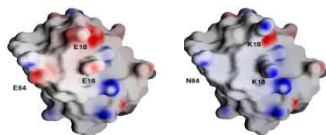


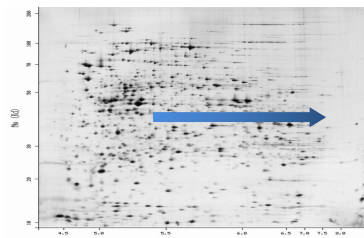
## AD-PURE™ SYSTEM

### Step. I. Charge Engineering (ADfuse™)

Charge engineering with ADfuse™



Protein Charge shift

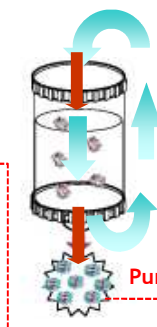
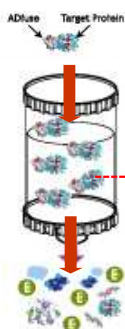


Most of all natural proteins *in E. coli* proteome, have pI vales below 7.0. ADfuse technology leads to pI 8.5~ 10.0 by reconstruction of fusion protein, therefore we can recover highly purified proteins not only from *E. coli* natural proteins but also from endotoxin, DNA, and lipids at first capturing step.

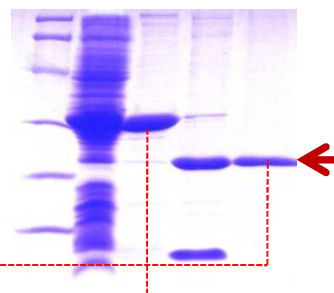
### Step. II. On-column Cleavage (ADzyme™)

Cation exchange resin

ADzyme™ treatment



S/M 1 2 3 4



We conduct on- column cleavage of fusion protein instead of elution at 1<sup>st</sup> capturing step. Our ADzyme™ exactly cut off the fusion partner from the interested protein. We can usually obtain over 90% purity only at this 1<sup>st</sup> step of purification process.

### Comparision for Technology

APTech's proprietary process technology enables us to manufacture proteins 3~ 10 times cheaper than its peers.

Item	APTech	Company A	Compnay B
Host	<i>E. coli</i>	<i>E. coli</i>	<i>Yeast</i>
Final purified hGH per fermentation broth	<b>1.2 g/L</b>	0.3 g/L	0.15 g/L
Purification Steps	<b>2~ 3</b>	8~ 10	7~ 8

## CONTRACT RESEARCH

### Overview

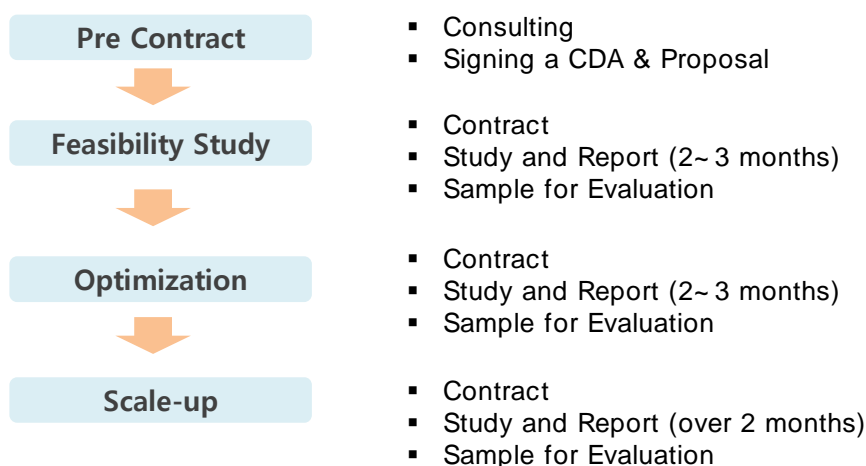
**Our Contract Research** proceeds with three steps.

**In Feasibility Study Step**, we confirm whether or not our ADpure System™ is working for client's proteins/peptides.

The following steps are **Optimization of Process and Scale-up Studies**.

At the completion of Contract Research, client can choose license-in of the technology or contract manufacturing at APtech.

### Procedure for CR



## PRODUCTS

### List of Our Protein Products

Product name	Full Name	Supply Unit
EGF	Epidermal Growth Factor	Contact us
VEGF	Vascular Endothelial Growth Factor	Contact us
FGF-1	Fibroblast Growth Factor-1	Contact us
bFGF	Basic Fibroblast Growth Factor	Contact us
IGF-1	Insulin like Growth Factor-1	Contact us
PDGF-AA	Platelet Derived Growth Factor-AA	Contact us
PDGF-BB	Platelet Derived Growth Factor-BB	Contact us
GM-CSF	Granulocyte Macrophage Colony Stimulating Factor	Contact us
hGH	human Growth Hormone	Contact us
GLP1A	Glucagon Like Peptide 1-A	Contact us
BMP2	Bone Morphogenetic Protein 2	Contact us
ProteinA	ProteinA	Contact us
ProteinG	ProteinG	Contact us

- Supplying quantities and prices can be individually discussed.
- All products meet international specifications such as USP or EP