

Southwest Research Institute® (SwRI®) offers advanced research capabilities in biological science, combining chemical expertise with biological strategies for innovative problem solving. Using the latest technologies in state-of-the-art laboratories, SwRI scientists provide multidisciplinary, integrated approaches to meet client requirements.

Microbiology

The Southwest Research Institute Microbiology Laboratory functions at Biological Safety Level 2 and is equipped with a Class II, Type A2 biological safety cabinet. SwRI scientists and technicians have expertise in the following applications:

- ❑ Bacterial growth analysis
- ❑ Quantification and identification
- ❑ Biological dye studies
- ❑ Microbial limits
- ❑ Toxicity and susceptibility studies
- ❑ Enzyme utilization and deployment studies
- ❑ Biocide agent validation

SwRI scientists are exploring new developments in microbial drug delivery, sustainability of decontamination methods, controlled-release biocides for food and textile extended shelf life, alternative fuel sources such as microbial fuel cells, spore-detecting biosensors, and biodegradable studies using enzymes and microorganisms.

Technical staff members have significant experience with the following materials: *Bacillus thuringiensis* (spore-formers) and other related *Bacillus* species, *Enterobacter*, *E. coli* and *Staphylococcus* species. Other laboratory evaluations include growth analysis (various media, concentrations and environmental parameters), biological dye and enzyme utilization studies.

Preparation of cervical cancer, single-cell suspensions



D0 16026



DE132908

Cell/Tissue Imaging

The SwRI Cell/Tissue Imaging Laboratory offers the following test services:

- ❑ Cell culture and maintenance
- ❑ Biomarker probing
- ❑ Nano-particles and nano-probes
- ❑ Immunoassays
- ❑ Multi-color fluorescence microscopy
- ❑ Flow cytometry
- ❑ Automated live cell imaging and analysis

Controlled Biological System (CBS) Programs

SwRI has several programs for the Defense Advanced Research Projects Agency (DARPA), including:

- ❑ Entomology-related technology areas such as a training and testing facility for European honeybees in detection of dinitrotoluene (DNT)
- ❑ Collection of local insect species to investigate biohazards in the South Central Texas area
- ❑ Studies of *Manduca sexta* to test moth flying patterns in response to detection of synthetic pheromones



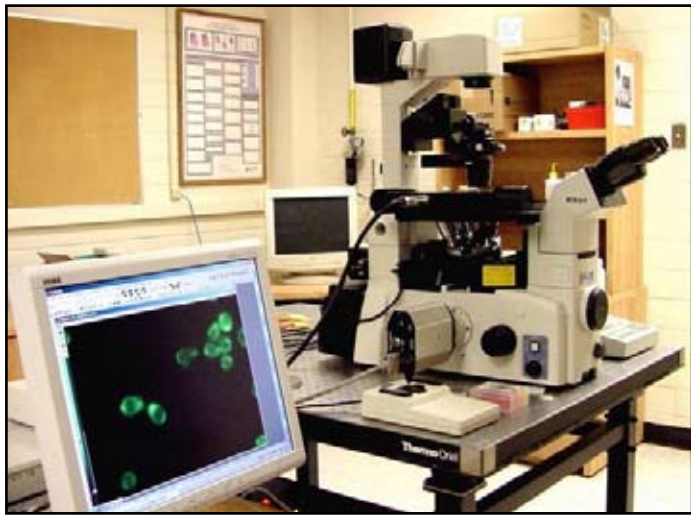
DE132908

Various media displaying microbial differentiation
Inset: Blood contact plate used to test lab environment for microbial contamination by hemolytic organisms



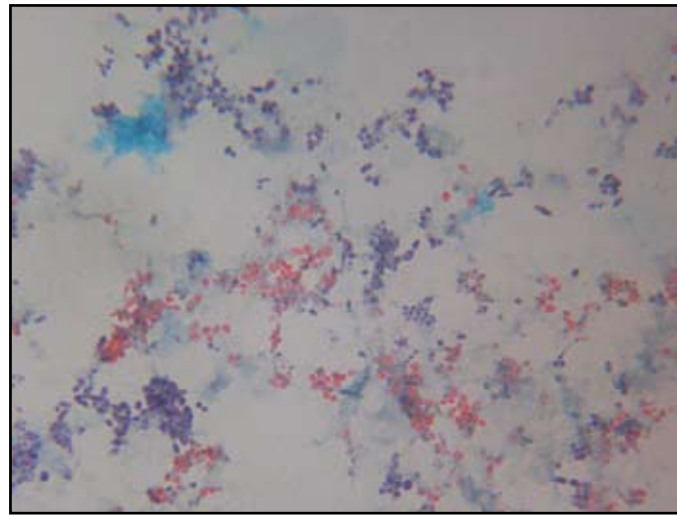
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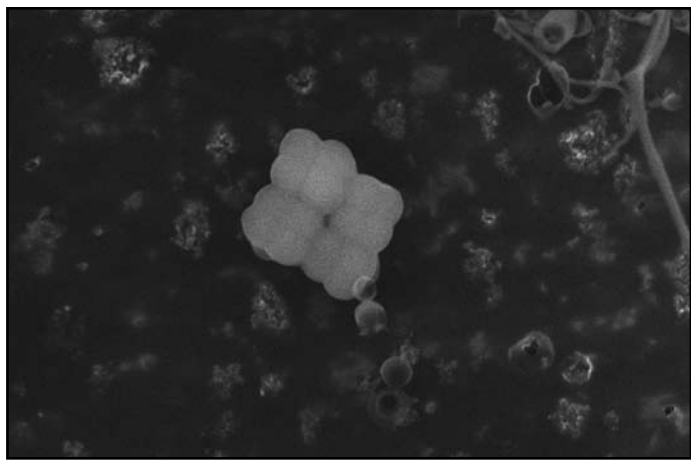
Imaging equipment used to capture fluorescently bio-tagged cell lines

DO 16027



Isolated gram-positive and -negative species from a bread sample

DO 16029



DO 16028

Environmental scanning electron microscopy used to image microbes subjected to lysis procedures (shown: control sample for *Micrococcus luteus*)

**We welcome your inquiries.
For additional information, please contact:**

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Southwest Research Institute is an independent, nonprofit, applied engineering and physical sciences research and development organization using multidisciplinary approaches to problem solving. The Institute occupies 1,200 acres in San Antonio, Texas, and provides more than 2 million square feet of laboratories, test facilities, workshops, and offices for more than 3,000 employees who perform contract work for industry and government clients.



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through innovative science and technology*

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