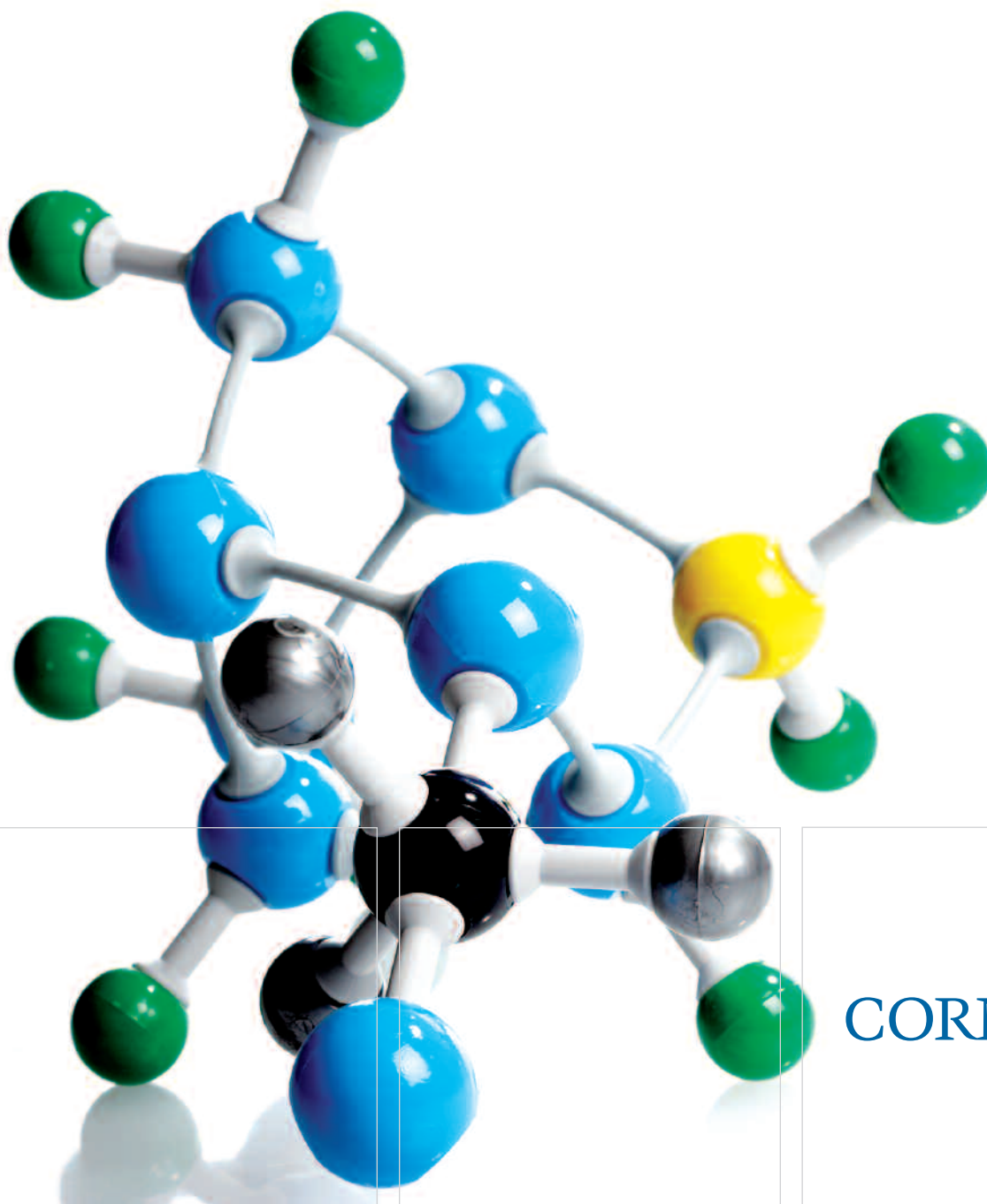


Life Sciences

# Possibilities Made Real

Johns Hopkins



CORNING

## Corning's Epic® system helps researchers unlock secrets at the cellular level.

## Johns Hopkins

### The Challenge

In the quest to discover new life-saving drugs, many pharmaceutical companies use drug discovery research generated at Johns Hopkins University. As one of the world's top research institutions, Johns Hopkins needed alternatives to traditional drug-screening technologies to provide more accurate test results. Many of today's high-throughput screening methods involve the attachment of fluorescent or radioactive markers — known as “labels” — which can interfere with the biomolecular interaction being observed and subsequently lead to false positives or false negatives. In addition, these technologies can require the use of engineered cells, instead of native ones, which can also lead to misleading results. Without high-throughput screening solutions that would provide the most relevant and accurate information, Johns Hopkins researchers were at risk of not being able to accelerate, or even maintain, their pace of drug discovery research.

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### The Breakthrough

Corning combined its deep understanding of optics, material sciences and biology to create the Epic® system, a screening technology that detects both biochemical and cellular interactions in high-throughput without the use of labels. The Epic system incorporates novel optical biosensors into an industry-standard microplate format and includes an optical microplate reader that can be used to screen up to 40,000 drug compounds in a single eight-hour period. With illumination from broad-band light, the biosensor in each well of the microplate reflects a specific wavelength of light. When an interaction takes place between a drug compound and a disease-related protein, the Epic reader detects a shift in the reflected wavelength.

Because the Epic system eliminates the use of labels, it offers a wider breadth of application than other technologies, making it possible for scientists to study interactions and cellular pathways they would not otherwise be able to observe.

### The Impact

Since integrating the Epic system into its High Throughput Biology Center in 2005, Johns Hopkins has pushed the technology into new frontiers within drug discovery research. Scientists have not only successfully used the system for high-throughput screening of endogenous cells, but have also used it to observe interactions that previously could not be detected using other screening technologies.

The system is credited with accelerating Johns Hopkins' body of understanding on how viruses attack and impact cells—and was a factor in Johns Hopkins' 2007 designation as a Level 3 Virology Lab.

