

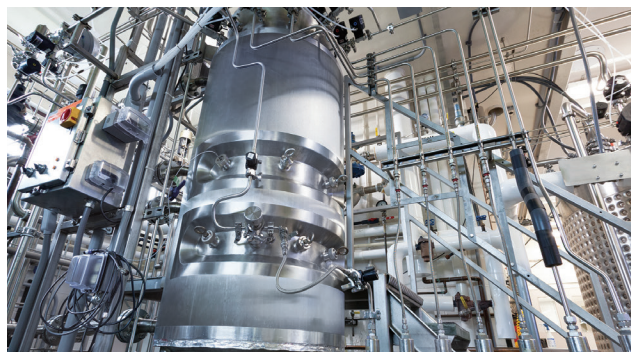
Customize Promega enzymes and proteins to suit your specific needs

Enzymes are the basic tools of molecular biology, clinical diagnostics, cellular analysis and protein analysis applications. We understand the importance of providing high-quality, reproducible enzymes for these applications. Since we are the primary manufacturer of many proteins, you eliminate uncertainty in your supply chain when you partner with us.

Promega has state-of-the-art facilities for the manufacture of proteins from fermentation all the way through purification and quality control. Our facilities were designed to handle microliter to large-scale multiple liter production, giving us the capabilities to support your growth.

Fermentation and Protein Purification

Our fermentation laboratories have gram to kilogram production capabilities, with programmable logic controller (PLC) automated monitoring and control for batch data trending and history. We have the capacity for fermentation volumes from 1L to 2,500L. We are experienced in fermentation of more than 300 strains of bacteria and yeast, including recombinant *E. coli* and *Pichia pastoris*. Equipment includes biosafety cabinets, incubator shakers, stirred tank bioreactors, continuous-flow centrifuges, and supporting equipment and instruments. We have three dedicated scientists in our fermentation department with a combined experience level of greater than 20 years.



Our protein purification facility has over 25,000 square feet of manufacturing space, and production equipment capable of producing milligram to kilogram quantities of protein to customer specifications. The staff has extensive experience purifying a wide variety of proteins from recombinant *E. coli*, *Pichia pastoris*, hybridomas, and native sources using affinity, ion-exchange, and hydrophobic-interaction chromatography.

In-process, final quality control testing and application-based testing is performed using methods such as qPCR, HPLC, mass spectrometry, gel densitometry, chip technology, and radioisotope-based analysis.



Proteins can also be formulated to meet the specific needs of customer applications. For protein purification, we have large-scale production areas built to cGMP specifications. We can produce >100g of many purified enzymes.

We produce a wide variety of proteins including:

- Over 200 modifying and restriction enzymes (native and recombinant):
 - Choice of formulations of GoTaq® DNA Polymerase, including Hot Start
 - Choice of reverse transcriptases
 - Recombinant luciferases
- Antibodies and growth factors
- Proteases, kinases and phosphatases

Chromatography process technologies include:

- Automated affinity
- Ion-exchange
- Hydrophobic interaction

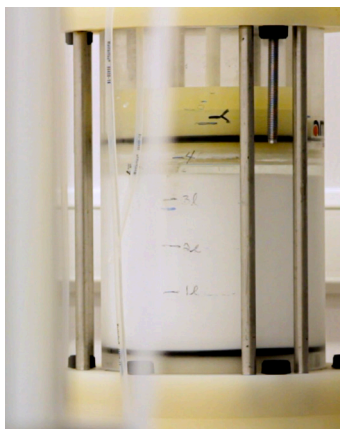


Customization

Promega has many proteins available in our catalog. We provide a range of customization options for our enzymes, if an existing size, format or formulation does not meet your needs.

Examples of our customization include:

- **Concentration**—Enzymes available at high concentrations or other specific concentrations of your choice
- **Formulation**—We can change the formulation of existing enzymes or even optimize your enzyme for lyophilization compatibility
- **Application-specific reaction buffers** designed to meet your needs



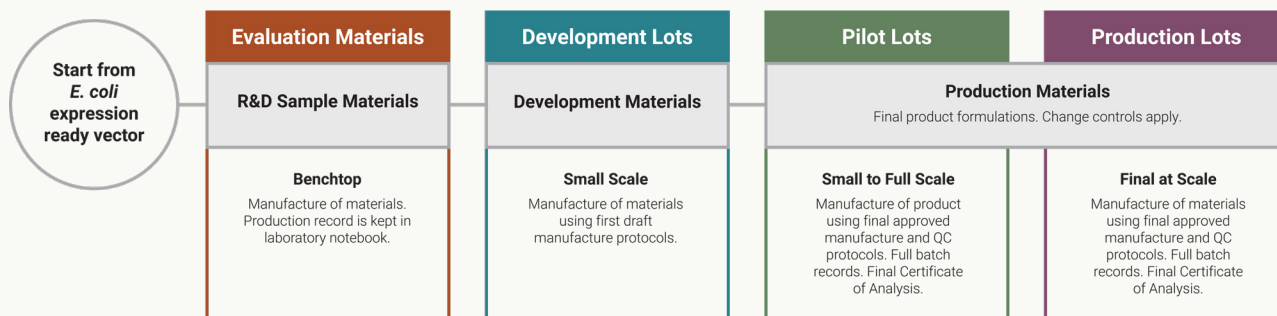
Packaging: Once you have decided on your product formulation, you can choose from a variety of filling, packaging and labeling options, including private labeling. Many of our enzymes are available for resale.

- Promega's four bottle-filling lines and three tube-filling lines provide for flexibility in meeting your needs today and as your business grows. In addition, we have cartridge-dispensing lines and glass-filling lines for products to be lyophilized.
- Promega provides a choice of bottles and tubes. Our packaging team will work with you to ensure you are selecting the best primary container that not only meets your needs but maintains product integrity. When selecting a container, the following considerations are critical: product compatibility, distribution environment, light sensitivity, end customer needs, and fit with your existing packaging brand strategy.
- Promega offers a variety of labeling choices, dependent on your intended use of the product. Our Custom team will outline your choices and work with you in label selection for both primary and secondary packaging.

Label availability includes:

- Promega standard labels
- Unbranded blank stock
- Customer-specific labels

If you are looking for a protein currently not in the Promega catalog, talk with us about our Recombinant Protein Purification capabilities. Starting with an optimized expression-ready vector, we can help you scale up to full production, manufacturing your protein under our rigorous quality system.



Let's **TALK**
CUSTOM

Contact us today!

One of our scientists will be in touch to discuss your needs, address your challenges and serve as your champion in finding a custom solution.

www.promega.com/CustomSolutions

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