



**Department of Radiation Oncology  
Free Radical and Radiation Biology Program**

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**FY 2024-2025 RADIATION AND FREE RADICAL RESEARCH SERVICES AND RATES**  
(Director overall responsible to CCOM/HCCC/P30 CCSG – Douglas R. Spitz, PhD)  
**Effective Date: October 1, 2024**

**General Fees:**

**Consult Fee \$105/hour**

Assessed at initial planning stage if recommended by service director.

Fee includes consult with laboratory or physics specialist for project and experiment planning purposes.

**Weekend Hours** will be assessed at 1.5 times the stated rates below.

Please note that weekend hours are very limited and only available for crucial circumstances only.

**Cancellations:**

Full one-hour charged for cancellations within 24 hours of scheduled service.

**Ionizing Radiation Services (IRS)**

**Co-Director: Prabhat C. Goswami, Ph.D.**

**Contact: Vahid Nasirian**

**Services**

Cesium-137 gamma-Ray Source

- 6,000 Curies, JL Shepherd; Dose rate: 40-2400 cGy/minute
- Total doses have ranged 10 cGy – 13,000,000 cGy

Xstrahl X-Ray Cabinet

- CIX3, Xstrahl; Maximum Voltage: 320 kV
- Maximum Field Size: 51.3 cm diameter at 70 cm FSD; Dose rate: 71.4 cGy/min

Small Animal Radiation Research Platform (SARRP)

- Xstrahl, pre-clinical system; On-board high-resolution cone beam-CT imaging
- Targeted beams with  $\geq 3$  mm field sizes; Maximum x-ray energy of 220 kVp
- MuriPlan treatment planning software; Dose rate: 243 cGy/min

Typhoon FLA 7000 Phosphorimager

- Autoradiography, Chemiluminescence, and Fluorescence

Rate for cleaning fee for barrier access (any service)     \$50 (no discount)

	<b>Base Rate</b>	<b>HCCC/CCOM Rate (30% Discount)</b>
<b>Rates: JL Shepherd gamma-ray</b>		
Appointment/ hour	\$66	\$46
Each subsequent hour if technician is not present	\$17	\$12
<b>Rates: Xstrahl X-Ray Cabinet</b>		
Appointment/ hour	\$66	\$46
Each subsequent hour if technician is not present	\$17	\$12
<b>Rates: Xstrahl SARRP</b>		
Appointment/ hour	\$145	\$102
Each Subsequent Hour if technician is not present	\$61	\$42
<b>Rates: Typhoon Phosphorimager</b>		
Per use	\$11	\$8

## **Antioxidant Enzyme Services (AES)**

**Co-Director: Douglas Spitz**

### **Services:**

The AES will carry out analysis of major antioxidant enzymes (i.e., CuZnSOD, MnSOD, EcSOD, CAT, GSTs, GGTs, GCS, and GPx),  $O_2^{\bullet-}$ ,  $H_2O_2$ , and soluble small molecular weight thiols/redox couples [i.e., cysteine,  $\gamma$ -glutamylcysteine, homocysteine, N-acetylcysteine, GSH/GSSG, NADPH/NADP<sup>+</sup>, Trx(SH)<sub>2</sub>/TrxS<sub>2</sub>] and electron transport chain proteins as well as:

- Measure electron transport chain complex (I-V) activities with protein assays for normalization 40\$/sample
- Measure thiols/redox couples and antioxidant enzyme activities. CuZnSOD, MnSOD, EcSOD, CAT, GSTs, GGTs, GSH/GSSG, NADPH/NADP<sup>+</sup>, and GPx activities with protein assay for normalization 40\$/sample
- Measure immunoreactive protein for antioxidant enzymes. Cost of antibodies, supplies, and personnel (45\$/hour)
- Determine steady state levels of mRNA for redox biology proteins with quantitative PCR; Cost of primers, supplies, and personnel (45\$/hour)
- Transfect antioxidant enzyme sense and antisense cDNAs into user specified cell lines and characterize the alterations. Cost of supplies and personnel (45\$/hour)
- Maintain, develop, and provide reagents for the study of antioxidant/ pro-oxidant proteins and  $O_2^{\bullet-}$ ,  $H_2O_2$  measurements in living cells and tissues: i.e., fluorescent probes, antibodies, cDNAs, vectors, and cell lines; Cost of supplies and personnel (45\$/hour)
- Antisense/siRNA/adenoviral/lentiviral reagents for antioxidant proteins; Cost of supplies and personnel (45\$/hour)
- Provide  $O_2$  environments at varying levels from 1% to 20%  $O_2$ . Cost of supplies and personnel (45\$/hour)

**Rates:** The regular charges for non-UI members associated with the AES are negotiated with each investigator and standard guidelines for charges determined as outlined above; with the basic principle that the core wants to facilitate the user's science in the most cost-effective way that generates the most impactful results while breaking even financially.

If the core lab staff runs the experiment the cost of personnel is included. If the investigator provides the personnel to be trained by the facility, the cost of core personnel is reduced to that required to be provided by core lab staff under each specific circumstance. The investigators are also responsible for the added specific supplies cost unique to their experiment. The charges are discounted 30% for CCOM/HCCC members. Outside users are charged the full rate.

## **ESR Facility Services and Rates**

**Co-Director - Garry R. Buettner, Ph.D**

**Contact: Brett Wagner**

**[Brett-wagner@uiowa.edu](mailto:Brett-wagner@uiowa.edu)**

**EMRB 68**

**319-335-6749**

A 30% discount is provided for instrument use by HCCC/CCOM members.

	<b>Base Rate</b>	<b>HCCC/CCOM Rate (~30% Discount)</b>
ESR Instrument use (Standard configuration)	\$84 h <sup>-1</sup>	\$60 h <sup>-1</sup>
ESR Instrument use (Low temperature)	\$104 h <sup>-1</sup>	\$72 h <sup>-1</sup>
Nitric Oxide Analyzer Setup fee \$55/\$39	\$60 h <sup>-1</sup>	\$44 h <sup>-1</sup>
Beckman LS-50B Fluorescence	\$40 h <sup>-1</sup>	\$28 h <sup>-1</sup>
Oxygen Monitor systems (YSI or Biostat)	\$16 h <sup>-1</sup>	\$12 h <sup>-1</sup>
Seahorse Instrument	\$136 h <sup>-1</sup>	\$96 h <sup>-1</sup>
Supplies Consumables \$132 (typical costs of plate and media) Mito reagents \$ 17 each		
*Typical Seahorse Experiments require 1.5-2.0 h instrument time		
Labor charges	\$100 h <sup>-1</sup>	\$72 h <sup>-1</sup>

Small routine supplies necessary for “in facility” sample handing and preparation are included in the above.

Specialty chemicals and supplies are charged at cost, which includes the labor cost for preparation to be user-ready. Because this is a pass-through expense, discounts are not normally available.

For specific assays, such as vitamin C, vitamin E, or superoxide, charges are calculated by hour of instrument use plus appropriate analysis and labor costs. A 30% discount for the analysis of vitamin C in patient samples for UIHC/HCCC clinical trials is provided.

Rates are based on anticipated costs for repair and upkeep, labor involved in calibration, quality control, and the cost of small supplies.