GenNext TECHNOLOGIES

# Revolutionizing Protein Higher Order Structural Analysis

Products and services for Hydroxyl Radical Protein Footprinting (HRPF) to accelerate biopharmaceutical/biosimilar development and protein conformational research.

## FOX™ Photolysis System

### *Laser-free Fast Photochemical Oxidation of Proteins (FPOP) HRPF*

GenNext has pioneered a superior, compact, cost-effective, and safe means of performing FPOP/HRPF analysis by replacing expensive, complicated, and hazardous lasers with our proprietary Flash Oxidation (FOX) System in a convenient benchtop format.

Our proprietary high energy plasma photolysis source creates impressive OH radical loads at a fraction of the cost. Our FOX Photolysis System photo-catalyzes the creation of OH radicals from $H_2O_2$ in a highly controlled and cost-effective manner.

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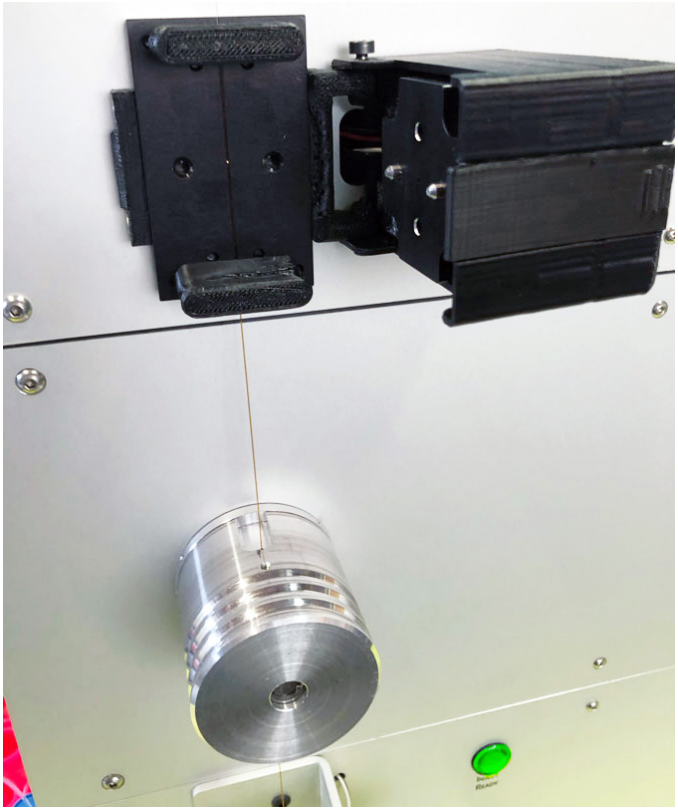
# FOX™ Radical Dosimeter

## *Precisely measure hydroxyl radical concentration*



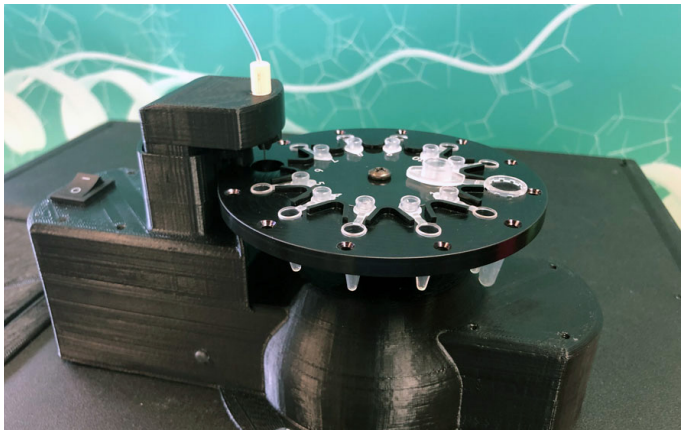
Superior reproducibility is achieved with the FOX Radical Dosimeter—the world's first OH radical measurement system that automatically controls the generation of effective OH radical concentration in the face of unpredictable and varying background scavenging.

The Dosimeter delivers near real-time measurement of OH radical concentration, making it simple to detect problems with biopharmaceutical solutions or assay conditions before mass spectrometric analysis is performed, vastly improving HRPF ease-of-use while simultaneously ensuring labeling confidence and fidelity.

The FOX Radical Dosimeter is an in-line capillary UV photometer located immediately downstream of the FOX Photolysis System. Real-time photometric absorbance measurements during radical production are produced, enabling the assessment of effective hydroxyl radical concentration.

# FOX™ Automated Product Collector

## *Automatically collect and deposit labeled samples*



The FOX Automated Product Collector is an easy-to-use compact device that automatically collects and deposits labeled sample into designated microtubes, eliminating sample collection workload while delivering maximum product purity.

The Collector is controlled by the same software program that also coordinates the functionalities of the Photolysis, Radical Dosimeter, and integrated microfluidics systems. This unified software eliminates the need to monitor photolysis processing time to insure proper collection of labeled product without undue introduction of unlabeled sample.

User selected product volume is precisely delivered to collection tubes containing quenching solution, enabling reproducible and predictable quenching for each labeled sample.

# FoxWare™ Protein Footprinting Software

## *Easily perform comparative HOS analysis*

Present day bioinformatics and data processing bottlenecks are eradicated by GenNext FoxWare Protein Footprinting Software—specifically tailored to address the data processing demands of HRPF HOS analysis.

Data processing of HRPF results can be agonizingly laborious. Up until now, researchers have been compelled to use a piecemeal approach, arduously stitching together results from multiple proteomics data analysis packages and manually manipulating data in home-brew spreadsheets. Further, while broad in scope, today's proteomics data analysis products fail to adequately inform and fully address specific workflow, chemical labeling/artifacts, and comparative study requirements of HRPF HOS analysis. To address these shortcomings, GenNext Technologies introduces FoxWare Protein Footprinting Software, the first commercial software exclusively tailored for FPOP HRPF HOS data analysis.

In contrast to broad-based, multi-purpose platforms, FoxWare HRPF Protein Footprinting Software specifically and aptly addresses the data processing demands of HRPF HOS analysis. The software is completely compatible with both our FOX Flash Photolysis and laser-based FPOP HRPF studies. Intuitive algorithms enabling qualitative and quantitative comparative studies of HOS footprint inform and address key requirements in biopharmaceutical and biosimilar research.


# FOX™ HRPF Accessories

## *Modules and software for lab-built HRPF systems*

For pioneering scientists currently employing lab-made HRPF instruments, GenNext offers a series of accessories to accelerate your research:

- Radical Dosimeter Module
- Product Collector Module
- Module Controller
- FoxWare Protein Footprinting Software

GenNext's Radical Dosimeter and Product Collector modules are specifically designed to enable convenient integration with existing HRPF setups.

Their small footprint enables the Dosimeter and Collector modules to be easily mounted on optical breadboards directly in-line with existing HRPF capillary systems. The Radical Dosimeter is placed immediately downstream of the laser photolysis region and the Product Collector receives the terminal end of the system's capillary.

Under software control, our Module Controller automates the entire HRPF process for more reproducible results. The Module Controller coordinates the activities of all of your GenNext components, including the FOX Dosimeter and Product Collector, as well as your system's laser and syringe pump.

The near real-time dosimetry allows users to monitor effective labeling before MS analysis, saving time, money, and precious sample. Each labeling experiment can be performed flawlessly without the deleterious impact of uncontrolled scavenging or human error.

After MS analysis, labeling results and HOS can be evaluated in minutes with FoxWare Protein Footprinting Software.

# FOX™ Services Program

*Fast and cost-effective access to FOX technology*

Use our services offering to access our proprietary HRPF technology to solve valuable and intractable problems—while constraining upfront costs and risk—as you evaluate the impact of FOX HOS on your reseach.

- **Validation:** Test the impact of FOX HOS analysis
- **Low risk:** Easy and cost-effective adoption pathway
- **Gain competency:** Emerge as a leader in HOS research

Let our team demonstrate how the GenNext FOX platform can trasform your biopharmaceutical research by taking the first step with an Early Access Services Program for:

**Differential protein HOS studies**

- Biosimilar-originator
- Expression platform
- Formulation

**Protein-interaction HOS studies**

- Antibody-antigen epitope and paratope mapping
- Protein-ligand interaction
- Protein-protein interaction
- Receptor-drug interaction

Each program is tailored to meet your HOS analytical needs employing an affordable fee-for-service structure. Using a research collaboration model, we will define a specific multi-phase approach that facilitates timely turnaround of valuable research data. Regularly scheduled checkpoints enable collaborative review of experimental results and further program refinement.

Service clients also qualify for priority instrumentation access at preferential pricing when ready to bring the analytical power of FOX technology in-house.


GenNext has pioneered a superior, compact, cost-effective, and safe means of performing advanced FPOP HRPF analysis. By replacing expensive, complicated, and hazardous lasers with our proprietary Flash Oxidation System, you can easily perform HRPF with a convenient benchtop instrument.

# Discover the Benefits of HRPF

Contact us to accelerate your biopharmaceutical and biosimilar development and protein conformational research.

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