



Biotechnology (TOP 0430.00)

October 2024

**Prepared by the South Central Coast Center of Excellence for
Labor Market Research**

Program Recommendation

This report was compiled by the South Central Coast¹ Center of Excellence to provide regional labor market data for the program recommendation – Biotechnology. This report can help determine whether there is demand in the local labor market that is not being met by the supply from programs of study that align with this occupation group.

Key Findings

- In 2023, there were 4,643 jobs for Biotechnology-related occupations in the South Central Coast Region.
- This number is expected to increase by 3% through 2028.
- Projections show approximately 530 annual openings in the region. There were 11 awards conferred in relevant programs, indicating an undersupply.
- Typical entry-level education ranges from high school diploma or equivalent for Inspectors, Testers, Sorters, Samplers, and Weighers to a bachelor's degree for Biological Technicians and Clinical Laboratory Technologists and Technicians.

¹ The South Central Coast Region consists of San Luis Obispo County, Santa Barbara County, Ventura County, and the following cities from North Los Angeles County: Canyon Country, Castaic, Lake Hughes, Lancaster, Littlerock, Llano, Newhall, Palmdale, Pearblossom, Santa Clarita, Stevenson Ranch, and Valencia.

Occupation Codes and Descriptions

There are three occupations in the standard occupational classification (SOC) system that were identified as related to Biotechnology for this analysis. The occupation titles and descriptions, as well as reported job titles, are included in Exhibit 1.

Exhibit 1 – Occupation, Description, and Sample Job Titles

SOC Code	Title	Description	Sample of Reported Job Titles
19-4021	Biological Technicians	Assist biological and medical scientists. Set up, operate, and maintain laboratory instruments and equipment, monitor experiments, collect data and samples, make observations, and calculate and record results. May analyze organic substances, such as blood, food, and drugs.	Biological Science Laboratory Technician (Biological Science Lab Tech), Biological Science Technician, Biological Technician, Laboratory Technician, Marine Fisheries Technician, Research Assistant, Research Associate, Research Specialist, Research Technician, Wildlife Biology Technician
29-2011	Medical and Clinical Laboratory Technologists	Perform complex medical laboratory tests for diagnosis, treatment, and prevention of disease. May train or supervise staff.	Clinical Laboratory Scientist (CLS), Clinical Laboratory Technologist, Histologist Technologist, Medical Laboratory Technologist (Medical Lab Tech), Medical Technologist (MT), Microbiology Technologist
29-2012 (29-2018)	Medical and Clinical Laboratory Technicians	Perform routine medical laboratory tests for the diagnosis, treatment, and prevention of disease. May work under the supervision of a medical technologist.	Certified Clinical Laboratory Technician, Clinical Laboratory Technician (Clinical Lab Technician), Laboratory Assistant (Lab Assistant), Laboratory Technician (Lab Tech), Medical Laboratory Technician (MLT), Medical Laboratory Technicians (Medical Lab Technician), Medical Technician
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	Inspect, test, sort, sample, or weigh nonagricultural raw materials or processed, machined, fabricated, or assembled parts or products for defects, wear, and deviations from specifications. May use precision measuring instruments and complex test equipment.	Inspector, QA Auditor (Quality Assurance Auditor), QA Inspector (Quality Assurance Inspector), QA Technician (Quality Assurance Technician), QC Technician (Quality Control Technician), Quality Auditor, Quality Control Inspector (QC Inspector), Quality Inspector, Quality Technician, Test Technician

Source: O*NET Online

Current and Future Employment

In the South Central Coast region, the number of jobs related to Biotechnology occupations are expected to grow 3% through 2028. The occupation – Clinical Laboratory Technologists and Technicians – is expected to grow the fastest, 9%.

Exhibit 2 – Five-Year Projections for Biotechnology Occupations in the South Central Coast Region

SOC	Occupation	2023 Jobs	2028 Jobs	2023-2028 Change	2023-2028 % Change	Annual Openings
19-4021	Biological Technicians	418	443	25	6%	59
29-2018	Clinical Laboratory Technologists and Technicians	1,115	1,220	105	9%	96
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	3,110	3,134	24	1%	375
		4,643	4,797	154	3%	530

Source: Lightcast™ Analyst

Earnings

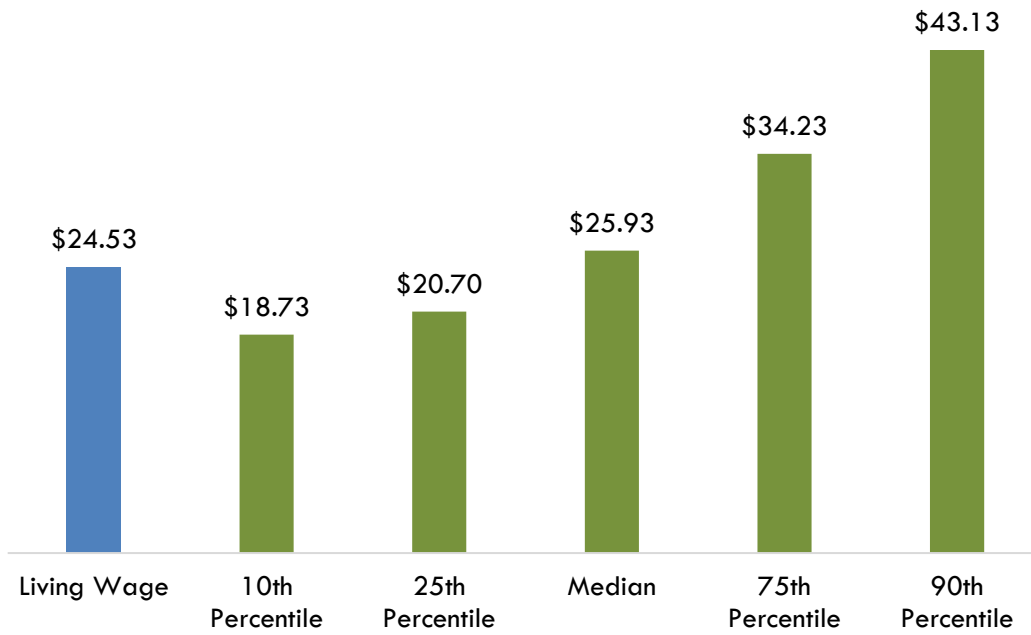
Exhibit 3 contains hourly wages and annual average earnings for these occupations. Entry-level hourly earnings are represented by the 25th percentile of wages, median hourly earnings are represented by the 50th percentile of wages, and experienced hourly earnings are represented by the 75th percentile of wages, demonstrating various levels of employment.

Exhibit 3 – Earnings for Biotechnology Occupations in the South Central Coast Region

SOC	Occupation	Entry-Level Hourly Earnings	Median Hourly Earnings	Experienced Hourly Earnings
19-4021	Biological Technicians	\$21.51	\$26.53	\$35.11
29-2018	Clinical Laboratory Technologists and Technicians	\$22.32	\$28.55	\$38.71
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	\$18.27	\$22.71	\$28.88

Source: Lightcast™ Analyst

Exhibit 3b – Earnings for Biotechnology Occupations in the South Central Coast Region



Source: Family Needs Calculator (Living wage is based on Single Adult households with no children); Lightcast™ Analyst

Employer Job Postings

In this research brief, real-time labor market information is used to provide a more nuanced view of the current job market, as it captures job advertisements for occupations relevant to the field of study. Employer job postings are consulted to understand who is looking for professionals in a given field, and what they are looking for in potential candidates. To identify job postings related to Biotechnology the following standard occupational classifications were used:

19-4021	Biological Technicians
29-2018	Clinical Laboratory Technologists and Technicians
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers

Top Occupations

Over the past 12 months (October 2023 to September 2024), there have been 1,579 employer postings for occupations related to Biotechnology.

Exhibit 4 – Top Occupations by Job Postings

SOC Code	Occupation	Job Postings, Last 12 months
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	1,064
29-2018	Clinical Laboratory Technologists and Technicians	448
19-4021	Biological Technicians	67
	Total	1,579

Source: Lightcast™ Analyst

Top Titles

The top job titles for employers posting ads for jobs related to Biotechnology are listed in Exhibit 5. Quality Inspectors is mentioned as the job title in 266 job postings.

Exhibit 5 – Job Titles

Title	Job Postings, Last 12 months
Quality Inspectors	266
Laboratory Technicians	97
Quality Control Inspectors	81
Quality Technicians	59
Quality Assurance Specialists	57
Laboratory Assistants	46
Quality Assurance Technicians	36
Quality Control Technicians	30
Quality Control Associates	30
Product Testers	29

Source: Lightcast™ Analyst

Top Employers

Exhibit 6 lists the major employers hiring professionals in the Biotechnology field. The top employer posting job ads is Actalent. The top worksite cities for these occupations were Thousand Oaks, Simi Valley, Camarillo, Oxnard, and Santa Maria.

Exhibit 6 – Top Employers

Employer	Job Postings, Last 12 months
Actalent	61
Aerotek	32
Nr Consulting	28
Belcan	28
Volt	25
Express Employment Professionals	23
Parker Hannifin	21
Amgen	20

Source: Lightcast™ Analyst

Skills

The tables in Exhibit 7 list employers' most commonly requested skills in job postings related to Biotechnology. Auditing is the most sought-after specialized skill for employers. Quality Control was the most requested baseline skill. Microsoft Excel was the most requested software.

Exhibit 7 – Specialized Skills

Skills	Job Postings, Last 12 months
Auditing	328
Good Manufacturing Practices	228
Calipers	224
Micrometer	208
Biology	193
Quality Management Systems	178
Test Equipment	165
Quality Management	163
Engineering Drawings	143
Production Process	141

Source: Lightcast™ Analyst

Exhibit 7b – Baseline Skills

Skills	Job Postings, Last 12 months
Quality Control	523
Communication	421
Quality Assurance	414
Detail Oriented	329
Computer Literacy	300
Operations	255
Safety Assurance	240
Management	220
Problem Solving	193
Writing	161

Source: Lightcast™ Analyst

Exhibit 7c – Software and Programming Skills

Skills	Job Postings, Last 12 months
Microsoft Excel	190
Microsoft Office	180
Microsoft Word	98
Microsoft Outlook	92
Microsoft PowerPoint	81

Source: Lightcast™ Analyst

Education and Training

Exhibit 8 shows the typical entry-level education requirement for the occupations of interest, along with the typical on-the-job training needed to attain competency in the occupation.

Exhibit 8 – Education and Training Requirements

SOC	Occupation	Typical entry-level education	Typical on-the-job training
19-4021	Biological Technicians	Bachelor's degree	None
29-2018	Clinical Laboratory Technologists and Technicians	Bachelor's degree	None
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	High school diploma or equivalent	Moderate-term

Source: Bureau of Labor Statistics Employment Projections (Educational Attainment)

Regional Completions and Openings

Between 2020 and 2023, there were 11 awards conferred in the South Central Coast region aligned with programs related to the occupations in this report.

Exhibit 9 – Three-Year Average of Awards Conferred in the Region

TOP/CIP Code	Program	3-Year Average (2020-2023)
0430.00	Biotechnology and Biomedical Technology	11
15.0401	Biomedical Technology/Technician	N/A
26.1104	Computational Biology	N/A
41.0101	Biology/Biotechnology Technology/Technician	N/A
	Average	11

Source: Datamart

CCC Awards

Exhibit 10 shows the average number of awards granted by community colleges within programs historically dedicated to training for Biotechnology-related occupations.

Exhibit 10 – CCC Awards in the South Central Coast Region, 2020-2023 Average

CCC Programs	3-Year Average
Moorpark	10
Ventura	1

Source: DataMart

Sources

O*Net Online, Lightcast™ Analyst, MIT Living Wage Calculator, Bureau of Labor Statistics (BLS) Education Attainment, California Community Colleges Chancellor's Office Management Information Systems (MIS) Data Mart, CTE LaunchBoard, Statewide CTE Outcomes Survey, Employment Development Department Unemployment Insurance Dataset

Notes

Data included in this analysis represent the labor market demand for relevant positions most closely related to Biotechnology. Traditional labor market information was used to show current and projected employment based on data trends, as well as annual average awards granted by regional community colleges. Real-time labor market information captures job post advertisements for occupations relevant to the field of study and can signal demand and show what employers are looking for in potential employees, but is not a perfect measure of the quantity of open positions. All representations have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. The most recent data available at the time of the analysis was examined; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and findings; however, neither the Centers of Excellence for Labor Market Research (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.