	Swab the entire suface of the remote control
▶ Medical Equipment		
Touch panel	500	Swab a 10 cm by 10 cm area frequently touched

Evaluation for environmental hygiene focuses on those areas frequently touched by hands, where have high possibility of cross-infection.
It's helpful to improve the cleaning performance.


Bed side rails


Door handle


Remote control


PC


Cart


Touch panel

▶ How to determine the test locations
It is recommended to check the cleanliness level after cleaning.
The areas easily contaminated or difficult to wipe out are good candidates for testing.

Medical and Surgical Instruments Monitoring / Endoscope Verification

Test locations, limits and swabbing methods

Test locations	Limits (RLU)	Swabbing methods
▶ Surgical Instruments		
Parts with uneven surfaces, box locks, and similar parts	100	Swab the surfaces of areas other than those touched by hands
Devices and parts with complicated designs	100	Swab the surfaces of areas other than those touched by hands
▶ Endoscope / Duodenoscope *Temporary benchmark values		
Biopsy port	*100	Swab as far as a cotton swab can be inserted Thoroughly swab the entire inner surface of each channel while turning the cotton swab around
Suction port	*100	
Air and water channels	*100	
Forceps elevator	*100	
Distal end	*100	Thoroughly swab the entire surface of the lens and the area extending approx. 1 cm on the outer sides from the tip
Inner side of biopsy channel(LuciSwab+LuciPac)	*100	Insert LuciSwab from the biopsy port, push the stem and take out from the distal end
▶ Dialysis Room		
Coupler	100	Swab the connectors

It's recommended to test after cleaning (in the dried state).

Monitoring after manual cleaning is recommended.


Forceps elevator


Inside of biopsy channel

Evaluate coupler of dialysis machine.

Hospital Food Service

Test locations, limits and swabbing methods

Test locations	Limits (RLU)	Swabbing methods
▶ Kitchen		
Kitchen knife	200	Swab the entire surface of the blade on both sides and the knife bolster
Cutting board	500	Swab a 10 cm by 10 cm area at the center in the left-to right and up-to-down directions
Handle	200	Swab the entire surface of the handle
Food preparation table	200	Swab a 10 cm by 10 cm area at the center in both the left-to-right and up-and-down directions
▶ Hands and Fingers		
Hands and Fingers	2000	Swab the entire palm of the hand over 5-10 passes in the left-to-right and up-to-down directions as well as between fingers and the tips of fingers

Food borne illnessis one of hospital acquired infections.

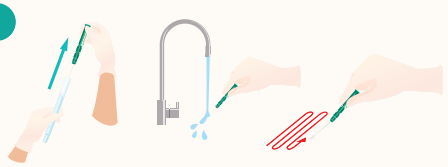
The main cause of food borne illness is secondary contamination due to inadequate cleaning.
Assess cleanliness of kitchenware with ATP Test (Kikkoman A3).

Note: Conduct self-validation and establishing own pass/fail limit is recommended.

Instructions for LuciPac A3 Surface

Allow LuciPac to reach room temperature (20～35°C, 20 minutes) before use.

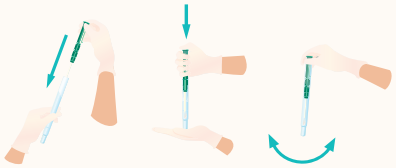
1



Moisten the swab with tap water*1, then swab the sample*2.

*1 Do not use Saline.
*2 Measurement results may not be valid if there is disinfectant such as alcohol or detergent remaining on the surface.

2



Insert the swab back into the main body, then push it down. Shake until the liquid reagent slides down and dissolve powdered reagent.

3

Insert the LuciPac into the chamber of Lumitester to make a measurement. Remove the LuciPac from the Lumitester when the measurement is completed.

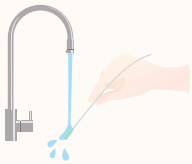
Instructions for LuciSwab

Allow LuciPac to reach room temperature (20～35°C, 20 minutes) before use.

1

Put on powder free gloves. Cut the bag vertically from the notch. Take out the LuciSwab while ensuring that the swab tip does not touch anything.

2



Moisten the swab with tap water*1 if the endoscope is dry.

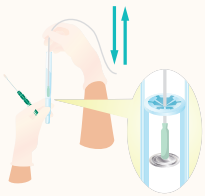
3

Insert the swab from the channel of endoscope. Push the stem and take out from the distal end.

4

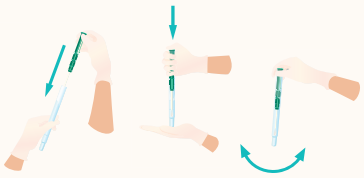
Holding the LuciSwab at 12-13 cm distant point from its cotton bud, remove the sampling stick from LuciPac.

5



Insert the LuciSwab into the main body of the LuciPac, then wash LuciSwab in releasing reagent. Be careful not to break the aluminum seal.

6



Remove the LuciSwab and insert the swab back into the main body, then push it down. Shake until the liquid reagent slides down and dissolve powdered reagent.

7

Insert the LuciPac into the chamber of Lumitester to make a measurement. Remove the LuciPac from the Lumitester when the measurement is completed.

*1 Do not use Saline.
*2 Measurement results may not be valid if there is disinfectant such as alcohol or detergent remaining on the surface.

Lumitester™

Lumitester Smart Product Code: 61234

App Lumitester

Measurement time	10 seconds.
Data output	RLU (Relative Light Unit)
Power	2 alkaline or nickel hydride rechargeable batteries (AA)
Accessories	2 alkaline batteries (AA), Cleaning brush, USB cable, Strap, Quick Manual

※Lumitester is not a medical device.
※Make sure to remove the LuciPac A3 Surface from the Lumitester when measurement is completed. If the Lumitester is stored while the LuciPac A3 Surface is left in the instrument, fluid of LuciPac A3 Surface may leak out and damage the instrument.

※ Do not use this product for purposes other than hygiene monitoring.
※ Lucipac A3 and Lumitester Smart should not be used for counting general living bacteria or detecting specific pathogens.

LuciSwab™

LuciSwab ES Instruction Video

LuciSwab ES 2.0-2.2	Product Code : 60355	40 swabs/kit	Sizes(DxL) 2.0-2.2mmx2500mm
LuciSwab ES 2.8-3.2	Product Code : 60356	40 swabs/kit	Sizes(DxL) 2.8-3.2mmx2500mm
LuciSwab ES 3.7-4.2	Product Code : 60357	40 swabs/kit	Sizes(DxL) 3.7-4.2mmx2500mm

Storage condition	Store at room temperature preventing from high temperature and humidity

*Use in combination of LuciSwab and LuciPac. Other commercial cotton and reagent may not generate accurate results.
*Do not use LuciSwab for the area narrower than swab diameter. Otherwise, the cotton bud might fall off or be stuck in.

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"LuciSwab" are registered trademarks of Kikkoman Corporation in Japan.

※The information contained herein is subject to change without further notice.

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LuciPac™ A3

Kikkoman Case Studies

LuciPac A3 Surface Product Code : 60361 100 tests/kit
LuciPac A3 Water Product Code : 60365 100 tests/kit

Storage condition	2-8°C (Do not freeze) 25°C : 14 days (Unopened) 30°C : 5 days (Unopened)
Expiry	15 months after manufacturing date

※ Use LuciPac A3 for Lumitester Smart , PD-30 or PD-20. Do not use it for other models.

Manufacture

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