Specifications

Project: *Blots and Gels Imaging System with Accompanying Supplies*

1.0 <u>Background and Purpose:</u>

Scientists at the Roman L. Hruska U.S. Meat Animal Research Center (USMARC) are developing innovative technologies to address high-priority challenges within the U.S. beef, swine, and sheep industries. To support meat safety and quality research, a new blots and gels imaging system with accompanying supplies is required. This equipment is essential for the continuation of many research projects that require such technology and is a high priority item for USMARC.

CONTRACTOR REQUIREMENTS

2.0 <u>Technical Requirements/Tasks</u>:

- Blots and Gels Imaging System
    - Imaging System must be compatible with Image Lab Software
    - Capable to access and modify ptl and scn file types
    - Imaging system must have automatic recognition of application-specific tray and adjustment of imaging parameters and software options
    - Must have capabilities to preform pre-calibrated focus for any zoom setting or sample height
    - Must have two user-defined modes (rapid or optimal auto-exposure) for all blot and gel imaging applications
    - Must have capability of Image flat fielding
    - Must have Cooled CCD, 6 megapixels detector
    - Imaging system must have Dynamic Range of >4 orders magnitude
    - Imaging system must have a Chemiluminescence detector
        - 590/110 nm standard emission filter for protein and DNA gel and blot imaging
    - Capable of data output, 16-bit or 8-bit: SCN, TIFF, JPEG files
    - Instrument size no larger the following to fit in the constraints of the laboratory
        - Length, 61 cm
        - Width, 51 cm
        - Height, 53 cm
    - Operating Voltage must be 100-250 V to be compatible with electric of the building
    - Operating Temperature 10-28 degrees Celsius for research sample preservation
    - Operating Humidity 10-85% relative humidity for research sample preservation
- White Sample Tray
    - Quantity: 1
    - Sample Tray for gels and blots stained with Coomassie Blue, Copper, Silver or Zinc Stains
- Blue Sample Tray
    - Quantity: 1
    - Sample tray for gels and blots stained with Coomassie Blue, Copper, Silver or Zinc Stains

- Image Lab Software
    - Quantity: 1
    - FDA CFR 21 Part 11 module for Image Lab Software
- hFAB Rhodamine Anti-Tubulin Primary Antibody 40 µl
    - Quantity: 1
    - lyophilized rhodamine conjugated anti-tubulin human Fab fragment; reconstitute to 40 µl
- Precision Plus Protein
    - Unstained protein standards, strep-tagged, recombinant proteins (10-250kD)
    - Must include three reference bands (25,50, 75 kD)
    - 100 applications
- Clarity Max Western ECL Substrate
    - Quantity: 1
    - 100 ml
    - Contain 50 ml clarity Max Western Peroxide Reagent
    - 50 ml Clarity Max Western Luminol/Enhancer Reagent
- 4-20% Mini-Protean TGX Stain-Free Protein Gels
    - Quantity: Package of at least 10
    - 15 Well, 15 µl
    - 4--20% precast
    - polyacrylamide gel
    - 8.6 × 6.7 cm (W × L)
    - for use with Mini-
    - PROTEAN Electrophoresis Cells
    - 12-month shelf life

3.0 <u>Government Furnished:</u>

Trade- In: The USDA-ARS is offering as trade a Bio-Rad ChemiDoc XRS+ Model No: Universal Hood II Serial No: 721BR01140. Trades will not be released until the new Blots and Gels Imaging System is delivered. USDA will continue to use the existing equipment until the new unit is delivered. USDA has a loading doc and can assist with the unloading of new equipment and loading of trade in equipment.

4.0 <u>Deliverables/ Schedules:</u>

All products must be delivered within 30 days of award to:

USMARC
844 Road 313,
Clay Center, NE 68933