

# Your strain, brought to scale.

Will it hold up at commercial scale? That's the hardest question in biomanufacturing.



## SERVICE 01

### High-Yield Strain Development

We optimize how your target protein is expressed, and raise its yield well above the benchmark.

## SERVICE 02

### Process Development and Contract Manufacturing

Your production strain. We take it from the lab to commercial scale, from first trial batch to routine manufacturing.

#### Typical challenges

Yields won't improve / Stuck at scale-up / Looking for a manufacturer that starts small

#### Titer (commercial-scale production)

**50 g/L**

Achieved in commercial production facilities

#### Yield gains over the benchmark

over

**90%**

Share of target proteins where a Spiber strain outperformed the benchmark

on average

**4<sub>x</sub>**

Average yield gain

up to

**40<sub>x</sub>**

Highest yield gain achieved

50 g/L is a production figure for Spiber's own protein, reached in our commercial plant, not a test-tube best case.  
(Technology: gene optimization + culture condition optimization)

#### One continuous path from lab to commercial scale

**1–10 L**

Jar fermenters  
Tsuruoka, Japan



**400 / 2,000 L**

Fermenters  
Tsuruoka, Japan



**Over 100 kL**

Commercial plant  
Rayong, Thailand

# We took our own material all the way to commercial production. Now let's take your product there.

It took us two decades to bring our protein materials to commercial scale.  
The technology and facilities we built along the way are now open to your product.

## SERVICE 01

### High-Yield Strain Development

#### STEP 1 We build the strain

We design genes from your target protein's sequence, build production strains and confirm expression

#### STEP 2 You evaluate

You test product samples in your own lab

#### STEP 3 License agreement

Once you are satisfied with the performance, the production strain and gene sequence are licensed to you

**First step: we build a set of candidate strains for one target protein. 5 gene designs, 8–12 weeks, from USD 8,000\* (excl. tax).**

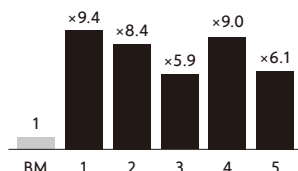
Strains we develop are normally provided under a paid license agreement. Terms are agreed case by case.

Host: *E. coli*

## CASE STUDIES

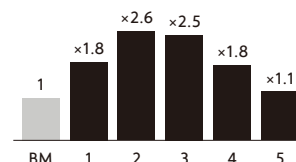
### Human FGF-2

All five Spiber-designed sequences beat the benchmark: 5.9–9.4x



### Human IFN-γ

All five Spiber-designed sequences beat the benchmark: 1.1–2.6x



\* Internal data. BM = benchmark sequence (before optimization by Spiber), 1–5 = Spiber-designed sequences. Improvements are relative values; results will vary by target protein.

## SERVICE 02

### Process Development and Contract Manufacturing

| Service                                      | Indicative price (excl. tax) * | Lead time      |
|----------------------------------------------|--------------------------------|----------------|
| Lab: 1–10 L jar fermentation evaluation      | From USD 2,000                 | Up to 3 months |
| 2,000 L fermenter: trial batch / production  | From USD 40,000                | Up to 6 months |
| Commercial-scale fermenters, Spiber Thailand | On request                     | On request     |

\* USD figures are indicative, converted from JPY.

## How it works



The researchers who develop your strain and your production process are involved from the beginning.



Details on our website: [spiber.inc/en/biofoundry](https://spiber.inc/en/biofoundry)

Spiber Inc.

Tell us where your project stands: [biopartnerships@spiber.inc](mailto:biopartnerships@spiber.inc)

**SPIBER BIOFOUNDRY**