BIO BENCH
Boost research.

Recombinant Protein Expression Service – Insect Cell Host

The Baculovirus Expression Vector System (BEVS) originated in the 1980s with the first goal of producing recombinant human IFN-β using insect cell lines. Over time, BEVS has been developed into a well-established commercial manufacturing platform for a wide range of biopharmaceutical products. These include human and veterinary vaccines, as well as protein-based medications. Additionally, BEVS is commonly employed in life science research to generate proteins that fulfill various scientific needs.

In terms of recombinant protein expression, **insect cell lines** offer numerous advantages. Biologically, insects cells are capable of performing more extensive post-translational modifications compared to bacteria or yeast. In addition, insect cells exhibit higher tolerance for heterologous protein expression than mammalian cell lines. This attribute proves beneficial when attempting to express challenging proteins, such as transmembrane proteins, kinases, and enzymes, which are often problematic in mammalian cell expression.

From a cost perspective, **insect cell lines** offer certain advantages in cell culture. Unlike mammalian cell lines, insect cells do not require CO_2 for growth. Moreover, the lower incubation temperature of insect cell cultures results in reduced energy consumption. Additionally, the biosafety requirements for working with insect cell lines are generally less stringent than those associated with mammalian cell cultures.

The technical team at BioBench possesses extensive expertise in working with the **Baculovirus-Insect Cell Expression System (BICES).** To initiate the process, all you need to do is provide us with the protein sequence. Our team will perform a thorough analysis of the sequence, optimizing the codon usage and incorporating the appropriate signaling peptide and purification tag. Once the project is completed, your protein will be promptly delivered to your laboratory bench, ensuring a seamless and efficient experience.

Service and Time Line[1]	Client Provides[2]	Content[3]	Deliverables[3]	Price[4]
P110400 **Recombinant Protein Production Service – Insect Cell Host** 6 - 10 weeks	Reconstructed plasmid. If client was not able to provide the plasmid, Bio Bench will synthesize it according to client provided sequence with minimum cost.	1. Condon optimization and gene synthesis when BioBench is requested. 2. P1 generation virus production (low titer). MOI, TOI and protein expression level analysis. 3. P2 generation virus production (high titer). Protein expression analysis. 4. Larger scale cell culture if necessary. 5. Protein purification through combined methods. Protein lyophilization is optional. 6. SDS-PAGE, WB and/or ELISA according to the protein.	• 0.2mg – 1mg purified protein. • Protein purity: > 80%. • QC and Report.	Inquiry
Additional protein production available! 1 – 5mg, 5 – 10mg, 10 – 20mg, 20 – 30mg, 30 – 40mg and 40 – 50mg or more. Please inquire us for the price.				**Inquiry**

Benefits:

- ✓ Fast timeline, minimum 40 days the protein will be delivered.
- ✓ High-level post translation modification ensured by selected insect cell line.
- ✓ Multiple applications compatible: protein crystallization, ion channel, FACS/WB/ELISA/IHC, drug discovery, IVD material, etc.
- ✓ Senior scientist supporting your project.
- ✓ Low cost, best fit.

Terms and conditions:

1. The indicated timeline may vary due to the service detail. Protein size shall between 10kDa to 90kDa. Please inquire Bio Bench if your protein exceeds the range.
2. Bio Bench may refuse the project if the information is incomplete.
3. Service content may vary due to different project goals.
4. Indicated price is for the service only. Any type of tax, fee, charge, tariff and/or interest is excluded.
5. Bio Bench reserves the right to decide if a project can be accepted or not.

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Case studies

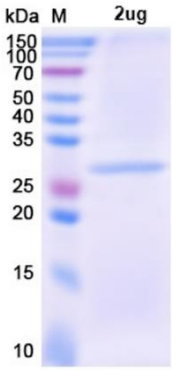

Fig.1 4-time transmembrane protein - human CLDN 18.1 (Cat: MOP024)
2μg: 2μg protein was loaded in the indicated lane. Protein purity is higher than 90%.

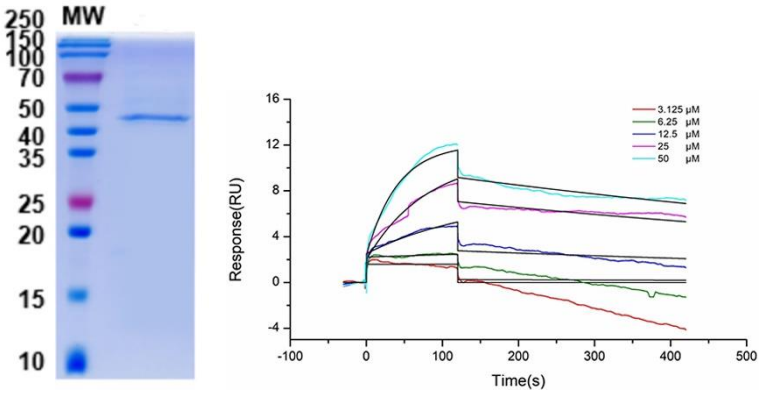

Fig.2 7-time transmembrane protein – human GPCR
2μg: 2μg protein was loaded in the indicated lane. Protein purity is higher than 90%. Right: hGPCR and donor binding affinity test.

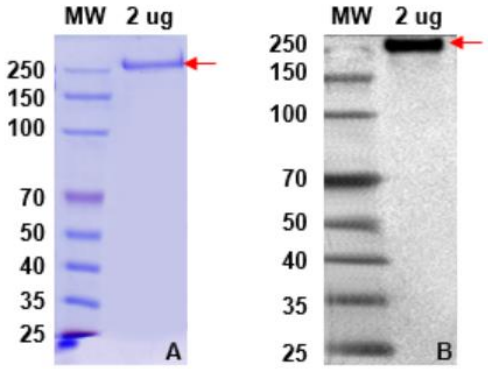

Fig.3 Large size protein – protein M(270kDa)
2μg: 2μg protein was loaded in the indicated lane. Protein purity is higher than 90%. Right: WB test, against His tag.

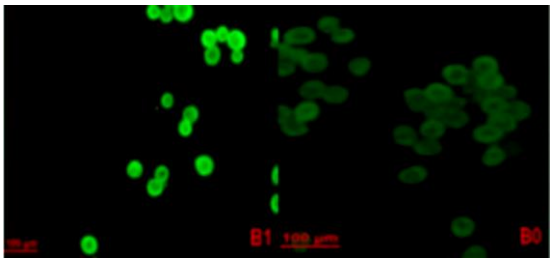

Fig.4 Complement protein - Mouse C3d, expressed in Sf9 cell.
Left: infected Sf9 cells expressing mC3d, immuno-fluorescent microscopy test, pAb against mC3d. Right: Control Sf9 cells.

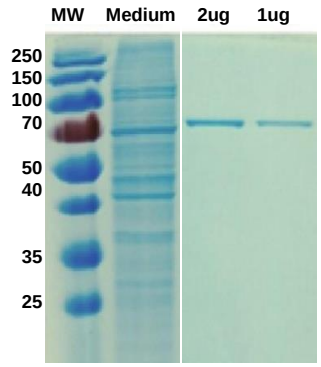

Fig.5 Cytolytic protein - Human perforin expression by Sf9 cell
Medium: protein expression in the culture medium. 2μg, 1μg: 2μg or 1μg protein was loaded in the indicated lane. Protein purity is higher than 90%.

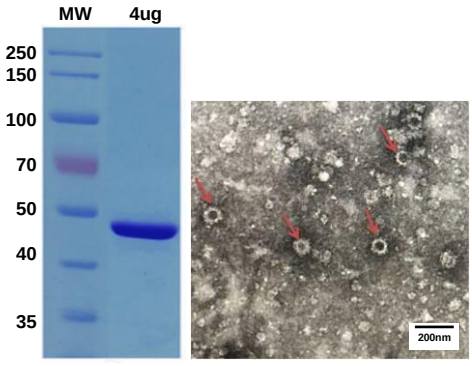

Fig.6 Virus-like particle – HPV L1 purification and electron microscopy.
4μg: 4μg purified protein was loaded in the indicated lane. Protein purity is higher than 90%. Right: electron microscopy image shows the VLP formation.

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