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microBYTES™

A Hardy Diagnostics eNewsletter



April, 2020

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Perfect for coronavirus and flu testing...

Hardy's Viral Transport Medium



[Click here to learn more](#) about VTM

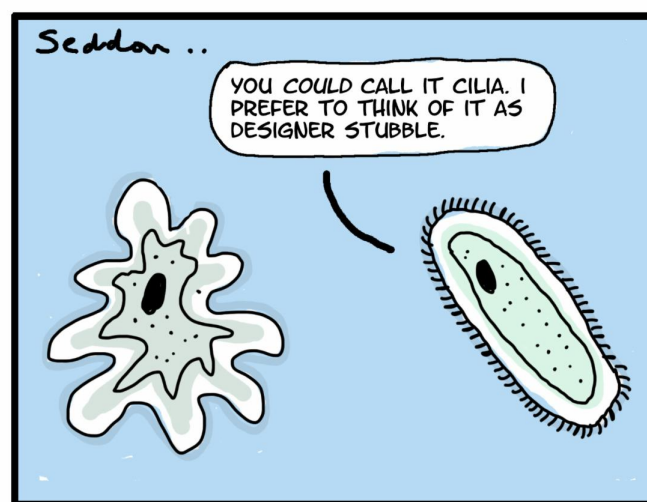
[Click here](#) to view other Covid-19 items.

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Coronavirus/Influenza Catalog.

Now in stock!

Surgical Masks

Micro Musings...



When protozoans show signs of a mid-life crisis.

CartoonStock.com

Will the new coronavirus go away when the weather warms up?





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Now in stock!

AloeSafe hand sanitizing gel



- Contains healing Vitamin E
- Aloe vera for soothing and moisturizing
- Does not cause drying or cracking of skin
- Unique formula that's effective without harsh ingredients
- Does not contain propylene glycol (automobile antifreeze)
- Does not contain sticky glycerin
- Does not contain estrogenic parabens

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This is the question that many are asking, but unfortunately, there is no easy answer.

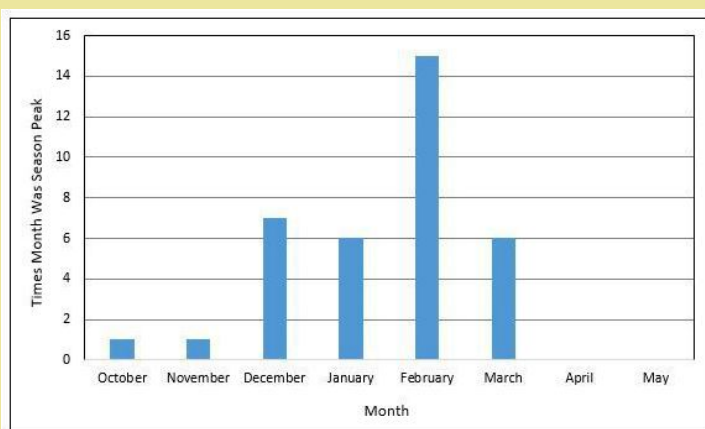
First of all, we have to take a look at why the cold and flu viruses seem to dissipate in the summer months. There are four possible reasons why respiratory viruses are more common in the winter and tend to become less of a problem in the summer.

1. Less Humidity - In the winter the air is colder and drier. This has been proven to favor the viability of the flu virus. However, this may not be a characteristic of the SARS-CoV-2 virus. It has been pointed out that Singapore had larger numbers of infected people, even though it is very close to the equator and more humid than in the North. The droplets from a sneeze or cough do not stay suspended in humid air as long as with dry air, and the warmer temperatures lead to increased virus degradation.

2. More Indoor Activity - In the colder months, people tend to remain indoors, where they are more likely to pass on viral disease. People are more confined and children are together in classrooms during this time. Young people are often asymptomatic carriers of Covid-19. This being the case, it could be that school closures will be of some assistance in controlling the spread of the virus this summer.

3. Weaker Immunity - Vitamin D is involved in many immune functions of the body. During the winter in the Northern Hemisphere, the sun is not high enough in the sky and shining long enough to provide adequate UV-B rays for vitamin D production in the skin, which is usually covered up anyway due to colder temperatures. There is evidence that higher levels of vitamin D help to reduce the incidence of respiratory infection. Whether the novel coronavirus will be inhibited by higher vitamin D levels in the blood remains to be seen.

4. Less Herd Immunity - When a new strain of virus emerges in the winter, the population in general has less immunity at the beginning of the season. As the season progresses, more people develop immunity, which helps to lower the rate at which infections are passed on to others. When the current flu virus is related to previous strains, the season of infection tends to be shorter due to this herd immunity. However, when a novel virus, different from previous ones, appears, the season is prolonged until more people are exposed and become immune.



Peak flu activity in the United States by month for the 1982-1983 through 2017-2018 flu seasons. During this 36-year period, flu activity most often peaked in the winter months. (CDC)

Unfortunately, seasonality does not appear to constrain novel viruses in the same way that it does for the older more familiar viruses. Past coronavirus outbreaks, SARS and MERS, haven't exhibited clear evidence of being seasonal. Contrast that with the H1N1 Swine Flu of 2008, which did adopt a seasonal pattern.

[Click here](#) for a quick look at other Covid-19 items.

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Now in stock!

Face Shields



- Well suited for protection against COVID-19 and other pathogens
- Ideal for healthcare and laboratory workers
- Made from PETG
- Provides clarity of view
- Visors are anti-fogging
- Once size fits most
- Includes a comfortable forehead cushion

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Now in stock!

NP Swabs

A study published in mid-March by researchers from Spain and Finland, found that 95% of infections globally have so far occurred at temperatures between about 28° and 50° F, and in dry climates. This may sound promising, but Malaysia and Singapore were hit hard by the virus and their average temperature is 80° F year round. Clearly, more research and experience with this novel virus is needed.

Marc Lipsitch, PhD, an epidemiologist at Harvard University, summed it up in this statement, *"Based on the analogy of pandemic flu, we expect that SARS-CoV-2, as a virus new to humans, will face less immunity and thus transmit more readily even outside of the winter season. Changing seasons and school vacation may help, but are unlikely to stop transmission."*

Ref: [1](#), [2](#), [3](#), [4](#), [5](#)

* * *

Now available!

Coronavirus Controls



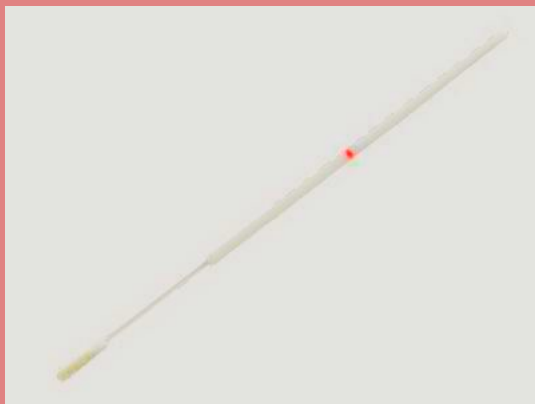
Now there is a synthetic RNA control for performing PCR tests for COVID-19 from MBL.

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Coronavirus Update

As of March 29, 2020, there have been 142,004 confirmed cases and 2,484 deaths due to the novel coronavirus (COVID-19) in the US.

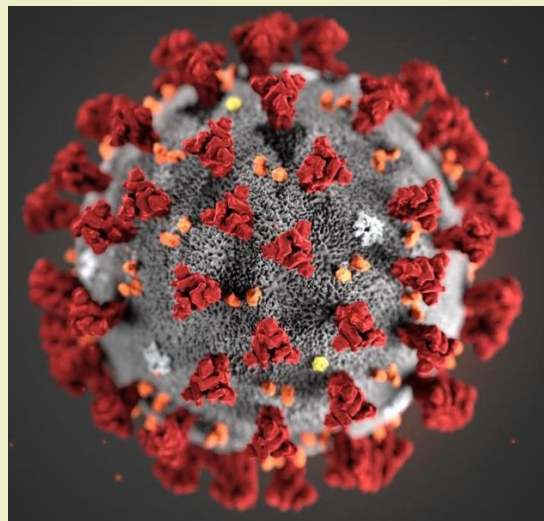


- Mini-tip for nasopharyngeal use
- Flocked swab for superior specimen absorption and release
- Score mark at 100mm for breaking of the shaft
- Individually sterile wrapped
- Ideal for use with Hardy's R99 Viral Transport Medium, and Copan's UTM

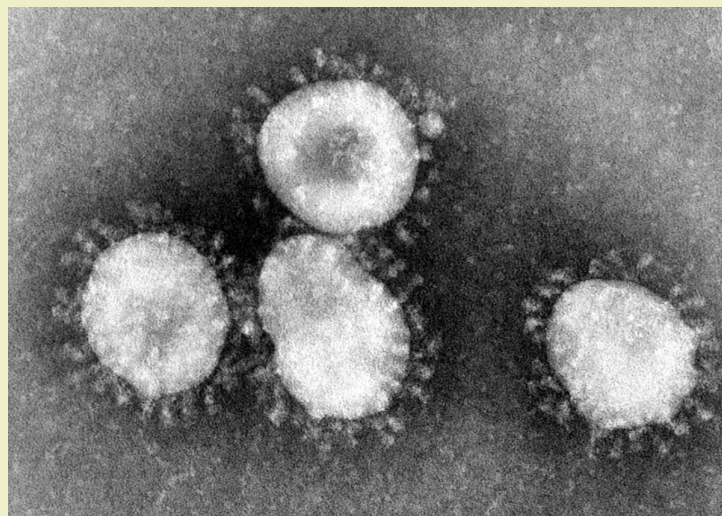
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COVID-19 is an infectious disease caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), a single stranded RNA virus. Coronaviruses are a group of related viruses that cause diseases in mammals and birds. Some types can be lethal, such as SARS, MERS, and COVID-19.



Coronavirus got its name from the crown-like appearance of the club-shaped protein spikes on its outer shell.

The symptoms as reported by China and the WHO are as follows:

- Fever: 88%
- Dry cough: 68%
- Fatigue: 38%
- Coughing up sputum, or thick phlegm, from the lungs: 33%
- Shortness of breath: 19%
- Bone or joint pain: 15%
- Sore throat: 14%
- Headache: 14%
- Chills: 11%
- Nausea or vomiting: 5%
- Stuffy nose: 5%
- Diarrhea: 4%
- Coughing up blood: 1%
- Swollen eyes: 1%

Now there's an easy way to detect carbapenem resistance...

CARBA 5



Hardy's new Carba 5 detects the five major bacterial enzymes of carbapenem resistance. This new lateral flow device gives you results in only 15 minutes at a price much much lower

than PCR! This simple kit tests for the presence of the active enzymes, not just the presence of the gene.

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[Learn more...](#)

[Press release...](#)

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CryoSavers

for long term freezer storage



Learn about our complete selection of freezer vials.

View the CryoSaver catalog.



The CDC has recently published [guidelines](#) for specimen collection and testing for coronavirus. For culture and PCR testing a [viral transport media](#) is recommended.



Helpful Links

- [Up to the minute data on worldwide cases of COVID-19](#)
- [New cases, recovered cases, and deaths by country](#)
- [Updates from the CDC](#)
- [CDC advice for patients](#)

* * * * *

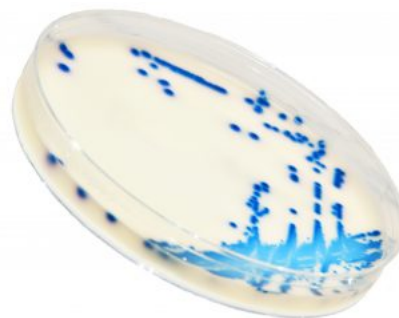
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Control Organisms



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HardyCHROM CRE



Our new, FDA-cleared, chromogenic media for Carbapenem-Resistant Enterobacteriaceae

of over 900 ATCC derived microorganisms
for use in Quality Control procedures.

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Zerbaxa and Avycaz now available!

New Antibiotics

KB Disks Now Available from Hardy



- Imipenem/Relebactam, "Recarbio" (Z9441, Z9445)
- Eravacycline, "Xerava" (Z9401, Z9405)
- Plazomicin, "Zemdri" (Z9331)
- Ceftazidime/Avibactam, "Avycaz" (Z9351, Z9355)
- Ceftolozane/Tazobactam, "Zerbaxa" (Z9341, Z9345)
- Delafloxacin, "Baxdela" (Z9301, Z9305)
- Meropenem/Vaborbactam, "Vabomere" (Z9321, Z9325)
- Omadacycline, "Nuzyra" (Z9411)
- Lefamulin, "Xenleta" (Z9451, Z9455)

HardyDisks:

- Are compatible with all BD Disk dispensers.
- Feature "last disk recognition" so you know when a refill is needed.
- Include all traditional and newer antibiotics.

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[View](#) our AST mini-catalog.

What the FDA is doing about the shortages...

Tests for COVID-19



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[Request](#) free samples.

[Order](#) HardyCHROM CRE.



* * * * *

PathFinder Listeria



"The green glow will let you know..."

Hardy's new test for environmental Listeria will eliminate most false positives and quickly give you results, as seen by a green glow!

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The outbreak of the novel coronavirus SARS-CoV-2, the causative agent of the COVID-19 pandemic, has disseminated across the globe, spanning 176 countries and regions. Since its discovery in late 2019, and at the time of writing (March 27, 2020), this infectious disease has been transmitted to over 600,000 (confirmed) individuals, claiming more than 27,000 lives (1).

When the first COVID-19 case was identified in the United States, the CDC was the only entity with the capacity to test and identify this particular novel virus strain (2). However, the CDC could not issue enough tests-to laboratories designated by CDC as qualified-or process samples fast enough for the entire country.



Fortunately, under section 546 of the Federal Food, Drug, and Cosmetic Act (FD&C Act), the FDA Commissioner may allow the commercial sale and use of unapproved medical products to be used in an emergency to diagnose, treat, or prevent serious or life-threatening diseases when no other alternatives are available. Under this section, the FDA can further strengthen the nation's public health protections against Chemical, Biological, Radiological, and Nuclear (CBRN) threat agents as a result of the Emergency Use Authorization (EUA) authority (2,3).

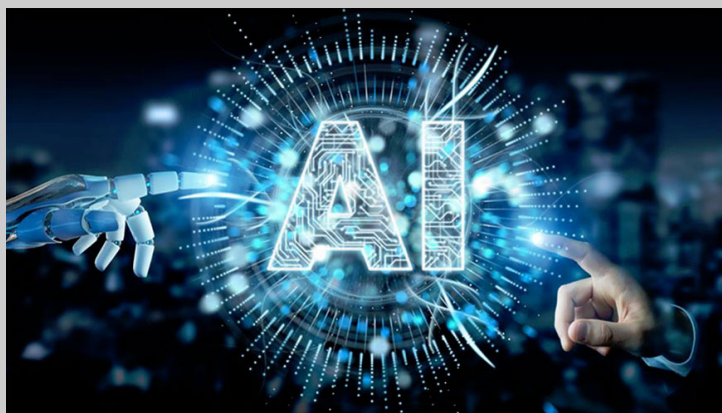
On February 4th, 2020, the Secretary of Health and Human Services (HHS) made the declaration of a public health emergency, justifying the need to accelerate access to diagnostic testing for the rapid detection of SARS-CoV-2 (4).

In light of this public health emergency, the FDA's EUA authority has already paved way for 16 laboratory and commercial manufacturers to make *In vitro* diagnostic products available, including the CDC's "CDC 2019-Novel Coronavirus (2019-nCoV) Real-Time RT-PCR Diagnostic Panel" test kit (2).

Unfortunately, as case numbers in the United States continue to rise, test scarcity is still an omnipresent issue. Institutions across the country are forced to limit the issuance of COVID-19 diagnostics in an effort to preserve these vital and limited resources. As a result, many patients are turned away unless they meet a set of stringent criteria during an evaluation by a licensed physician. In turn, this can lead to official underreporting, which can fail to highlight the magnitude of the problem at hand.

In addition, the types of tests that are available are molecular diagnostics, which typically require 24 to 48 hours time-to-result. Furthermore, not every clinic is equipped to process these specimens; samples must be sent to reference laboratories, delaying the test results.

The new drug, Halicin, was developed by a computer



Enlisting AI for Drug Discovery

Bacteria are becoming more resistant to drugs while pharmaceutical companies are slowing their antibiotic research. Due to low profits and high time consumption, there are fewer drugs discovered and manufactured by drug companies. (1) Methicillin-resistant *Staphylococcus aureus* (MRSA), carbapenem-resistant Enterobacteriales (CRE), and multidrug-resistant *Pseudomonas aeruginosa* infections are a major concern with limited treatment options. Treatment is difficult when fewer effective drugs remain and companies are unwilling to invest in developing antibiotics that will quickly become inactive against pathogens.

Recognizing the lull in upcoming antibiotics to treat resistant bacteria, a team at MIT taught a machine to search for antibiotic candidates. This artificial intelligence (AI) computer generated millions of future possible antibiotics based on their molecular structures and distinction from current antibiotics. The basis for this algorithm is recognizing novel structures, instead of synthesizing different beta-lactams. As a result, bacteria will have no existing resistance mechanisms.

The machine discovered an especially promising antibiotic called Halicin, which was initially used to treat diabetes. Halicin was named after the dastardly computer depicted in the movie, *2001: A Space Odyssey*.



Halicin has successfully killed CRE isolates from patients and treated *Clostridium difficile* and *Acinetobacter baumannii* infections in rats. (2)

Halicin showed remarkable activity against drug-resistant strains of *Clostridium difficile*, *Acinetobacter baumannii*, Methicillin Resistant *S. aureus*, and *Mycobacterium tuberculosis*, with an unusual mechanism of action involving the sequestration of iron inside the bacterial cells, that thereby interferes with their ability to

In an effort to conserve these confirmatory molecular methods, there has been an increasing demand for rapid diagnostics to help screen suspected cases. From these initial screenings, healthcare workers can assess the need to administer a confirmatory test effectively reducing the unwarranted use of limited resources. Reducing the volume of tests administered can reduce the workload of clinics and reference laboratories alike, conserves precious test materials, and also helps to reduce test result turnaround time (4).



On Tuesday, March 24th, Hardy Diagnostics announced the release of the Anti-SARS-CoV-2 Rapid Test* to help contribute in the fight against the global pandemic. This is a 15 minute test for the patient's antibodies and it requires no equipment or special training.

If you'd like to learn more about this diagnostic tool and the initiatives Hardy Diagnostics is taking to combat the novel coronavirus, please [click here](#).

* Hardy Diagnostics has permission to sell this test under the FDA's Emergency Use Authorization (EUA) program, which is currently under review.

Ref: [1](#), [2](#), [3](#), [4](#)



Andrew Kravariotis
Business Development Specialist
HARDY DIAGNOSTICS

* * * * *

Phraseology...



regulate the pH balance across the cell membrane properly. Since this is a different mode of action from most antibiotics, Halicin retained activity against bacterial strains resistant to many commonly used drugs.

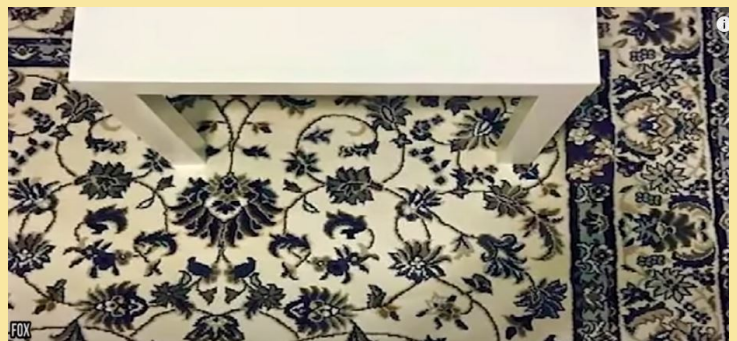
Preliminary studies suggest that Halicin kills bacteria by disrupting their ability to maintain an electrochemical gradient across their cell membranes. This gradient is necessary, among other functions, to produce ATP (molecules that cells use to store energy); if the gradient breaks down, the cells die. This type of killing mechanism could be difficult for bacteria to develop resistance.

Patients with a positive reading on [HardyCHROM MRSA](#), [HardyCHROM CRE](#), or [NG-Test CARBA 5](#) may soon be treated with Halicin. The artificial intelligence technology has great potential to treat more patients by cutting down the time and money it takes to identify active compounds. Halicin and other AI-derived drugs can save lives that would be in jeopardy if sole dependence on pharmaceutical companies continues. This encourages further development and investment in efficient antibiotic progress against ever-evolving bacteria.

Ref: [1](#), [2](#)

Elizabeth Smith
Technical Support Microbiologist I
HARDY DIAGNOSTICS

Optical Oddities



This is a tough one!
Can you find the cell phone in this photo?
(hint: there are flowers on it)

Scroll to bottom to find out where it is...

"Believe half of what you see and none of what you hear"
Benjamin Franklin

**Trio Bas
Air Samplers**

Pull the Wool Over Your Eyes

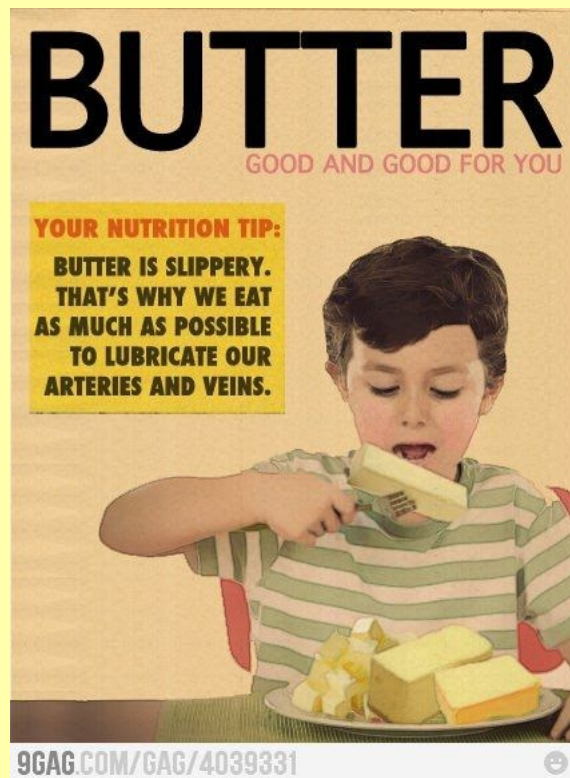
This phrase, which means to deceive someone, derives from the wearing of woollen wigs, which were fashionable for both men and women in the 16th and 17th centuries. The phrase itself is of 19th century American origin. The earliest example of it in print can be found in the Gettysburg newspaper The People's Press, in 1835.

The tradition has continued in Europe where the judiciary of several countries still wear wigs in court. Not so in the USA, where the third president Thomas Jefferson (president between 1801 - 1809), although a wig wearer himself, advised the judiciary there:

"For Heaven's sake discard the monstrous wig which makes the English judges look like rats peeping through bunches of oakum."

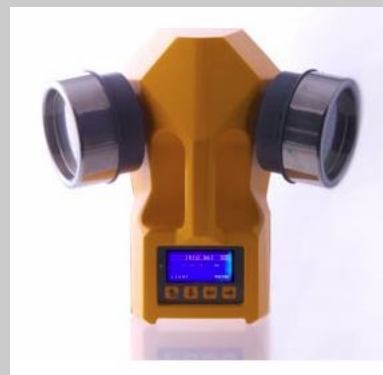
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Strange ads from the past...



* * * * *

Wisdom to Ponder...



Two heads are better than one!

Now with Bluetooth capability!

Trio Bas from Orum International has a robust impact air sampler for every type of use. Single, double, or triple heads are available from Hardy Diagnostics.

- [Watch a short video](#) that will explain why the Trio Bas is the best choice for your clean room.
- [See the complete Trio Bas catalog.](#)
- [Please have a sales rep contact me](#) about air samplers.

Testimonial from a Pharmaceutical Lab worker...

"The two heads of TRIO BAS DUO air sampler was one of the best investments we made during the last two years. The laboratory staff, which is responsible for the bacteriological sampling, is able to double the number of environmental microbial cycles per day. This means more efficiency and lower cost, together with the possibility to increase the number of sampling in other areas of the premises in the future."

* * *

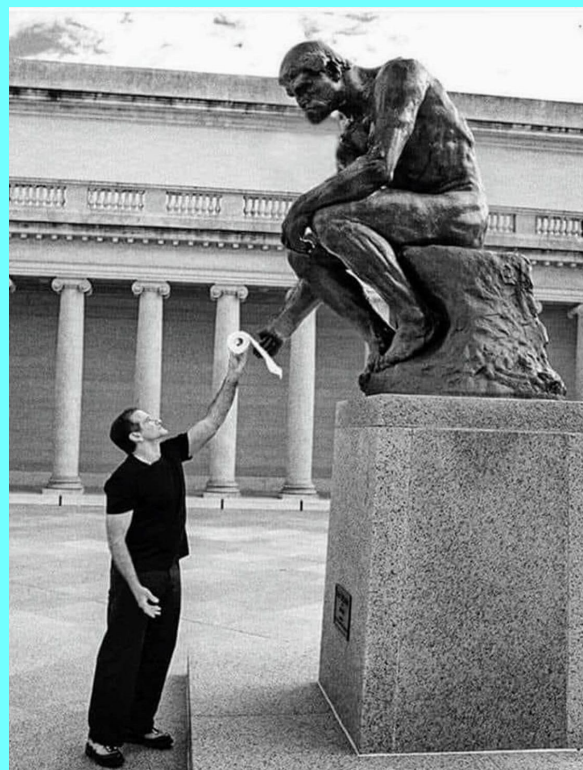
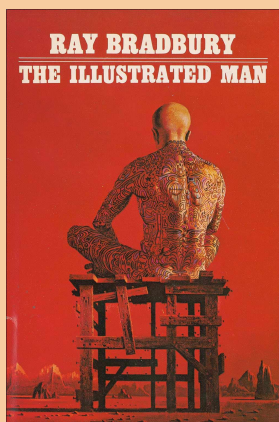


Ray Bradbury

1920 ~ 2012

One of the most famous and celebrated authors and screenwriters of the 20th and 21st centuries. He worked in a variety of genres, including fantasy, science fiction, horror, and mystery fiction. His most famous works include: Fahrenheit 451 (1953), The Martian Chronicles (1950), The Illustrated Man (1951), and I Sing the Body Electric (1969), Dandelion Wine (1957) and the fictionalized memoir Green Shadows, White Whale (1992).

- Sometimes you just have to jump out the window and grow wings on the way down.
- You can make yourself happy or miserable - it's the same amount of effort.
- Looking back over a lifetime, you see that love was the answer to everything.
- We are cups, constantly and quietly being filled. The trick is knowing how to tip ourselves over and let the beautiful stuff out.
- Treasure this day and Treasure yourself, truly, neither will ever happen again.
- Don't worry about things. Don't push. Just do your work and you'll survive. The important thing is to have a ball, to be joyful, to be loving and to be explosive. Out of that comes everything and you grow.
- Love is the answer to everything. It's the only reason to do anything.
- Learning to let go should be learned before learning to get. Life should be touched, not strangled.
- Love what you do and do what you love. Don't listen to anyone else who tells you not to do it. You do what you want, what you love. Imagination should be the center of your life.



Robin Williams must have known that one day we would appreciate this photo!

Do you perform colony counts?



Compact Dry

- Self-diffusing of sample - No spreader needed
- Room temperature storage
- Rigid plate with removable lid
- Stackable plates to conserve space
- Many media formulas available

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[Request Samples of Compact Dry](#)

- Get rid of those friends of yours who make fun of you and don't believe in you. And when you leave here tonight, go home, make a phone call and fire them. Anyone that doesn't believe in you and your future, to hell with them.
- Stuff your eyes with wonder, live as if you'd drop dead in ten seconds. See the world. It's more fantastic than any dream made or paid for in factories.

* * *

HUrBi



Quick and easy detection of urinary pathogens.
This bi-plate will separate Gram positive and yeast on one side and Gram negatives on the other.

[Find out more...](#)

[Request samples.](#)

What is Hardy all about?

[View a short video to find out...](#)



*Did you know Hardy Diagnostics
is 100% owned by its employees?*

* * *



Now Available!

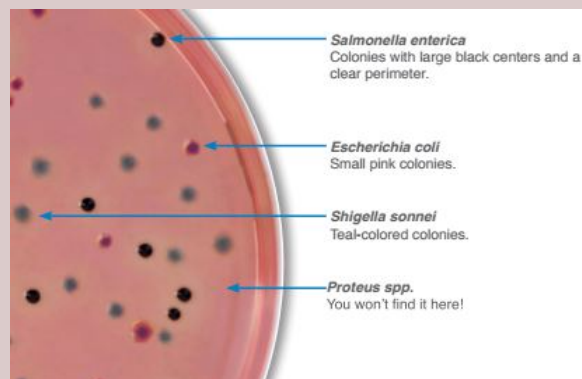
The Wizard is an automated Compact Dry plate reader that will perform colony counts within seconds!

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* * * * *

*Stool cultures with no
interference from Proteus!*

HardyCHROM SS NoPRO



NOTE: New study shows **50% less colony work-ups**, for an overall **cost savings of 80%!**

[Find out how you can save also...](#)

- Reduces costly false-positive work-ups due to *Proteus* spp.!
- Less colony picking, subculturing, and identifications
- No need for TSI, LIA, or KIA tubes
- Reduces use of expensive ID cards
- Reduces the number of plates for primary stool setup

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- Increased specificity
- Easy identification by patented chromogenic reaction
- The only chromogenic media that will detect both *Salmonella* and *Shigella*

Learn more about HardyCHROM SS NoPRO.

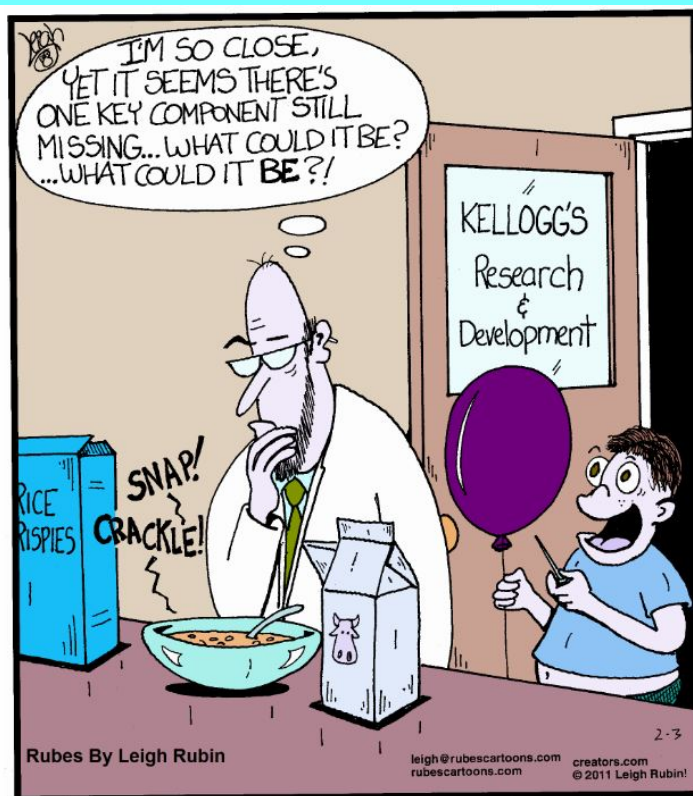
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* * * * *

RUBES

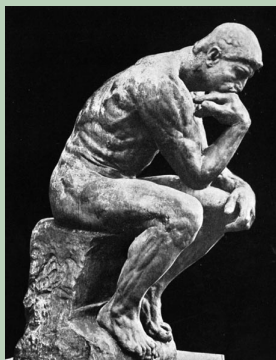


**How Bring Your Kid to Work Day
inadvertently altered the course of
breakfast history**

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Want to [book Leigh](#) as a speaker at your next event?

Think about it...



~ Have you ever imagined a world with no hypothetical situations?

~ How does the guy who drives the snowplow get to work in the mornings?

Warning:

**PUN ZONE
AHEAD**

~ If 7-11 is open 24 hours a day, 365 days a year, why are there locks on the doors?

~ If a cow laughed real hard, would milk come out her nose?

~ If nothing ever sticks to Teflon, how do they make Teflon stick to the pan?

~ If you tied buttered toast to the back of a cat and dropped it from a height, what would happen?

* * *

Online Ordering Made Easy!



Watch a short video to learn how easy it is to order from Hardy on-line!

**Pick... Click...
And your order is on its way!**

* * *

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Hardy Diagnostics...

- Manufactures over 2,700 microbiology products for you to choose from.
- Stocks a total of 13,000 laboratory products for your "one-stop shop" experience.
- Is celebrating its 40th year of serving microbiologists.
- Manufactures from two ISO certified factories; one in California and one in Ohio.
- Maintains nine distribution centers in the U.S. for faster turn-around-time to your lab.
- Is ISO 13485 certified for the manufacture of medical devices to give you confidence in our products.
- Services over 10,000 labs and maintains a worldwide network of over 80 distributors.



~ I went to put on my camo pants this morning, but I couldn't find them!

~ I went to a seafood disco last week... and pulled a mussel.

~ What do you call a fish with no eyes? A fsh.

~ Two fish swim into a concrete wall. The one turns to the other and says, "Dam!"

~ Deja Moo: The feeling that you've heard this bull before.

#



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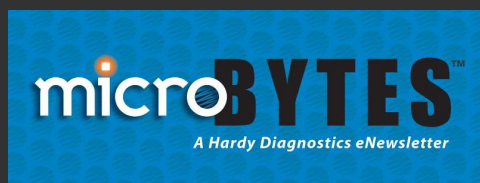
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StrepPRO Rapid latex agglutination



Type your Streps within minutes!

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New Face Mask



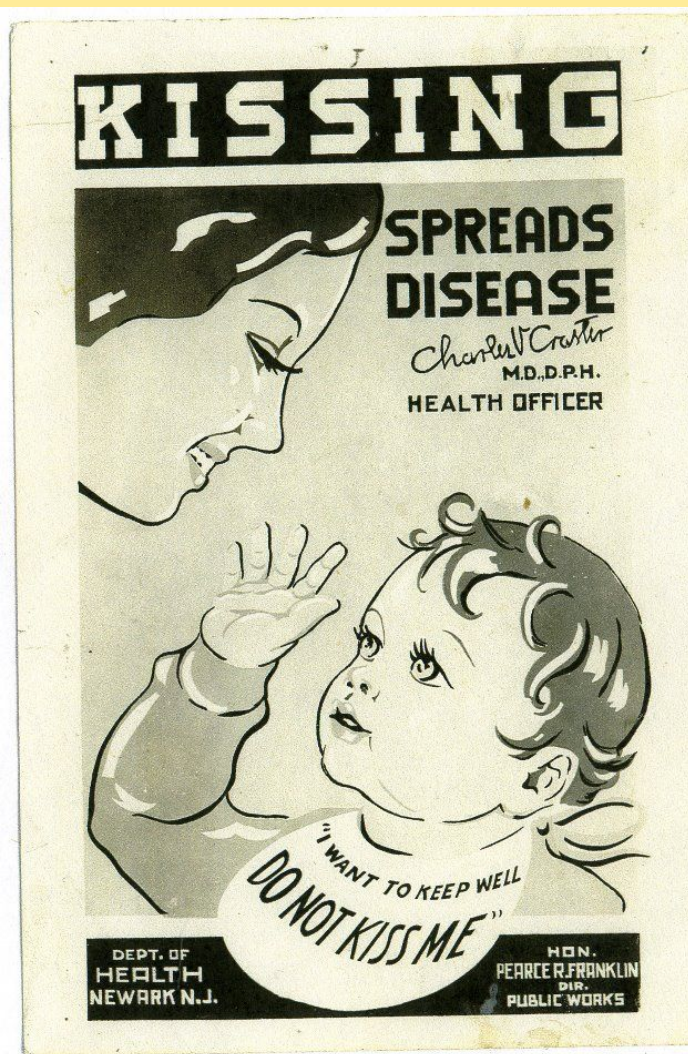
For your ordering convenience!

Available at
amazon



*Sometimes we act like we own the place...
Because we do!*

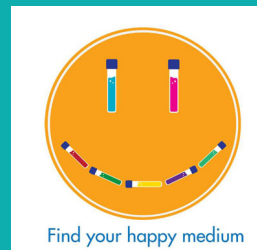
Vintage public health ads...



Did you know that of the 2,700 products that Hardy makes, 700 of them are now available on Amazon?



[Discover some of them here...](#)



HARDY
DIAGNOSTICS

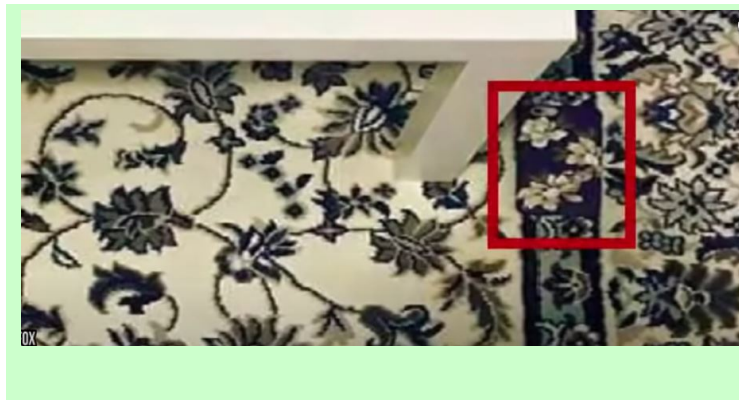
"As Hardy Diagnostics approaches its 40th year of serving microbiologists in the laboratory, I would like to thank each of our customers for their support and loyalty. It truly has been a pleasure to serve you!

If there is any way we can improve or expand upon our service, would you please let me know?"

Jay Hardy, CLS, SM(NRCM)
President
HARDY DIAGNOSTICS

[Send Jay a message...](#)





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