**Biomatik**
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# Custom Protein Production Service FAQs

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Below are some frequently asked questions about the Biomatik Protein Production service. If you have any other questions, please contact us at pa@biomatik.com.

1. **What is the Custom Protein Expression Service?**
   Our Custom Protein Expression Service provides tailored solutions for producing specific proteins based on your unique requirements. We offer support for various expression systems, including bacterial, yeast, insect, and mammalian platforms, ensuring optimal results for your project.

2. **What types of proteins can you express?**
   We can express a wide range of proteins, including:

   - Recombinant proteins
   - Antibodies
   - Enzymes
   - Membrane proteins
   - Complex multi-subunit proteins

3. **Which expression systems do you use?**
   We offer protein expression in:

   - **Bacterial systems:** Cost-effective and fast production for non-glycosylated proteins.
   - **Yeast systems:** Ideal for scalable production and post-translational modifications.
   - **Insect systems:** Suitable for complex proteins with proper folding and modifications.
   - **Mammalian systems:** Best for human-like glycosylation and authentic post-translational modifications.

4. **When should I use an E. coli expression system?**
   The E. coli expression system is ideal for:

   - Proteins with no or minimal post-translational modifications.
   - Downstream applications, such as antibody production, where high activity or complete structure is not required.
   - Situations where low endotoxin levels are not a concern. Its key advantages include low cost and high yield.

5. **What do you need to get started? Can you use my construct?**
   We prefer to begin with the protein sequence for codon optimization, gene synthesis, and subcloning in-house. However, if you have a proven plasmid and can provide a detailed expression protocol, we are happy to evaluate and attempt using it.

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6. **Do you offer risk-free guarantees on your protein service?**
   Yes, we offer a risk-free guarantee for proteins between 10-60 kDa: no protein, no charge. For proteins smaller than 10 kDa or larger than 60 kDa, only the gene synthesis and project setup costs will be charged if the project is unsuccessful.

7. **Can Biomatik produce milligrams to grams of protein?**
   Yes, we can scale up production to milligrams or grams of protein. We typically start with flask culture to determine the yield through a pilot fermentation study. If the yield is sufficient, scaling up to larger quantities is possible.

8. **I will be using a recombinant protein for antibody production. Are there any specific requirements I need to consider for my protein?**
   The protein antigen should be dissolved in a neutral buffer such as PBS.
   His-tag is the preferred tag due to its small size and being less likely to elicit background response.
   Higher purity, such as >90%, is recommended.

9. **What is your policy for cancellations?**
   Our cancellation policy includes the following terms:

   - **Before production begins**: Orders can be canceled without fees.
   - **After production starts**: Customers are required to pay for completed stages upon cancellation.
   - **After project completion**: Full project costs apply, excluding shipping and handling fees.

10. **What is the success rate for a custom protein working for me?**
    We have a success rate of over 95% for protein production using the E. coli expression system. However, we do not guarantee protein activity or suitability for downstream applications.

11. **How do I resuspend and store lyophilized proteins?**
    To resuspend lyophilized proteins: use 1 mL of sterile water. For long-term storage, aliquot the resuspended protein and store it at -80°C. Avoid frequent freeze-thaw cycles.

12. **Can you handle difficult-to-express proteins?**
    Yes, our team specializes in optimizing expression conditions for challenging proteins, including those prone to aggregation, low solubility, or instability. We use proprietary strategies and cutting-edge technology to overcome these challenges.

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**13. What services are included in the process?**

Our comprehensive service includes:

- Codon optimization and gene synthesis
- Vector design and cloning
- Small-scale test expression
- Protein purification and quality control
- Scale-up production

**14. How long does the process take?**

Turnaround time is typically 6 to 8 weeks, depending on the complexity of the protein and any additional services requested, such as endotoxin removal. Timelines may vary for particularly challenging sequences or large-scale requests.

**15. What quality control measures do you provide?**

- SDS-PAGE and Western blot analysis
- Mass spectrometry
- Endotoxin testing
- Purity assessment (HPLC or SEC)

**16. What is the pricing structure?**

Pricing is project-specific and depends on factors such as the complexity of the protein, expression system, scale, and purification requirements. Contact us for a detailed quote based on your project specifications.

**17. Do you offer technical support post-delivery?**

Yes, we provide ongoing technical support to address any questions or concerns related to the protein delivered. Our team is committed to ensuring the success of your research and applications.

**18. How can I get started?**

To initiate a project, contact us through our website or email with details about your protein expression needs. Our team will review your requirements, provide a consultation, and offer a customized proposal to meet your goals.

**19. How is the protein shipped, and how long will it take to arrive?**

Recombinant proteins are usually shipped in lyophilized format, unless a different form is requested. Shipments are sent on blue ice overnight delivery within the USA and Canada, and typically arrive within 3-4 business days for international customers.

**20. What QC data is provided, and how is purity assessed?**

Protein quality and purity are assessed by SDS-PAGE with Coomassie staining. HIS-tagged proteins are also evaluated by western blot, while tag-free proteins may be assessed with LC-MS/MS analysis (optional).

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**21. What happens if the protein construct doesn't express well?**

In rare cases where expression is suboptimal, we explore alternative strategies - such as re-cloning into a different vector, testing alternative E. coli strains, or optimizing expression conditions. We are committed to troubleshooting every project thoroughly, which contributes to our high overall success rate.

**22. The protein I want to express is an antibody. Can you do this?**

We offer specific antibody sequencing and recombinant antibody production packages.