QIAGEN BioRobot EZ1 Sole Source Specifications

The BioRobot EZ1 is designed for automated isolation of nucleic acids from a wide variety of sample types. The magnetic particle technology used by the BioRobot EZ1 System combines the speed and efficiency of silica-based DNA purification with the convenient handling of magnetic particles. The unique design of the BioRobot EZ1 makes operation of the instrument convenient and easy to use.

Specifications of the BioRobot EZ1

- Type: stand alone desktop
- Syringe/Nozzle Unit: 6 nozzles
- Dispensable volume: 25 µl–1000 µl
- Throughput: 6 samples/batch/20 min. (1–6 samples per run)
- Applications: forensic, blood, buffy coat, tissue, buccal swab, mRNA, total RNA, embedded tissues, dried blood, viral RNA and DNA.
- Temperature Control: heat panel (sheet heater)
- Operation: touch LCD, IC card with protocols/software
- Tip: filter tips designed for the system
- Sample prep plate: pre-packed cartridge (10 wells and 2 heating wells)
- Size: 282 x 455 x 430 mm (w x d x h)
- Weight: 26 kg
- Electrical requirements: 200–240 V AC ± 10%, 50/60 Hz, 300 VA
- Humidity: < 80 %
- Temperature: 5–40 °C

Unique specifications include:

- Genomic DNA preps from blood, dried blood spots, buffy coat, buccal cells, paraffin-embedded sections, urine, and cerebral spinal fluid.
- Validated forensic sample system.
- RNA from a variety of samples including tissue and cells.
- Viral Nucleic Acid (vDNA and vRNA) from cell free biological samples.
- Reliable, high quality nucleic acid suitable for all downstream applications.
- The BioRobot EZ1 utilizes Pre-programmed EZ1 Cards containing a specific protocol per card eliminating the need for a separate PC. This allows:
    - One instrument for many different protocols,

- Standardization of sample preparation eliminating variability between technicians,
- Ensure efficient processing – fully automated and true walk away capability. Clear on-screen messages tell you exactly what step the instrument is processing,
- No external PC is required,
- Self-contained sealed reagent strips make setup simple, easy, safe and quick.

- The BioRobot EZ1 will prepare from 1 to 6 samples per run to suit throughput needs.
- The unique self contained, sealed Reagent Cartridge Stripes offer:
  - Safety – no contact or dispensing of reagents,
  - Ease of Use – reagent stripes are easily loaded into the instrument,
  - Time Savings – loading of reagent strips and samples takes less than 4 minutes.
- Total sample preparation time is less than 20 minutes.
- All processing steps are performed automatically on the worktable, from opening of the sealed reagent strips to elution of highly pure nucleic acid.

Only QIAGEN offers the combination of full walk-away automation with proven self-contained, sealed reagent strip chemistries for the isolation of gDNA, viral DNA and RNA and total RNA from a variety of specimen types.

QIAGEN is the sole supplier and vendor for the BioRobot EZ1.

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Sole Source Justification
2013-DN-BX-0071
Columbus Police Crime Laboratory

1. Description

The objective of the project funded by Grant #2013-DN-BX-0071 is to handle, screen, and analyze backlogged forensic DNA casework samples and to improve DNA laboratory infrastructure and analysis capacity, so that forensic DNA samples can be processed efficiently and cost effectively, and future backlogs can be prevented.

Under this project, the laboratory will make expenditures in multiple budget categories with the vendor Qiagen. The purchases are anticipated to, over the course of the project, total over $100,000. Qiagen is the only vendor that can provide the required items in order for the laboratory to meet project goals and to continue to be in compliance with guidelines defined within the solicitation document.

The equipment budget includes four EZ1 Advanced XL DNA extraction workstations at a cost of $51,000 per unit. As only Qiagen can offer warranty service contracts on the items they manufacture and in order to obtain discounted pricing, a 3 year extended warranty will be purchased with the instruments for a total cost of $40,000. The Supply budget also includes 5 Qiagen extraction kits to be used with the extraction workstations at a cost of $400 each. The total amount of sole source purchases from Qiagen is $246,000.

2. Explanation for Sole Source

The Columbus Police Crime Laboratory previously validated and is currently utilizing the Qiagen DNA extraction platform which includes the EZ1 Advanced XL workstations. The decision to go with Qiagen was made because of Qiagen's expertise in the field of DNA extraction and isolation and its accepted use in forensic DNA analysis.

As this laboratory has previously validated the Qiagen extraction kits, the lab procedures for DNA testing, and all instruments at a considerable cost in supplies and personnel resources, it is not cost effective to completely re-validate the procedure when purchasing new instruments to use in our validated procedures.

DNA National Quality Assurance Standards also require that laboratories validate their entire DNA testing procedure, which includes protocols, kits and the instruments used in the analysis of samples. Any significant changes to the validated procedures must, in turn, be validated. Validation of the procedures used in this laboratory took months and involved a significant expenditure of resources and funds.

Qiagen is an expert in the field of DNA extraction and isolation. Since 1984, Qiagen has led the development and commercialization of sample preparation technologies for DNA analysis providing innovative systems that allow human identification and forensic scientists to maximize their use of DNA in solving crimes and establishing identity.

3. Time Constraints

The project period for award 2013-DN-BX-0071 is 10-1-2013 through 3-31-2015 and the purchases will be made during this time. Without the ability to purchase the proposed items from Qiagen within the project period, the goals of the project would not be met.

It is unknown how long it would take a vendor other than Qiagen to reach the same level of competence because the laboratory chose to go with the Qiagen system as stated earlier. The laboratory DNA analysis protocols have been set up and validated to use the Qiagen EZ1 XL workstations and kits. It would take more than the current project period to transition to another vendor.

4. Uniqueness

Qiagen is the only vendor that can provide the EZ1 XL workstations to this laboratory considering the protocols and procedures that have already been validated. The Investigator kits used by this laboratory have been designed to perform on the EZ1 workstations, and there are no other vendors who can provide the equipment or services to support this platform.

5. Other Points

Our laboratory previously evaluated other products of other vendors and chose to utilize the Qiagen EZ1 XL workstations. The laboratory has expended significant resources validating the protocols and procedures for DNA analysis on this instrument as well as training all personnel in this NDIS-approved analysis method. It would take months to revalidate the entire procedure and any cost savings from bidding the instrument purchase out would be negated by a costly revalidation process.

6. Declaration

The proposed expenditures with Qiagen are in the best interest of our agency because they will allow us to continue to meet project and program objectives. If these purchases were not allowed, not only would the objective of the project not be met, but significant negative impacts would occur in project metrics and would affect the agency's ability to process backlogged cases.