

IDEA BIO-MEDICAL'S IMAGING SYSTEM SUPPORTS GLOBAL SCIENTISTS IN THEIR MEDICAL RESEARCH

They say that one picture is worth a thousand words. When it comes to cell biology research, you might say that one image is worth a thousand experiments, in terms of the data and insights that can be extracted from a single image.

IDEA Bio-Medical developed a breakthrough, high quality imaging system called **WiScan® Hermes**. The system is being used for image-based cell biology assays by research institutions and medical centres in the USA, around Europe and in Israel.

WiScan® Hermes imaging system assists scientists from various fields of medical research in their journey to understand physiological systems and processes and develop new treatments and therapies for various medical conditions.



Here we provide some examples for how **WiScan® Hermes** imaging system was applied to study diseases and medical conditions such as Obesity, breast cancer and AIDS/HIV.

OBESITY RESEARCH IN USA: OIL SPILL STUDY RAISES 'RED FLAG' ABOUT COMMONLY-USED COMPOUND

CHARLSTON, SC. A group of **Hermes** users who studies obesity in the Medical University of South Carolina (MUSC) recently published a paper in the journal Environmental Health Perspectives, which is published by the National Institute of Environmental Health Sciences. The study, titled "*Effects of Crude Oil/Dispersant Mixture and Dispersant Components on PPAR γ Activity in Vitro and in Vivo: Identification of Dioctyl Sodium Sulfosuccinate (DOSS; CAS #577-11-7) as a Probable Obesogen*" ([link](#)), found a commonly-used chemical known as DOSS (dioctyl sodium sulfosuccinate), an ingredient in the dispersant used to clean up the Deepwater Horizon oil spill, is likely an obesogen. An obesogen is a compound that potentially contributes to obesity in people and wildlife. The second major finding of this study is how commonly used this compound is, including in laxatives, some flavored soft and fruit drinks, homogenized milk and many personal care products. Because cellular processes are microscopic and complex, researchers engineered the cells to literally light up if a chemical caused a specific change. Microscopic images taken by **Hermes** imaging system during the study showed DOSS increased fat differentiation in these cells.

This group recently published another study citing **Hermes** imaging system, titled "*The commonly used nonionic surfactant Span 80 has RXR α transactivation activity, which likely increases the obesogenic potential of oil dispersants and food emulsifiers*" ([link](#)).

For more info, visit the [press release](#).

BREAST CANCER RESEARCH IN USA: VCU BREAST CANCER TUMOR STUDY YIELDS PROMISING RESULTS IN PHASE ONE

RICHMOND, Va. A group of **Hermes** users under the leadership of Dr. Paul Dent, Scientist at VCU (Virginia Commonwealth University) Massey Cancer Center, tested two drugs to shrink breast cancer tumors. By themselves, the drugs didn't produce results, but together, the outcome has been promising. Researchers found that using the drug combination of Sorafenib and Pemetrexed creates a synergy of killing, by Stimulating the autophagy process-the eating process. The results of the first trial had a 61% response rate, something researchers and patients alike found promising - especially a patient in the trial who had breast cancer. Because the drug combo results are so promising, phase two of the trial has begun at Massey. Doctors are focused on triple-negative breast cancer, which is traditionally the most difficult kind of breast cancer to treat.

For more info on this study, visit the [press release](#).

Dr Dent's team is highly active and regularly publishes papers citing the **Hermes** imaging system. Publications from the past year include "*Rationally repurposing Ruxolitinib (Jakafi®) as a solid tumor therapeutic*" ([link](#)) and "*PDE5 inhibitors enhance the lethality of pemetrexed through inhibition of multiple chaperone proteins and via the actions of cyclic GMP and nitric oxide*" ([link](#)).

HIV/AIDS RESEARCH IN UK: STUDY SHOWS HOW HIV BREACHES MACROPHAGE DEFENCES, COULD BE STEP TOWARDS CURE

LONDON, UK. In a new study, a group of **Hermes** users from the University College London (UCL) have identified how HIV is able to infect macrophages, a type of white blood cell integral to the immune system, despite the presence of a protective protein. In their paper, titled "*A G1-like state allows HIV-1 to bypass SAMHD1 restriction in macrophages*" ([link](#)), the researchers found that although macrophages have a protein that shields human immunodeficiency virus (HIV), the virus is able to make it past the defense. They discovered a treatment that can maintain macrophage defenses which could be a key part of the puzzle of reaching a complete cure for HIV/AIDS. The researchers reached these findings by employing a high-throughput single-cell co-localization analysis with the **Hermes** imaging system.

For more info on this study visit the [press release](#).

This group published another paper citing **Hermes** imaging system in *Nature* journal, titled "*HIV-1 evades innate immune recognition through specific cofactor recruitment*" ([link](#)). In this study, the group discovered a molecular invisibility cloak that enables HIV, the virus that causes AIDS, to hide inside cells of the body without triggering the body's natural defense systems. Their study shows how 'uncloaking' the virus using an experimental drug triggers an immune response that stops the virus from replicating in cells grown in the laboratory. The findings could lead to new treatments and help to improve existing therapies for HIV infection.

For more info on this study visit the [press release](#).