

Eat Well, Live Well.



Beyond the Label: Reframing Food Safety Through Science and Storytelling

Ajinomoto Health & Nutrition North America, Inc.
Solutions & Ingredients



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Senior Scientist, Ingredient Innovation

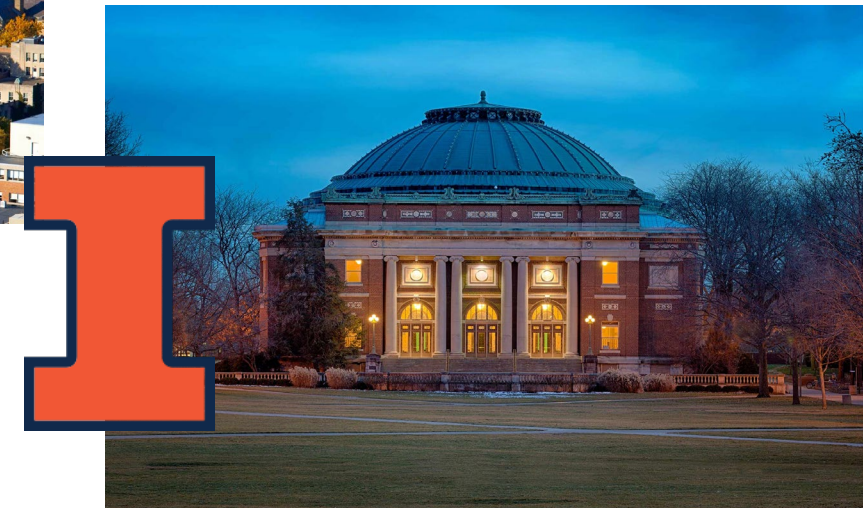


B.S. Food Technology (2014-17)
University of Delhi, India

Masters in Food Science (2018-19)
Cornell University, NY, USA



Ph.D. in Food Science and Human
Nutrition, UIUC (2019-23)



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Hamburg, Germany



Cleveland, Ohio



Loyola University Chicago





What is Umami?



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The Discovery of Umami

1908

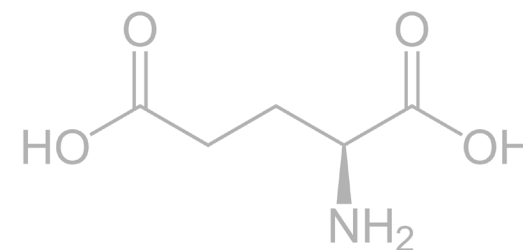
Dr. Ikeda discovered glutamate as the source of savory taste, which he termed umami

1909

Launch of the sodium salt of glutamate as the first umami seasoning, MSG

2002

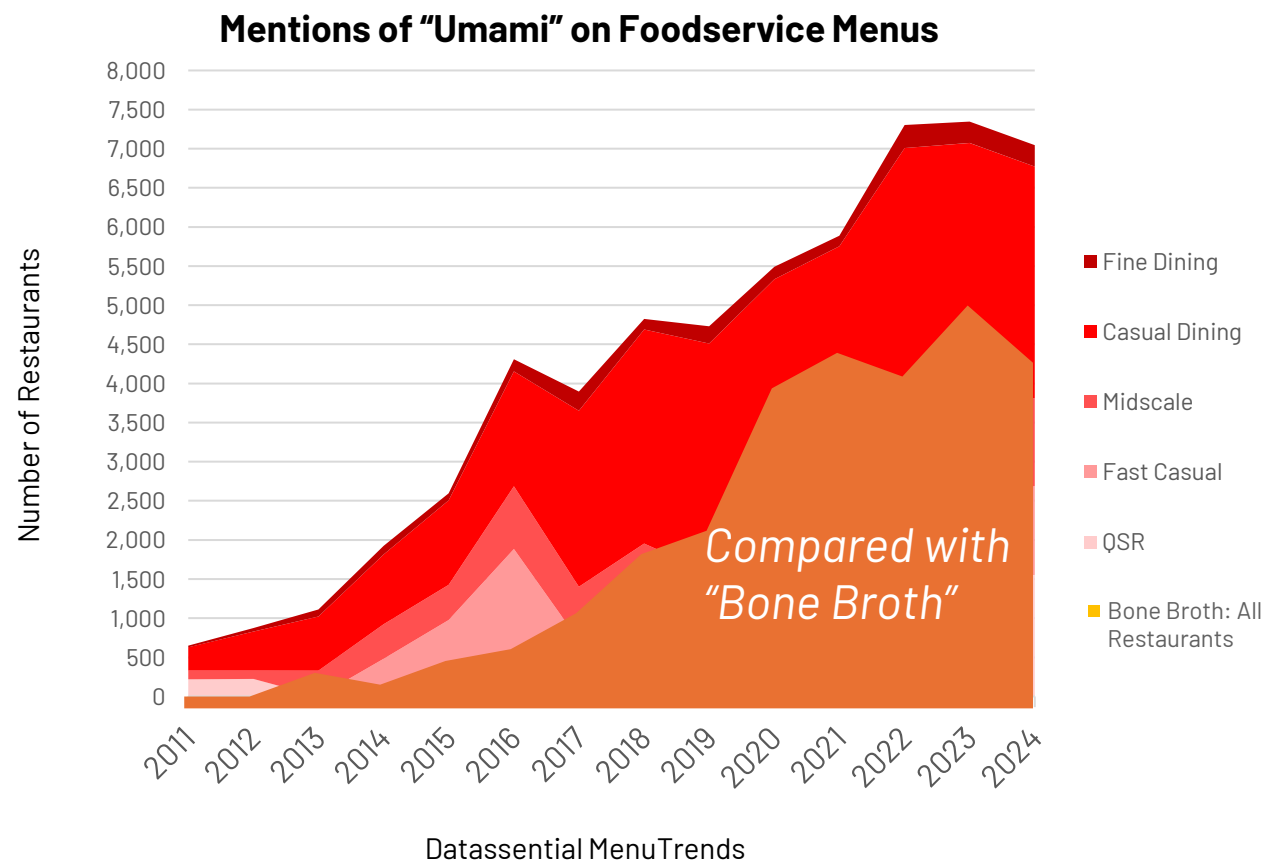
Umami recognized as the fifth taste at the International Symposium on Glutamate



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Umami as a Consumer Term



The number of restaurants with menus featuring "Umami" has exploded; 190% growth since 2014, with Fine Dining leading the way

Past 2-year CAGR of "umami" as appearing in online conversations:

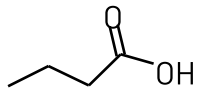
	161.12%	Confectionery
	115.87%	Alcoholic Beverage
	50.93%	Beverage
	22.14%	Bakery
	7.62%	Snacks
	5.87%	Dairy
	1.25%	Ready-to-Eat

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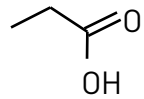


The Tastes of Amino Acids

Umami



Glutamate

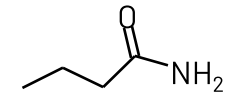


Aspartate

Sweet



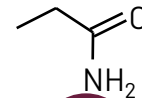
Glycine



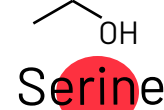
Glutamine



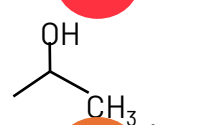
Alanine



Asparagine



Serine

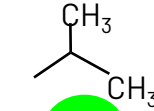


Threonine

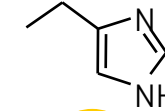


Proline

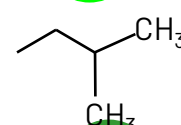
Bitter



Valine



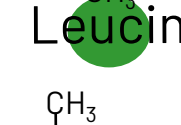
Histidine



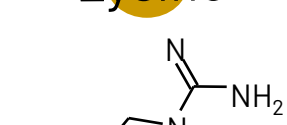
Leucine



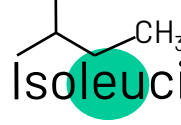
Lysine



Isoleucine



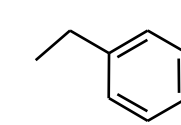
Arginine



Phenylalanine



Cysteine



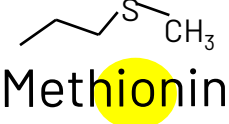
Phenylalanine



Methionine



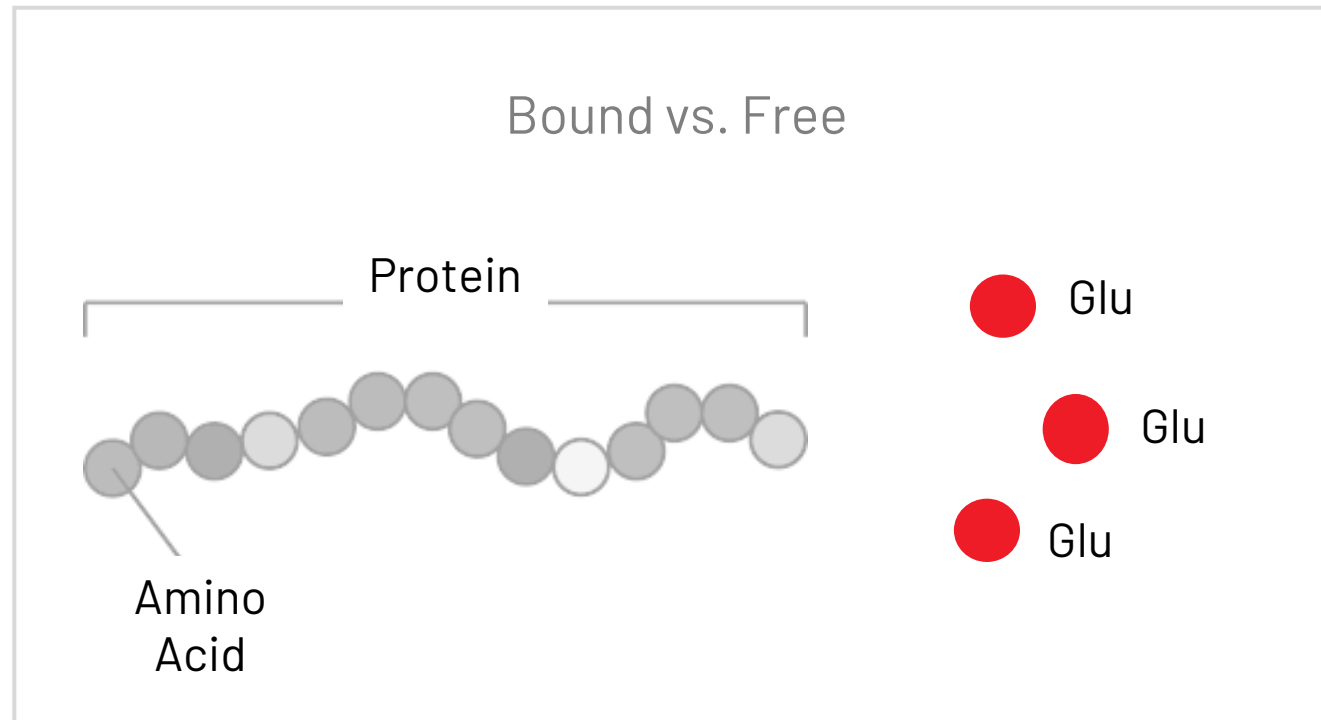
Tyrosine



Tryptophan

Glutamate

One of 20 amino acids found in nature



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The Science of Umami

Glutamate molecules bind to umami taste receptors



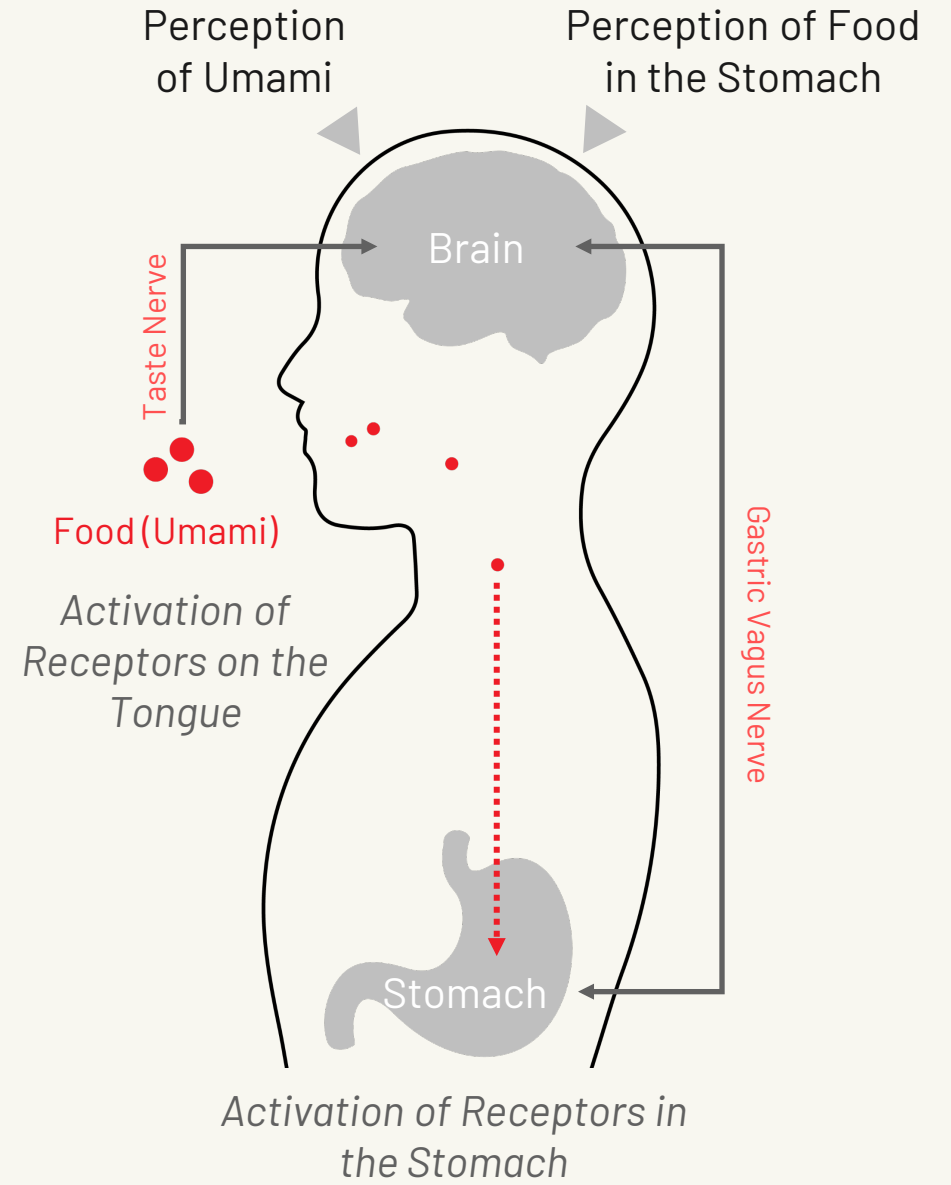
Lasts longer
than other
tastes



Increases
salivation



Spreads
throughout
the tongue



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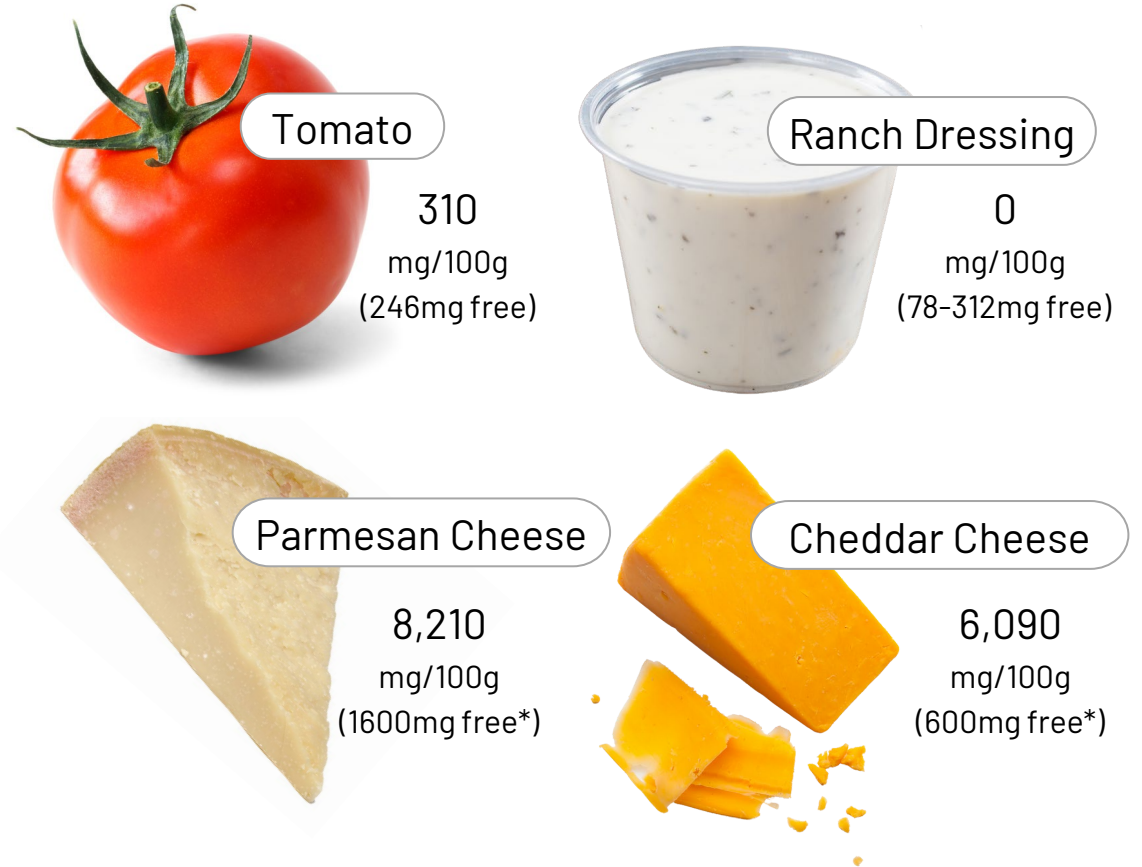
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Free Glutamate

A molecule of glutamate that is not bound to anything else

Umami

Taste sensation derived from free glutamate binding to the taste receptor



* Free glutamate in cheeses will vary based on degree of aging

DIETARY GLUTAMATE CONSUMPTION



Over 94% of dietary glutamate is metabolized in the small intestine, where it serves as a primary energy source (Burrin and Stoll, 2009)



MSG is self-limiting; more does not necessarily taste good

13g

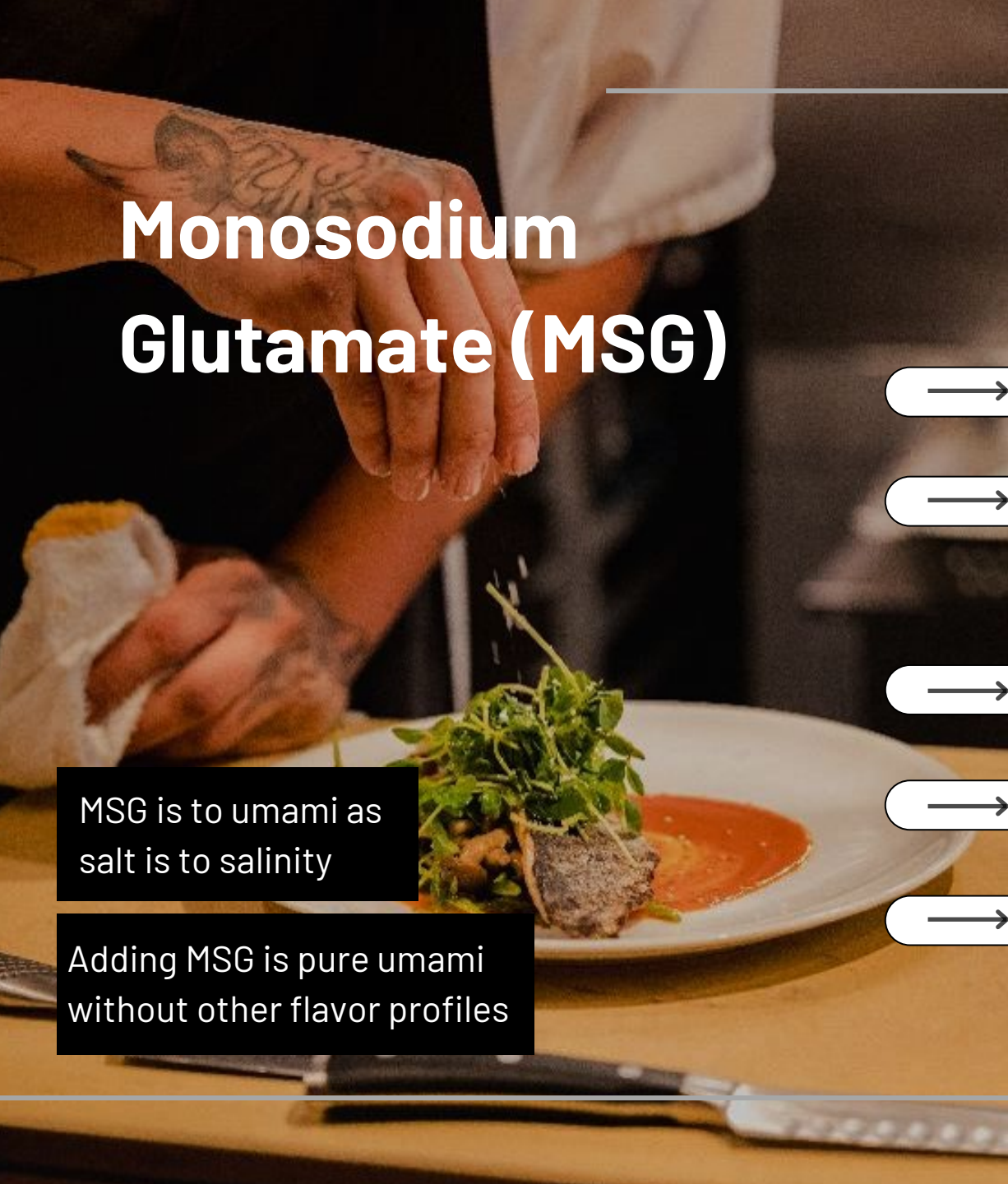
**An average adult consumes
~13 grams of free glutamate
daily from the protein in food**

0.55g

**MSG intake is estimated
at ~0.55 grams per day**

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Monosodium Glutamate (MSG)

MSG is to umami as
salt is to salinity

Adding MSG is pure umami
without other flavor profiles



The sodium salt of glutamate



Separates into sodium and glutamate when
exposed to liquid (saliva or in food)



Safe to use and commonly used around the world



Body recognizes free glutamate regardless of source



MSG contains 12% sodium (NaCl has 40%)

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FOOD & WINE

Amp Up Your Cooking With Chefs' Favorite Secret Ingredient

Get to know MSG and how to use this versatile ingredient in everyday cooking.



daily meal

CULTURE > FOOD HISTORY

Finally, The Stigma Around MSG Is Ending

Tasting Table.

It's Time To Put The Biggest Misconception About MSG To Rest

The Atlantic

MSG Is Finally Getting Its Revenge

The much-maligned seasoning could be the secret to eating less salt.

BUSINESS INSIDER

Racism made us believe MSG was dangerous. Now, chefs are bringing the once-controversial seasoning back into the spotlight.

By Brianna Holt

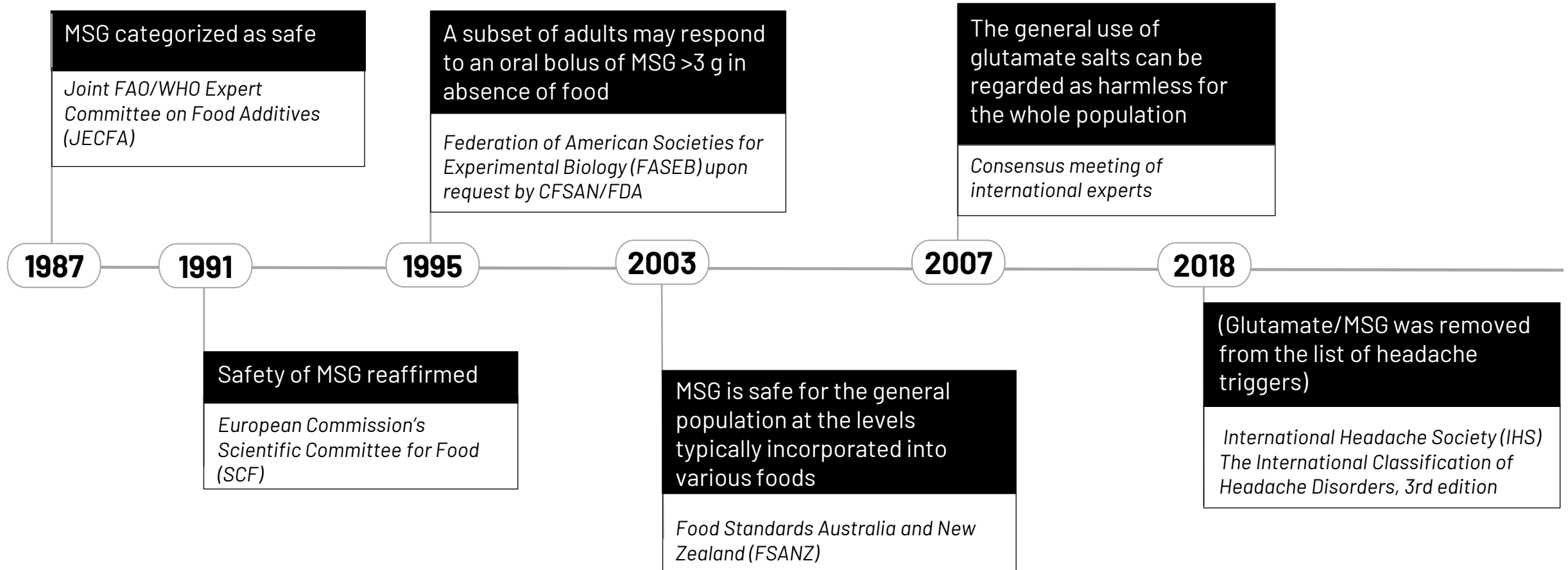


Why do some people think MSG is bad for you?

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MSG Safety has been reviewed over the past 30+ years



Sources: JECFA (1988) L-glutamic acid and its ammonium, calcium, monosodium and potassium salts; SCF (1991) Reports of the Scientific Committee for food on a first series of food additives of various technological functions; FASEB (1995) Analysis of adverse reactions to monosodium glutamate; Food Standards Australia New Zealand (2003) Monosodium Glutamate A Safety Assessment; Beyreuther K, et al (2007) Consensus meeting: monosodium glutamate – an update; IOM (2010) Strategies to Reduce Sodium Intake in the United States; NASEM (2019) Dietary Reference Intakes for Sodium and Potassium.

What Changed the Perception of MSG?

The New England
Journal of Medicine

April 4, 1968

VOL. 278 NO. 14

CHINESE-RESTAURANT SYNDROME

In 1968, a letter to the editor described the author's anecdotal account of generalized weakness, palpitations and numbness in the arms after eating at a Chinese restaurant. He noted that any number of ingredients may have caused his symptoms – sodium, alcohol from the cooking wine, MSG.

Subsequent studies on animals that injected extremely high doses of MSG produced harmful effects (much like is seen with other dietary substances delivered at supraphysiological levels).

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INFLECTION POINTS FOR MSG ACCEPTANCE



The NEW ENGLAND
JOURNAL of MEDICINE



1968

A letter to the editor of New England Journal of Medicine states anecdotal link between Chinese food and nebulous symptoms, implicates salt, cooking wine or MSG as cause.

2018

Ajinomoto kicks off US effort to shift the perception of MSG with first World Umami Forum.

2018

The International Headache Society removes MSG from its list of likely causes for headaches.

2020

Merriam-Webster Dictionary updates definition of Chinese Restaurant Syndrome due to lack of science and xenophobic origins of the term.

2021

Ajinomoto launches KnowMSG campaign.

2021

Whole30 removes MSG from its unacceptable ingredients list.

2024

Ajinomoto asks NEJM to retract 1968 letter to the editor.



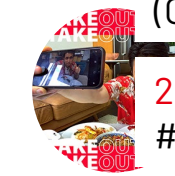
2018

World Umami Forum



2019

#RedefineCRS
(Chinese Restaurant Syndrome)



2020

#TakeOutHate Campaign



2021

#KnowMSG



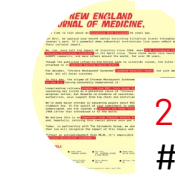
2022

#DinnerWithGoop



2023

#CancelPizza



2024

#RevisitCRS

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Foods with Umami Inherently Present

Free Glutamate
(per 100g)



1200-1600 mg



250 mg



40 mg



230-3380 mg



400-1700 mg



220-670 mg



340 mg



720-1400 mg

Foods with Added MSG



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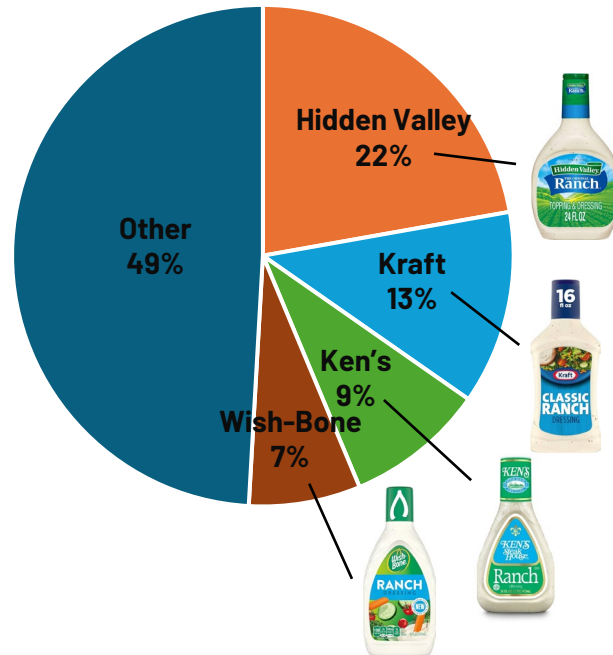
MSG is an Integral Part of Our Diet

"An average adult consumes approximately 13 grams of glutamate each day from the protein in food, while intake of added MSG is estimated at around 0.55 grams per day."

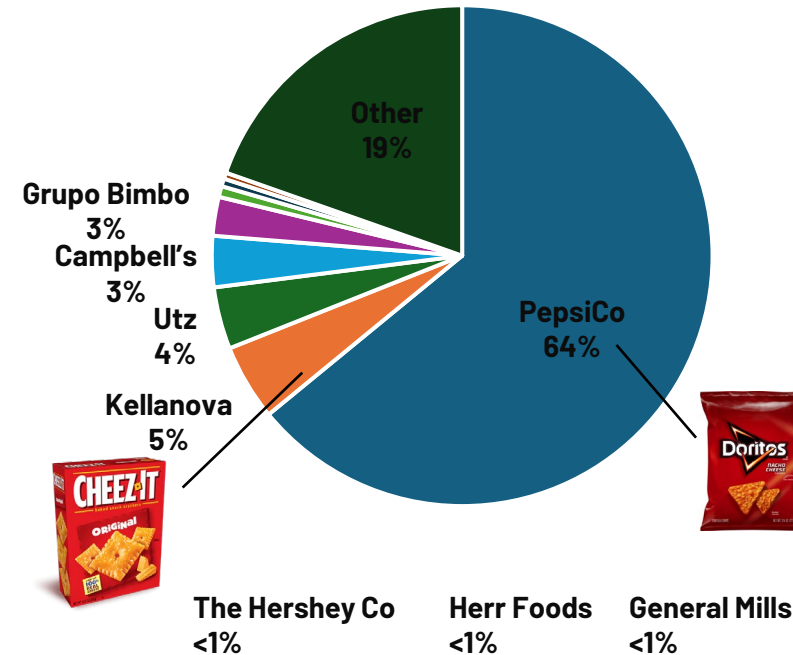


Brands that use MSG hold majority market share in their respective categories.

Market Share of Dressings¹



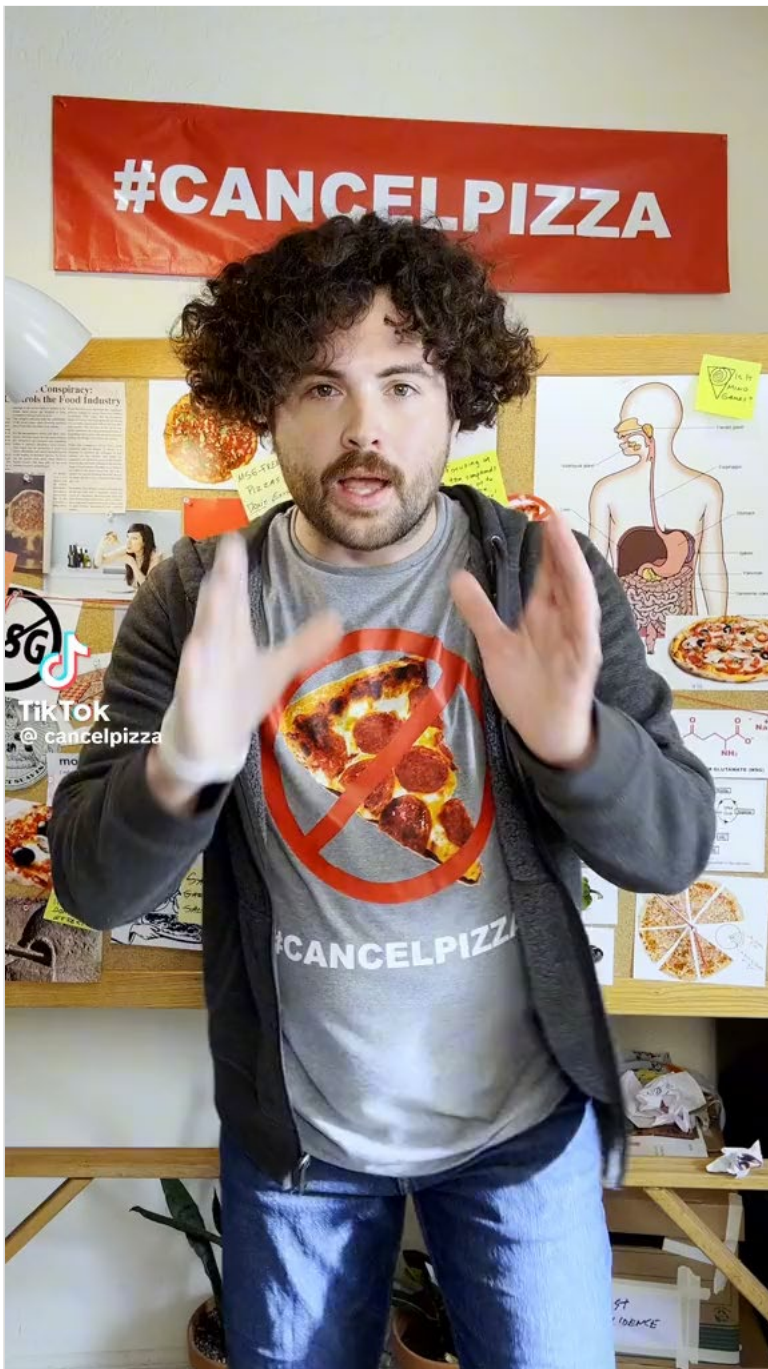
Market Share of Salty Snacks¹



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¹Euromonitor Passport



Who is Ajinomoto?
Know MSG and
#CancelPizza



@know_msg | @cancelpizza



@knowmsg | @cancelpizza

#CancelPizza Campaign

Objective

Bring forward facts about MSG in an effort to combat misinformation that is ultimately rooted in xenophobia and poorly conducted research in the 1970s.

Concept

From xenophobic myths to blatant misinformation, the constant attacks on MSG have caused this harmless ingredient to be banned from restaurants and grocery stores.



Campaign Reach

**Pizza is
totally fine.
So is MSG.**

We launched this campaign to remind people that not only is MSG inherently found in some of our favorite toppings, it's also pretty delicious. So, if people are OK with pizza, they should be OK with MSG too, right??



SOCIAL MEDIA

24.5 MM

Impressions across all campaign posts

45.7 K

Engagements across all campaign posts

TRADITIONAL MEDIA

892 MM

Total impressions

424

Total placements

PROBING DIRECT MSG PERCEPTION



146 MILLION MINDS CHANGED

MSG Consumer Perception¹

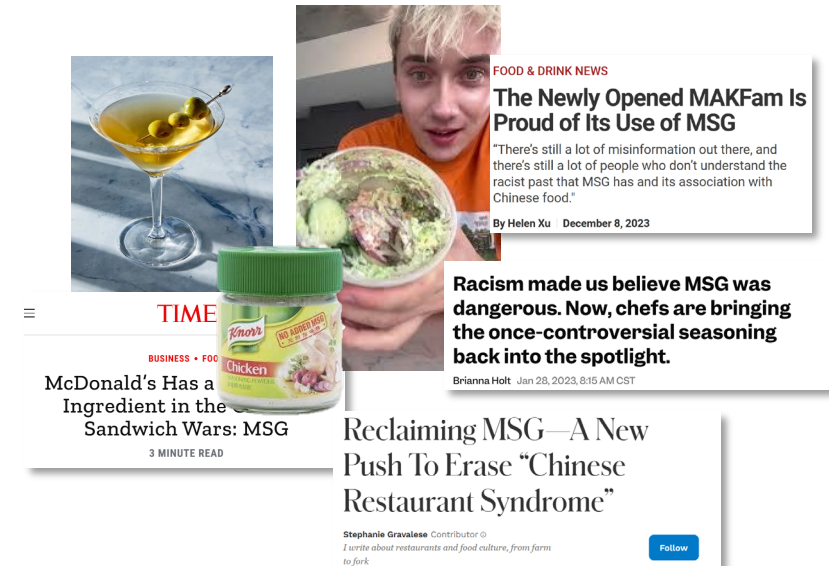
Professionals who believe MSG is safe to eat



+24%
since 2018



+18%
since 2018



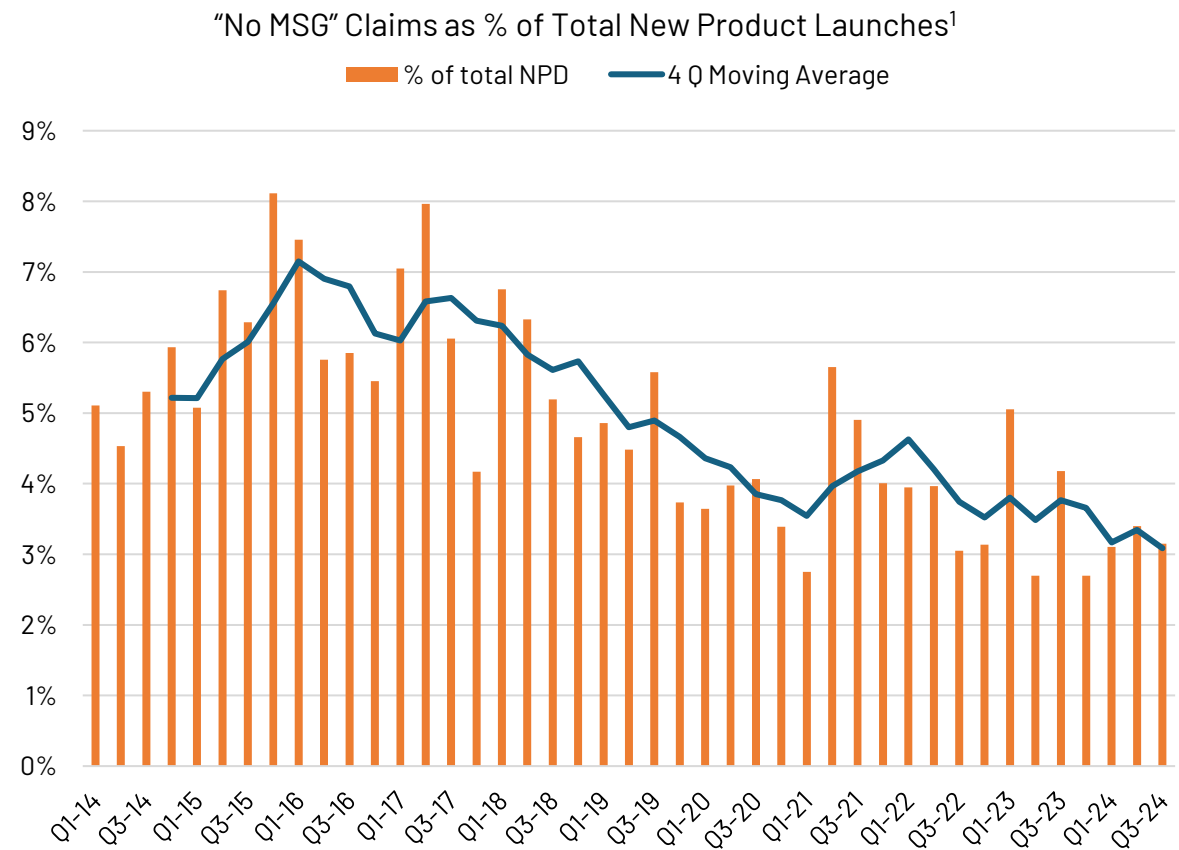
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¹Ajinomoto Survey

Decreasing Negative Exposure Leads To Decrease In Avoidance

54% decrease in use of “No MSG” claims since 2018



**IN 2024, ONLY 6% ARE
TRUE AVOIDERS OF MSG²**

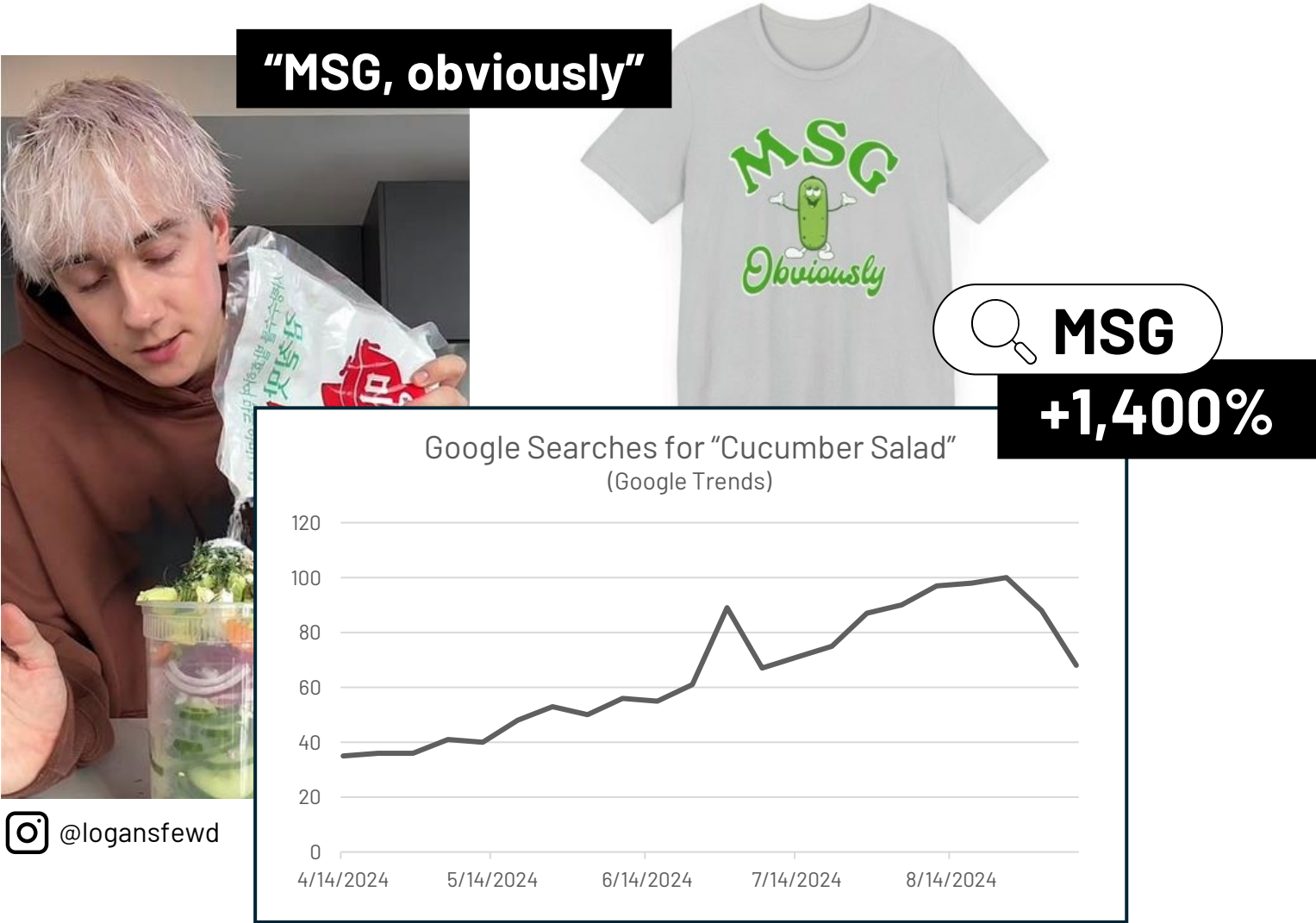
¹Innova Market Insights New Product Development Database

²Ajinomoto Edelman Annual Tracking Survey, N=2000, 2024

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Foodservice Positivity Impacts Pop Culture



Everyone is eating cucumber salad right now because of this one TikToker



TikTok's Viral Cucumber Guy Shares 5 Recipes Featuring His Favorite Vegetable



Millions Of People Are "Eating An Entire Cucumber" In This Viral TikTok Trend, So I Tried It To Find Out If It's Worth The Hype

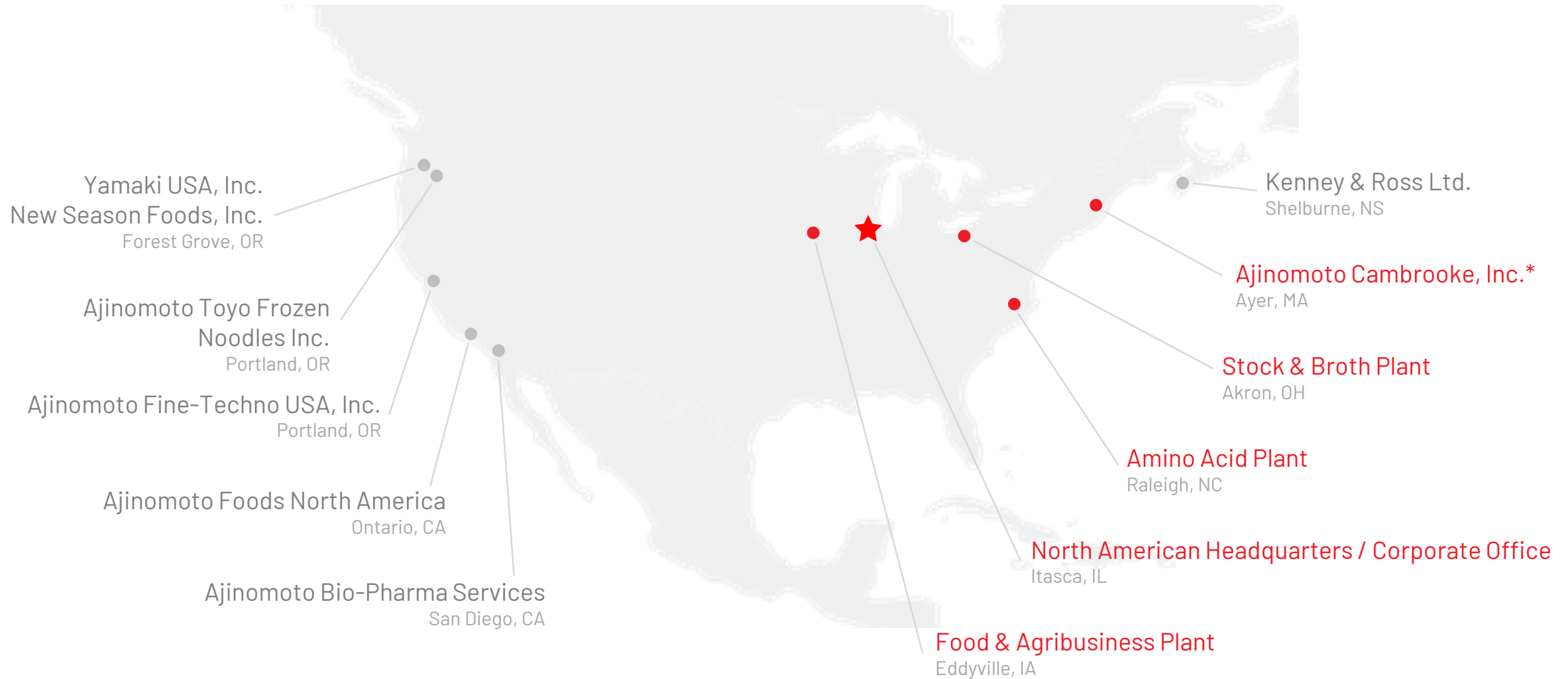


Ask TikTok's 'Cucumber Boy' How to Prepare a Cucumber



The Viral Recipe That Has Us Rushing to the Store to Buy Cucumbers

Ajinomoto Health & Nutrition North America, Inc.



● Ajinomoto Health & Nutrition

★ Headquarters

* Subsidiary of Ajinomoto Health & Nutrition

● North American Affiliate

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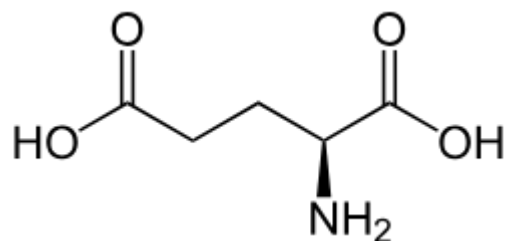


AminoScience

Our unique scientific approach to maximizing our resources, resolving social issues, and contributing to people's well-being.

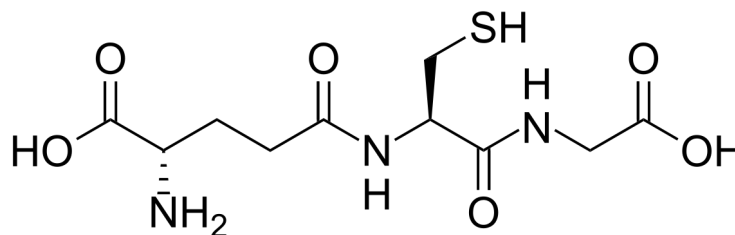
UMAMI

Glutamic acid is umami, binding to dedicated taste receptors in the mouth and GI tract.



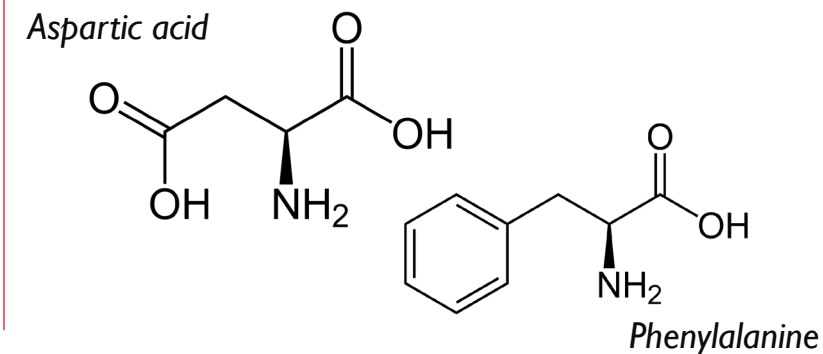
KOKUMI

Discovery of kokumi via glutathione, a tripeptide of cysteine, glutamic acid, and glycine.



ASPARTAME

Two amino acids, aspartic acid and phenylalanine, form the basis of aspartame.



The Ajinomoto Group continues to rigorously research amino acids with a focus on the four functions, **flavor**, **nutrition**, **physiology**, and **reactivity**.

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Bringing Great Taste & Nutrition Full Circle

Like our world-class team, we work better *together*.

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