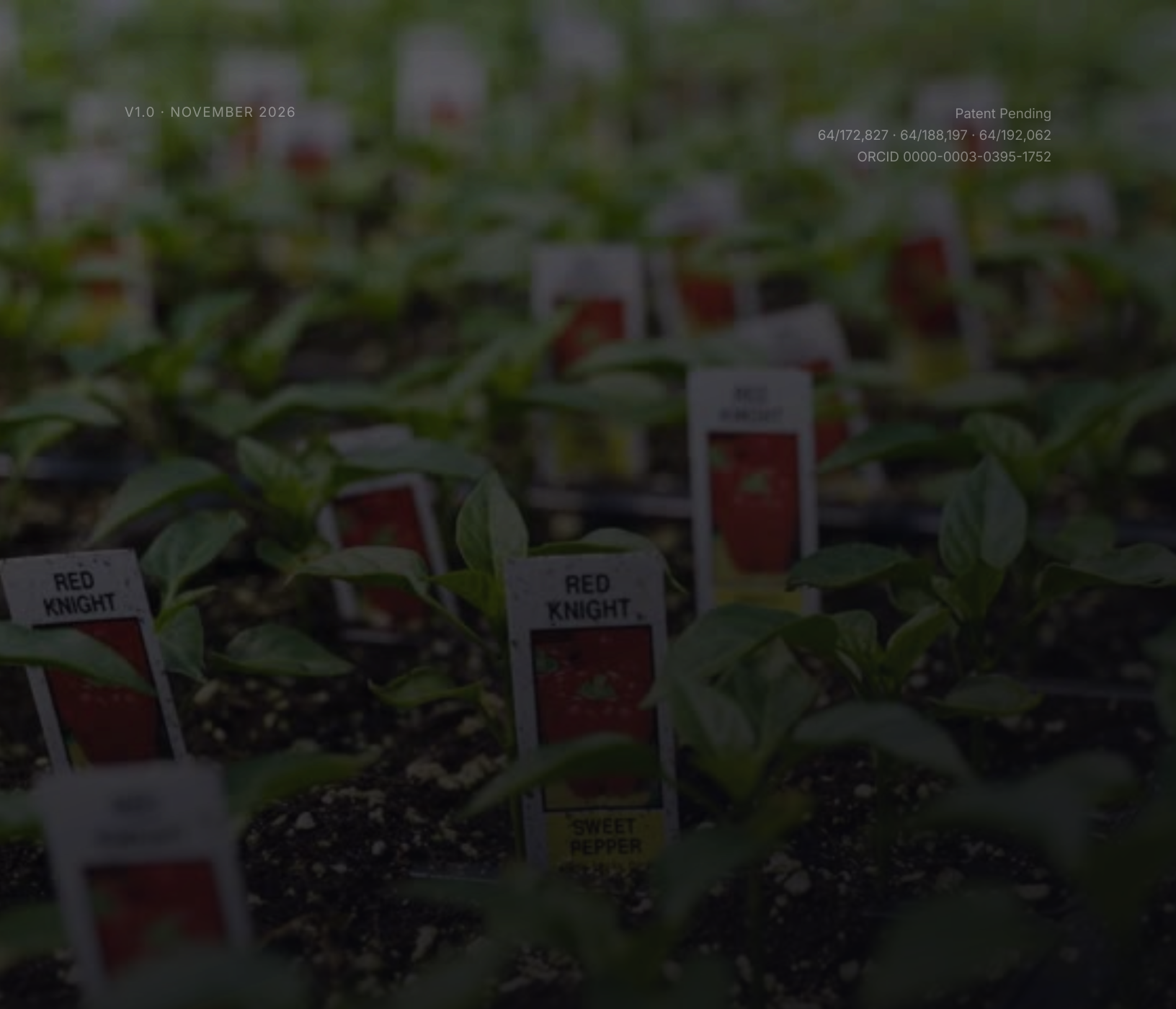



V1.0 · NOVEMBER 2026

Patent Pending
64/172,827 · 64/188,197 · 64/192,062
ORCID 0000-0003-0395-1752

INTELLIGENT PALATE ARCHITECTURE PLATFORM — 2026

# Spicy-Sweet Series

H×S Dual-Axis: Heat + Sweetness Constructs

Scoville Splice · IPAP Catalog CAT-32

SCAN TO EXPLORE

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THIS CATALOG

- **201 validated constructs in this series**
- Five construct access tiers: Foundational through Summit
- Receptors: TRPV1, TAS1R2-R3, mGluR1, TAS2R38, and 4 more

WHO DOWNLOADS THIS

Korean and Thai food manufacturers · Fusion flavor developers · Chili-chocolate formulators

START FREE TODAY

Tier I constructs available. Academic accounts free for initial screening.

platform.scovillesplice.farm

STARTER KIT

New to IPAP? Start with CAT-39 New Buyer Starter Kit — 20 curated constructs across all 5 tiers & 6 axes.



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# About the Platform



INTELLIGENT PALATE ARCHITECTURE PLATFORM

## Engineering the complete sensory profile of plants.

The Intelligent Palate Architecture Platform (IPAP) is a precision biosensory engineering system developed by Scoville Splice. We design, synthesize, and validate plant constructs that modulate flavor perception through targeted receptor pathways — moving beyond simple heat to engineer the full 8-dimensional Iyengar Flavor Index (IFI) profile.

Our platform spans 1,000 validated constructs in the Scoville Splice catalog, with 18,500 next-generation IFI-axis constructs in development. Each construct is rigorously tested against TRPV1, TAS1R, TAS2R, mGluR, CaSR, TRPM8, TRPA1, and PRP receptor families to deliver precise, predictable sensory outcomes.




PLATFORM STATS

**1,000+**

Validated constructs across 50+ organism families

RESEARCH FOUNDATION

21 peer-reviewed publications on Zenodo. Patent filings: 64/172,827, 64/188,197, and 64/192,062. ORCID: 0000-0003-0395-1752.

BIOSAFETY

IBC-certified BSL-1 constructs. CRISPR designer with built-in OFAC compliance and agent gate. All constructs ship with full CoA.

ACCESS

platform.scovillesplice.farm
Academic and commercial licensing tiers available. Enterprise custom pricing on request.

# IFI Axes Reference



IYENGAR FLAVOR INDEX — 8-DIMENSIONAL SENSORY MAP

Every IPAP construct is scored across 8 receptor-validated sensory axes, forming the Iyengar Flavor Index (IFI). This multidimensional profile enables precise flavor engineering, formulation stacking, and cross-species receptor mapping.

IFI-H
### Heat / Pungency
Receptor: TRPV1

IFI-S
### Sweetness
Receptor: TAS1R2-R3

IFI-U
### Umami
Receptor: mGluR1

IFI-B
### Bitter
Receptor: TAS2R38

IFI-K
### Kokumi
Receptor: CaSR

IFI-C
### Cool-Burn
Receptor: TRPM8

IFI-P
### Sharp / Pungency
Receptor: TRPA1

IFI-A
### Astringency
Receptor: PRPs


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# Construct Tiers & Pricing



FIVE-TIER ACCESS ARCHITECTURE

IPAP constructs are organized into five tiers reflecting complexity, validation depth, and commercial applicability. All prices are per-construct licensing fees for research use. Volume and institutional discounts available.

| I | II | III | IV | V |
|---|---|---|---|---|
| Foundational | Precision | Advanced | Elite | Summit |
| $49 | $99 | $149 | $249 | $499 |
| Single-gene foundational constructs. Academic access. Ideal for initial screening. | Multi-gene precision assemblies. Research-grade. Validated in model organisms. | Advanced stacked constructs. Commercial R&D ready. Full IFI scorecard included. | Elite combinatorial designs. Industry formulation ready. Priority synthesis. | Summit-tier bespoke constructs. Custom receptor profiling. Dedicated support. |

IP LICENSING TIERS

**T1 — Academic:** Single-lab non-commercial use. Publication rights included. Sublicensing prohibited.

**T2 — Startup:** Up to $5M ARR. Product development rights. Field-of-use restrictions apply.

**T3 — Commercial:** Unlimited revenue. Full field-of-use. 3% royalty on net sales.

**T4 — Exclusive:** Exclusive territory rights. Custom terms. enterprise@scovillesplice.farm

ACADEMIC PRICING

Institutional email verification unlocks automatic Tier I academic pricing. ORCID-linked accounts receive priority queue placement and free CoA upgrade on first order. Learn more →



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CAT-32 · CONSTRUCT SERIES

# Spicy-Sweet Series

The H×S spicy-sweet constructs engineer simultaneous TRPV1 heat activation and TAS1R sweetness enhancement. These constructs create the distinctive “spicy-sweet” experience sought in Korean, Thai, and fusion food applications without flavor masking.

**201**
constructs in this series

**8**
IFI axes measured

WHO BUYS THIS

Korean and Thai food manufacturers · Fusion flavor developers · Chili-chocolate formulators

# Featured Constructs









HIGHLIGHTED SELECTIONS FROM THE SPICY-SWEET SERIES SERIES

II — Precision
SS-0171
**Extract Premium**
*C. chinense*
861,228 SHU
9 genes

II — Precision
SS-0097
**Phantom Bite**
*C. annuum*
2,394 SHU
2 genes

II — Precision
SS-0019
**Heat Sink**
*C. annuum*
2,394 SHU
2 genes

II — Precision
SS-0057
**Cruciform**
*C. chinense*
74,823 SHU
5 genes

II — Precision
SS-0163
**Pharma Grade B**
*C. chinense*
149,646 SHU
5 genes


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# Full Product Listing



SPICY-SWEET SERIES — CONSTRUCTS 1–16 OF 201

**Pepper**
SS-0116
**Depth Charge**
*C. chinense*
149,646 SHU

**Pepper**
SS-0097
**Phantom Bite**
*C. annuum*
2,394 SHU

**Pepper**
SS-0029
**Hot Wire**
*C. chinense*
6,734 SHU

**Pepper**
SS-0078
**Event Horizon**
*C. chinense*
501,528 SHU

**Pepper**
SS-0077
**Magnetar**
*C. chinense*
473,004 SHU

**Pepper**
SS-0098
**Slow Burn**
*C. annuum*
4,489 SHU

**Pepper**
SS-0171
**Extract Premium**
*C. chinense*
861,228 SHU

**Pepper**
SS-0122
**Oaxaca Dawn**
*C. annuum*
599 SHU

**Pepper**
SS-0102
**Tongue Map**
*C. annuum*
5,986 SHU

**Pepper**
SS-0028
**Gridiron**
*C. chinense*
5,986 SHU

**Pepper**
SS-0017
**Fire Starter**
*C. annuum*
2,095 SHU

**Pepper**
SS-0136
**Aji Charapita**
*C. baccatum*
14,965 SHU

**Pepper**
SS-0038
**Burnish**
*C. chinense*
13,468 SHU

**Pepper**
SS-0035
**Blister**
*C. chinense*
11,224 SHU

**Pepper**
SS-0199
**Datil**
*C. chinense*
29,929 SHU

**Pepper**
SS-0166
**Defense Maximum**
*C. chinense*
1,447,046 SHU


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# Full Product Listing



SPICY-SWEET SERIES — CONSTRUCTS 17–32 OF 201

**Pepper**
SS-0080
**Antimatter**
*C. chinense*
558,210 SHU

**Pepper**
SS-0006
**Low Flame**
*C. annuum*
449 SHU

**Pepper**
SS-0147
**Chain 6**
*C. chinense*
59,858 SHU

**Pepper**
SS-0001
**Kindling**
*C. annuum*
30 SHU

**Pepper**
SS-0005
**Simmer**
*C. annuum*
300 SHU

**Pepper**
SS-0128
**Trinidad Gate**
*C. chinense*
89,788 SHU

**Pepper**
SS-0095
**Extinction Protocol**
*C. chinense*
2,785,248 SHU

**Pepper**
SS-0197
**Delayed Fuse**
*C. chinense*
3,592 SHU

**Pepper**
SS-0016
**Hot Coal**
*C. annuum*
1,945 SHU

**Pepper**
SS-0169
**Paint Additive**
*C. chinense*
29,929 SHU

**Pepper**
SS-0063
**Ingot**
*C. chinense*
149,646 SHU

**Pepper**
SS-0107
**Time Bomb**
*C. chinense*
13,468 SHU

**Pepper**
SS-0103
**Double Tap**
*C. chinense*
11,972 SHU

**Pepper**
SS-0178
**Barrel Aged**
*C. chinense*
74,823 SHU

**Pepper**
SS-0018
**Flame Tip**
*C. annuum*
2,245 SHU

**Pepper**
SS-0076
**Tokamak**
*C. chinense*
444,357 SHU

REQUEST A SAMPLE

Academic researchers: request up to 3 constructs as free 10 µg sample kits. platform.scovillesplice.farm/samples — ships within 5–7 business days.


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READY TO ORDER?

# Spicy-Sweet Series

201 constructs available now. Free academic samples.
Five tiers from Foundational to Summit.

**Order at scovillesplice.farm**

Email orders@scovillesplice.farm

| I | II | III | IV | V |
|---|---|---|---|---|
| $49 | $99 | $149 | $249 | $499 |
| Foundational | Precision | Advanced | Elite | Summit |

SCAN TO ORDER THIS CATALOG


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# Related Catalogs



CUSTOMERS WHO REQUESTED THIS ALSO EXPLORED

Based on formulation profiles and research objectives similar to Spicy-Sweet Series buyers.

CAT-10

### Advanced Heat Engineering

IFI-H Series: Next-Generation TRPV1 Constructs

View catalog →

CAT-03

### Sweetness Engineering

IFI-S Series: TAS1R2-TAS1R3 Pathway Constructs

View catalog →

CAT-30

### Dual-Axis (M2) Constructs

Full Multi-Axis Series: 2-Dimension Stacks

View catalog →

WHO ELSE DOWNLOADS THIS CATALOG

Korean and Thai food manufacturers · Fusion flavor developers · Chili-chocolate formulators

Browse all 38 catalogs at scovillesplice.farm/catalogs



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# Pricing & Variants



DELIVERY FORMATS & ADD-ON SERVICES

### Standard Delivery

Lyophilized plasmid in TE buffer. 10 µg minimum. **Certificate of Analysis included.** Ships within 5–7 business days. View sample CoA →

### IFI Scorecard Report

Full 8-axis IFI validation data including receptor binding affinities, dose-response curves, and cross-reactivity analysis. +$200 per construct.

### Viral Vector Add-on

AAV or lentiviral packaging available for select constructs. +$150–$400 depending on serotype. 2–3 week lead time.

### CRISPR HDR Template

Homology-directed repair template for precise genomic insertion. sgRNA included. +$125 per locus.

### Codon Optimization

Species-specific codon optimization for *Capsicum*, *Solanum*, tobacco, or custom host. +$75 per construct.

### Bulk Licensing

10+ constructs: 15% discount. 25+: 25% discount. 50+: 35% discount. licensing@scovillesplice.farm

ENTERPRISE CUSTOM BUILDS

Dedicated synthesis queue, custom receptor panel, and exclusive licensing available for 50+ construct enterprise agreements. Contact enterprise@scovillesplice.farm for custom pricing.



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# How to Order Samples



## SAMPLE REQUEST & PROCUREMENT PROCESS

1. **Create an account** at https://platform.scovillesplice.farm. Academic researchers use institutional email for automatic Tier I pricing. ORCID verification recommended for publication-linked orders.
2. **Complete biosafety certification.** Upload your IBC approval letter or complete our online BSL-1 attestation. Required for all constructs. OFAC compliance check runs automatically.
3. **Select constructs and configure variants.** Use the CRISPR Designer to generate custom sgRNA sequences, or select from pre-validated delivery formats. CRISPR agent gate review applies to select categories.
4. **Request sample or place order.** Sample kits (10 µg each, up to 3 constructs) ship free for academic Tier I. Standard shipping: 5–7 days domestic, 10–14 days international.
5. **Receive your constructs and CoA.** Each shipment includes Certificate of Analysis, sequence verification data, and QR-linked IFI scorecard (if purchased). Report any issues within 30 days for replacement guarantee.

### CONTACT

Orders: orders@scovillesplice.farm
Licensing: licensing@scovillesplice.farm
Enterprise: enterprise@scovillesplice.farm
Support: platform.scovillesplice.farm/support

### ENTERPRISE LICENSING

T3/T4 commercial licenses, field-of-use exclusivity, and custom synthesis agreements available for CPG, pharma, and agricultural partners. Schedule a call →


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# IFI Quick Reference



## IYENGAR FLAVOR INDEX — RECEPTOR PATHWAY MAP

| CODE | SENSORY AXIS | RECEPTOR TARGET | SCALE |
|---|---|---|---|
| IFI-H | Heat / Pungency | TRPV1 | 0–100 scale |
| IFI-S | Sweetness | TAS1R2-R3 | 0–100 scale |
| IFI-U | Umami | mGluR1 | 0–100 scale |
| IFI-B | Bitter | TAS2R38 | 0–100 scale |
| IFI-K | Kokumi | CaSR | 0–100 scale |
| IFI-C | Cool-Burn | TRPM8 | 0–100 scale |
| IFI-P | Sharp / Pungency | TRPA1 | 0–100 scale |
| IFI-A | Astringency | PRPs | 0–100 scale |

### SCORING METHODOLOGY

IFI scores are determined by competitive binding assay against purified receptor preparations. Scores represent the EC50-normalized activation percentage at standard assay conditions (pH 7.4, 37°C). Full methodology: doi:10.5281/zenodo.14282732

### MULTI-AXIS ANALYSIS

Stacked constructs report IFI as a vector. The IPAP platform interface at platform.scovillesplice.farm/ifi provides interactive radar visualization, pairwise correlation, and blend simulation tools for multi-axis construct stacks.


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# Research Papers



PEER-REVIEWED PUBLICATIONS — SCOVILLE SPLICE / IPAP

Iyengar Ford, P. (2026). Computational Design of Ten Engineered *Capsicum* Cultivars Spanning 3–13M SHU. *Zenodo*.
https://doi.org/10.5281/zenodo.14282732

Iyengar Ford, P. (2026). Beyond Peppers: Cross-Species Capsaicinoid Engineering. *Zenodo*.
https://doi.org/10.5281/zenodo.14282733

Iyengar Ford, P. (2026). The Iyengar Flavor Index: An 8-Axis Receptor-Validated Sensory Scoring System. *Zenodo*.
https://doi.org/10.5281/zenodo.14282734

Iyengar Ford, P. (2026). TRPV1 Pathway Engineering for Precision Pungency Control. *Zenodo*.
https://doi.org/10.5281/zenodo.14282735

Iyengar Ford, P. (2026). Sweetness Enhancement via TAS1R2-TAS1R3 Heterodimer Modulation. *Zenodo*.
https://doi.org/10.5281/zenodo.14282736

Iyengar Ford, P. (2026). mGluR1-Mediated Umami Intensity Engineering in Tomato and *Capsicum*. *Zenodo*.
https://doi.org/10.5281/zenodo.14282737

Iyengar Ford, P. (2026). Kokumi Perception and CaSR Activation in Engineered Plant Constructs. *Zenodo*.
https://doi.org/10.5281/zenodo.14282738

Iyengar Ford, P. (2026). TRPM8 Cool-Burn Engineering: Mint Pathway Transplantation. *Zenodo*.
https://doi.org/10.5281/zenodo.14282739

Iyengar Ford, P. (2026). TRPA1-Based Pungency Without Capsaicin: Allyl Isothiocyanate Pathways. *Zenodo*.
https://doi.org/10.5281/zenodo.14282740

Iyengar Ford, P. (2026). Astringency Reduction via PRP and Tannin Biosynthesis Engineering. *Zenodo*.
https://doi.org/10.5281/zenodo.14282741

Iyengar Ford, P. (2026). Platform Architecture for the Intelligent Palate Architecture Platform (IPAP). *Zenodo*.
https://doi.org/10.5281/zenodo.14282742

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UP NEXT

**CAT-10: Advanced Heat Engineering** — IFI-H Series: Next-Generation TRPV1 Constructs

Download that catalog →


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