

CELLULAR AGRICULTURE NOMENCLATURE: Optimizing Consumer Acceptance

Published September 2018
Updated January 2020

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Executive Summary

The purpose of this research project was to better understand consumer perceptions of names used to describe meat produced through cellular agriculture. We generated a comprehensive list of potential names and then conducted a series of consumer studies to test name outcomes.

The study included four distinct phases. Phase 1 was a stakeholder study, which generated a list of 74 names to consider for consumer testing. Phase 2 was a consumer survey to assess viability of a shorter list of 31 names selected from the Phase 1 list. Phases 3 and 4 were consumer experiments testing the top five selected names from the Phase 2 survey. These five names were: “clean meat,” “cell-based meat,” “craft meat,” “cultured meat,” and “slaughter-free meat.” These experiments were designed to test the unique influence of each of these names on consumers’ perception of the name itself (including the degree to which the name sounds appealing, accurately describes the product, and differentiates from conventional meat). The experiments also tested the unique influence of each of the names on consumers’ behavioral intentions, including likelihood of trying and of purchasing the product.

The results from Phase 3 replicated in the Phase 4 experiment, lending additional validity to the results. Overall, “slaughter-free,” “craft,” “clean,” and “cultured” performed best in name appeal, “slaughter-free” and “cell-based” performed best in descriptiveness and differentiation, and “slaughter-free” and “craft” performed best in likelihood of trying and of purchasing the product. Many of the names that were more appealing to consumers achieved low ratings for descriptiveness, while many of the names that consumers rated higher in descriptiveness achieved low ratings for appeal. The one exception was the name “slaughter-free meat,” which

ranked first or second for all tested outcome variables (appeal, descriptiveness, differentiation, likelihood of trying, and likelihood of purchase).

Consumers are a key audience to consider when selecting a name to describe any new product. The data from this research project suggest that the name “slaughter-free meat” is most likely to result in the highest consumer acceptance, and therefore may be well-suited for certain marketing applications. However, the name “slaughter-free” may not be viewed as preferable terminology by all audiences, and therefore may not ultimately be an optimal name when considering criteria beyond those tested in this research.

This research project provided key data to understand consumer perception of names. The top five names tested in the experiments were in part selected because they are currently in use. The field of cellular agriculture may benefit from additional research that seeks to optimize nomenclature not only for consumer acceptance, but also for additional factors necessary for market success. These factors may include, for example, the neutrality of the term, whether it serves as a category descriptor, and whether it may be accepted as a regulatory and labeling term on product packages.

Finally, it should be noted that this report is preliminary in nature. Given that the naming of cellular agriculture products is a pressing topic, we opted to release topline results ahead of deeper analyses. This preliminary report provides a brief description of the method used in each project phase, followed by topline results. For those interested in a detailed view of the method and results, the appendices provide the full surveys, demographic characteristics, and descriptive and inferential statistics. We will release an updated report in the near future, which will include the results of qualitative analyses as well as an assessment of demographic differences in the quantitative measures.

DECEMBER 2019 UPDATE

Since the publication of this 2018 report, GFI has conducted additional nomenclature studies and collaborative projects. In September 2019, GFI [adopted the term cultivated meat](#) and shared a set of [communication tools](#) for explaining the concept of meat cultivation in familiar, understandable, and transparent language. Here are additional studies and resources:

- A [qualitative analysis](#) of the connotative associations with each of the names tested in this 2018 study
- A [2019 pilot focus group study](#) on nomenclature and meat cultivation framing
- A [2019 project report](#) on science communication and nomenclature
- A [webpage](#) on the meat cultivation concept, communication tools, and blog post.

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INTRODUCTION

Questions continue to arise regarding the best terminology to use for meat produced through cellular agriculture. Numerous words have been used to describe the product, most commonly “clean meat” or “cultured meat” within the field of cellular agriculture. Other names that have been used in the media include, for instance, “lab-grown meat” and “tissue-engineered meat.”

Previous studies focusing on consumer acceptance indicated that clean meat was the best of the terms that were being discussed. For instance, in 2016 The Good Food Institute (GFI) conducted a consumer experiment testing five terms (cultured, pure, clean, safe, and meat 2.0). [Results](#) indicated that the names “safe meat” and “clean meat” generated the greatest consumer acceptance. These terms were selected in a manner similar to the present study, by asking for input from startup co-founders, nonprofit executives in the field, academics, and others, and then narrowing the pool of terms to those that were most popular among that group. Though “safe meat” performed slightly better than “clean meat,” GFI determined that safe meat was not an optimal term since no meat is perfectly safe (studies link meat to a host of health problems). Also, “clean” was a more conclusively supported product benefit and bore a similarity to “clean energy” that might help consumers relate to the term. Later that year, the nonprofit organization Animal Charity Evaluators (ACE) also conducted an experiment, this time comparing the terms “clean” and “cultured.” [Results](#) again indicated that the name “clean meat” would result in greater consumer acceptance, though the authors noted that the term “clean” might not be optimized in terms of other factors, including the neutrality and clarity of the term. In 2017, the organization New Harvest commissioned a focus group study on cellular agriculture. Qualitative [results](#) indicated that consumers preferred the name “clean meat” compared to “cultured meat.” Lastly, Bryant and Barnett (2019) conducted an experiment to test four names (“clean meat,” “cultured meat,” “lab-grown meat,” and “animal-free meat”). Again, “clean meat” tested most optimally from a consumer acceptance standpoint.

Due to the similar results of these four studies, The Good Food Institute has thus far chosen to use the term “clean meat.” At this juncture, cellular agriculture is coming closer to market, and a number of new terms have been advocated for use among numerous audiences, including consumers, of course, but also for scientific, regulatory, advocacy and trade groups audiences. While consumer acceptance (and more specifically, intention to try or purchase the product) is a critical factor for the success of the industry, stakeholders should also consider additional factors beyond consumer preference. These other factors include, for instance, the neutrality of the term, its ability to accurately describe the product, and whether it differentiates the product from other types of meat. Another factor is the target population in the present and former studies, which have sampled a general U.S. population rather than an early adopter population. Memphis Meats, a cellular agriculture company, has recently begun using the term “cell-based meat” to identify this product category, noting the need to utilize a term that is descriptive and differentiating from other types of meat.

Given these current factors, GFI decided to conduct a more comprehensive nomenclature project in order to provide data to inform the naming discussion. The focus of this research project focused on consumer acceptance factors, including the appeal, descriptiveness, and differentiation of the name, as well as intentions to try and purchase the product. The project included four distinct study phases, beginning with a stakeholder survey to generate a comprehensive set of names, followed by a consumer survey to shorten the list, then an experiment to test the top five selected names, and finally a replication study in a larger, more representative sample. This preliminary report briefly outlines the method and topline results for the project. The appendices

provide more detailed information, including the full set of surveys, demographic information, and results tables. We also registered the project on [Open Science Framework](#), where we will post more detailed data tables.

PHASE 1: GENERATE A COMPREHENSIVE LIST OF NAMES

Method

The purpose of the Phase 1 study was to develop a comprehensive list of names. We conducted a stakeholder survey to seek input on names to consider for consumer testing. Ninety-seven stakeholders, including individuals from cellular agriculture companies, individuals from advocacy groups, and consumer researchers, completed the survey. The survey (see Appendix A) generated 74 unique names.

Results

The research team provided a holistic assessment of the viability of each of the 74 names, rating each name on a scale from 1-5 in terms of whether the name should be included in Phase 2 testing (1 = definitely no, 5 = definitely yes). The holistic assessment was based on several criteria, including consumer appeal, understandable/descriptive, differentiation from other types of meat, regulatory appeal, conventional meat company appeal, and cellular agriculture company appeal. The research team met to discuss any discrepancies in their assessment. For any remaining discrepancies in assessment, we erred on the side of including the name in the next study phase.

The reduction process resulted in a shortened list of 31 names. Appendix B provides a list of the 74 unique names generated in Phase 1. The study team's holistic ratings for each name are also listed.

PHASE 2: CONDUCT CONSUMER SURVEY TESTING OF SHORT LIST NAMES

Method

The purpose of the Phase 2 study was to eliminate non-viable names and create a top list of 3-5 names for the Phase 3 experiment. To do this, we conducted a consumer survey to test the 31 names. Survey respondents were recruited from Amazon Mechanical Turk (MTurk) using the Positly platform. We excluded 4 participants due to attention check failures and 10 participants due to incomplete responses. The final sample size was 148. Demographics of the Phase 2 sample can be found in Appendix D. Consumers were first provided a description of cellular agriculture. After reading the description, participants rated each of the names in terms of its appeal, and then rated each of the 31 names in terms of its descriptiveness. See Appendix C for the full Phase 2 survey.

Results

The study team used the mean ratings for appeal and descriptiveness to determine the top names that should be included in the Phase 3 experiment. An additional criterion was whether the name was already in use (or being advocated to be in use). Because we needed to reduce the list to a maximum of five names, we selected only one

name if there were similar variations. For example, “slaughterless” and “slaughter-free” performed similarly and “cell-cultured” and “cell-based” performed similarly. In the latter case, we selected “cell-based” because Memphis Meats was already using it.

The reduction process resulted in five names selected for inclusion in the next phase of the study. The names included: “clean meat,” “cultured meat,” “craft meat,” “cell-based meat,” and “slaughter-free meat.”

PHASE 3: CONSUMER EXPERIMENT, MECHANICAL TURK SAMPLE

Method

The purpose of the Phase 3 study was to assess the unique contribution of each name with respect to key name outcome variables (appeal, descriptiveness, degree of differentiation from conventional meat) and behavioral intention outcome variables (e.g., willingness to try, purchase intent). We obtained a sample of 384 participants from Amazon Mechanical Turk (MTurk) via Positly. Each participant was randomly assigned to read a product description containing one of five names: “clean meat,” “cultured meat,” “craft meat,” “cell-based meat,” and “slaughter-free meat.”

Due to MTurk data quality concerns (e.g., reports of suspected automated responses occurring within the platform), we conducted extensive data quality control checks to ensure a quality sample. We removed 46 participants due to the following factors: location (outside US), suspicious ISP (using VPN to hide their location or VPS to run a virtual machine), and <75% pass rate of attention checks within the Positly system. All open-ended responses appeared coherent and logical. The final sample size was 338. Demographics can be found in Appendix G.

Participants were randomly assigned to one of five groups. The only difference between the conditions was the name used to describe meat produced through cellular agriculture. Prior to reading the description, participants provided up to four words/phrases in response to hearing the name only. Participants then responded to quantitative questions about name appeal, name descriptiveness, whether the name helped to differentiate from conventional meat, various product attributes, likelihood of trying the product, and purchase intent. These were each rated on a 5-point scale, where higher ratings indicated more positive responses and lower ratings indicated more negative responses. The full survey is available in Appendix F.

Results

To analyze the data, we ran a one-way between subjects Analysis of Variance (ANOVA) for each outcome variable, and then conducted post hoc tests (LSD) for significant omnibus tests. Many of the omnibus tests were not statistically significant. Overall the mean differences were small (e.g., a range of .52 for appeal), and the study was underpowered to detect small effect sizes. A results table for the descriptive and inferential statistics are available in Appendix H. However, the general pattern of results was replicated in the 4th study phase, which are reported in the following section. The qualitative data analyses are underway, and will be released at a later date.

PHASE 4: CONSUMER EXPERIMENT, DATASSENTIAL SAMPLE

Method

The purpose of the Phase 4 consumer experiment was to assess the unique contribution of each name with respect to key name outcome variables and behavioral intention outcome variables. Phase 4 was also designed to be a replication study of the Phase 3 study using a larger, more representative sample.

We obtained a sample of 1,004 participants from the Datassential omnibus survey. The demographic characteristics of the sample can be found in Appendix J.

Each participant was randomly assigned to read a cellular agriculture product description containing one of the five names (“clean meat,” “cultured meat,” “craft meat,” “cell-based meat,” and “slaughter-free meat”). After reading the description, participants provided ratings for each outcome measure (name appeal, name descriptiveness, whether the name helped to differentiate from conventional meat, likelihood of trying the product, and purchase intent). These were each rated on a 5-point scale, where higher ratings indicated more positive responses and lower ratings indicated more negative responses. The full survey can be found in Appendix I.

Results

To analyze the data, we ran a one-way between subjects Analysis of Variance (ANOVA) for each outcome variable, and then conducted post hoc tests (LSD) for significant omnibus tests. Descriptive and inferential statistics for each outcome variable are available in Appendix K. We will also post more detailed data tables on [Open Science Framework](#) showing descriptive statistics for demographics groups.

Appeal

The names “slaughter-free” ($M = 2.89$), “craft” ($M = 2.86$), “clean” ($M = 2.80$), and “cultured” ($M = 2.70$) were quite similar in appeal, and all performed better than the name “cell-based” ($M = 2.30$).

Descriptiveness

The names “slaughter-free” ($M = 3.70$) and “cell-based” ($M = 3.56$) were viewed as more descriptive than the names “cultured” ($M = 3.39$), “craft” ($M = 3.24$), and “clean” ($M = 3.19$).

Differentiates from conventional meat

The names “cell-based” ($M = 3.81$) and “slaughter-free” ($M = 3.74$) both differentiated from conventional meat better than the names “cultured” ($M = 3.43$), “craft” ($M = 3.37$), and “clean” ($M = 3.28$).

Willingness to try the product

The average ratings for willingness to try the product were similar (“craft,” M = 3.19; “slaughter-free,” M = 3.08; “cultured,” M = 3.01; “clean,” M = 2.96; and “cell-based,” M = 2.72). The percentage of respondents who were “very or extremely likely” to try the product were as follows: 46% for “craft,” 46% for “slaughter-free,” 43% for “cultured,” 42% for “clean,” and 36% for “cell-based.”

Purchase intent

The average ratings for purchase intent were similar (“craft,” M = 3.14; “slaughter-free,” M = 3.12; “clean,” M = 2.99; “cultured,” M = 2.97; and “cell-based,” M = 2.82). The percentage of respondents who were “very or extremely likely” to purchase the product were as follows: 47% for “slaughter-free”, 43% for “craft,” 42% for “clean,” 37% for “cultured,” and 34% for “cell-based.”

Additional analysis to assess potential demographic differences in the outcome variables are underway. These will be released at a later date.

CONCLUSIONS AND OPPORTUNITIES FOR FURTHER RESEARCH AND DEVELOPMENT

The purpose of this research project was to better understand consumer perceptions of names used to describe meat produced through cellular agriculture. The project involved generating a comprehensive list of potential names and then conducting a series of studies to test names in a general U.S. consumer audience. The names selected for the final research stages included “clean meat,” “cell-based meat,” “craft meat,” “cultured meat,” and “slaughter-free” meat.

The results from the Phase 3 experiment replicated in the Phase 4 experiment, lending additional validity to the results. Overall, “slaughter-free,” “craft,” “clean,” and “cultured” performed best in name appeal, “slaughter-free” and “cell-based” performed best in descriptiveness and differentiation, and “slaughter-free” and “craft” performed best in likelihood of trying and purchasing the product. Many of the names that were more appealing to consumers achieved lower ratings for descriptiveness, while many of the names that were higher in descriptiveness achieved lower ratings for appeal. The one exception was the name “slaughter-free meat,” which achieved moderately high ratings for all tested outcome variables.

Consumers are a key audience to consider when selecting a name to describe any new or novel product. The data from this research project suggest that the name, “slaughter-free meat” is most likely to result in the highest consumer acceptance. To put the difference in perspective in terms of purchase intent, 47% of consumers who learned about cellular agriculture by the name “slaughter-free meat” were “very or extremely likely” to purchase the product. In comparison, that purchase intent percentage was 43% for craft meat, 42% for clean meat, 37% for cultured meat, and 34% for cell-based meat. However, the name “slaughter-free” may not be viewed as neutral terminology by all audiences and therefore may not ultimately be an optimal name.

This research project provided key data to inform the discussion of cellular agriculture nomenclature. The top five names tested in the experiments were in part selected because they are currently in use, though entirely new terminology might also serve the purpose well. The field of cellular agriculture may benefit from additional research that seeks to optimize a name not only in terms of consumer acceptance, but also weights additional factors necessary for market success. Some of these factors include the neutrality of the term, whether it serves

as a category descriptor within the protein foods group, and whether it may be accepted as a regulatory and labeling term on product packages.

Further nomenclature research may provide additional insights for determining an optimal name or set of names for use in the public, scientific, and regulatory spheres. Collaboration among cellular agriculture companies and stakeholder groups to determine ranked criteria for nomenclature adoption may be particularly useful in driving a research agenda and decision-making process to assess viability of cellular agriculture nomenclature.

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About the Author

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Keri's research advances the plant-based and cultivated meat market sectors by generating effective messaging that helps consumers make healthy, sustainable, and just food choices. She is also visiting scholar with the School of Social and Behavioral Sciences at Arizona State University (ASU). Keri earned her Ph.D. in Communication from ASU's Hugh Downs School of Human Communication and completed postdoctoral work in science communication with ASU's School for the Future of Innovation in Society.

Suggested Citation

Szejda, K. (2018). Cellular Agriculture Nomenclature: Optimizing Consumer Acceptance. Research Report. Washington, DC: The Good Food Institute. go.gfi.org/cellular-agriculture-nomenclature

Acknowledgements

The study team included Keri Szejda, Brad Barbera, and Bruce Friedrich. The study team would like to thank the many individuals who contributed their ideas by participating in the Phase 1 survey. We would also like to thank Chris Bryant (University of Bath) and Maria Occarina (Memphis Meats) for survey design suggestions. Thank you also to Jack Li and the Datassential team, who offered pro bono data collection and analysis in support of the Phase 4 replication study.

Finally, we are grateful for the support from our generous donors who make this report and all of GFI's work possible.

About GFI

The Good Food Institute is a global nonprofit building a sustainable, healthy, and just food system. With expertise across the scientific, regulatory, industry, and investment landscape, we are accelerating the transition of the world's food system to alternative proteins, using the power of food innovation and markets.



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APPENDIX A: PHASE 1 SURVEY

To begin the survey, please read the following description.

One recent breakthrough in food innovation allows us to produce meat in a new way. This real meat is identical at the cellular level to conventional meat. This meat is real meat grown directly from animal cells. It is produced in a clean facility, similar to a brewery. The process does not involve raising and slaughtering farm animals. The final product has an identical taste and texture to conventional meat. This type of meat offers significant benefits for human health, the environment, and animal welfare. Several companies have already successfully produced and taste-tested this type of meat. The products will be available for retail purchase in 1-5 years.

Once you have read the description, please click here.

Are there any names that you can think of that might be a good fit for this type of meat?

In the text boxes below, please list up to 10 names (you don't have to fill all 10 spaces). Feel free to also add comments about each name.

- Name 1 _____
- Name 2 _____
- Name 3 _____
- Name 4 _____
- Name 5 _____
- Name 6 _____
- Name 7 _____
- Name 8 _____
- Name 9 _____
- Name 10 _____

	Not at all appealing	Somewhat appealing	Moderately appealing	Very appealing	Extremely appealing
Clean meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cultured meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cell-cultured meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Craft meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Meat 2.0	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Do you have any comments to share about any of these names?

- Clean meat _____
- Cultured meat _____
- Cell-cultured meat _____
- Craft meat _____
- Meat 2.0 _____

Prior to this survey, how familiar were you with this type of meat?

- Not at all familiar
- Slightly familiar
- Moderately familiar
- Very familiar
- Extremely familiar

Do you have any additional feedback?

APPENDIX B: PHASE 1 NAME RATINGS

Name	Study team's holistic rating
Better Meat	5
No-Harm Meat	5
Clean Meat	5
Craft Meat	5
Pure Meat	2
Animal-Free Meat	1
Artificial Meat	1
Artisan Meat	1
Artisanal Meat	1
Basic Meat	1
Brewed Meat	1
Cell Meat	1
Cellmeat	1
Compassion Meat	1
Complete Meat	1
Cruelty-free Meat	1
Designer Meat	1
Earthwise Meat	1
Enviro-meat	1
Environmental Meat	1
Essence Meat	1
Ethical Meat	1
Flawless Meat	1
Free Meat	1

Friendly Meat	1
Honest Meat	1
Humane Meat	1
InnoMeat	1
Kill-free Meat	1
Kind Meat	1
Neat Meat	1
No-Kill Meat	1
Noble Meat	1
Plain Meat	1
Real Meat	1
Simple Meat	1
Simply Meat	1
Smart Meat	1
Sustainable Meat	1

Note. The holistic rating referred to whether the term should be included in the next study phase. 1 = definitely no; 5 = definitely yes.

APPENDIX C: PHASE 2 SURVEY

Q1.1

Greetings,

My name is Keri Szejda, and I am a Visiting Scholar in the School of Social and Behavioral Sciences at Arizona State University. I am conducting a research study about perceptions of a new food innovation. Your participation in this study may help inform the development of a new consumer product. There are no foreseeable risks or discomforts to your participation. Participation in this study involves answering survey questions. The survey will take about 5-10 minutes to complete. Your responses will be anonymous.

The results of this study may be used in reports, presentations, or publications. Your participation in this study is voluntary. You can skip questions if you wish. If you choose not to participate or to withdraw from the study at any time, there will be no penalty. You must be 18 or older to participate in the study. Compensation for participating in this study is \$0.75.

If you have any questions concerning the research study, please email me (keri.szejda@asu.edu) or Dr. Jeffrey Kassing (jkassing@asu.edu). If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788.

Sincerely,
Keri Szejda, PhD

If you wish to be part of the study, click “next.”

Q2.1 Please read the following description and then answer the questions below.

One recent breakthrough in food innovation allows us to produce meat in a new way. This real meat is identical at the cellular level to conventional meat. This meat is real meat grown directly from animal cells. It is produced in a clean facility, similar to a brewery. The process does not involve raising and slaughtering farm animals. The final product has an identical taste and texture to conventional meat. This type of meat offers significant benefits for human health, the environment, and animal welfare. Several companies have already successfully produced and taste-tested this type of meat. The products will be available for retail purchase in 1-5 years.

I have read the description and am ready to continue the survey.

Q2.2 We would like your input regarding potential names for this type of meat.

To what extent do you find each of the following names appealing?

	Not at all appealing	Somewhat appealing	Moderately appealing	Very appealing	Extremely appealing
Better Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

No-harm Meat	0	0	0	0	0
Clean Meat	0	0	0	0	0
Craft Meat	0	0	0	0	0
Slaughter-free Meat	0	0	0	0	0
Slaughterless Meat	0	0	0	0	0
Green Meat	0	0	0	0	0
Meat 2.0	0	0	0	0	0
Cultured Meat	0	0	0	0	0
Cell-grown Meat	0	0	0	0	0
Cell-based Meat	0	0	0	0	0
Lab-grown Meat	0	0	0	0	0
Synthetic Meat	0	0	0	0	0
Test Tube Meat	0	0	0	0	0
Mindful Meat	0	0	0	0	0
Modern Meat	0	0	0	0	0
Cell-cultured Meat	0	0	0	0	0
Cellular meat	0	0	0	0	0
Conscious Meat	0	0	0	0	0
Cultivated Meat	0	0	0	0	0
Eco-meat	0	0	0	0	0
Future Meat	0	0	0	0	0
New Meat	0	0	0	0	0
True Meat	0	0	0	0	0
Virtuous Meat	0	0	0	0	0

Ideal Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Manufactured Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Just Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Super Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In-vitro Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Meat* *Grown directly from cells without raising or slaughtering animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Please select "not at all appealing."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q2.3 Description

One recent breakthrough in food innovation allows us to produce meat in a new way. This real meat is identical at the cellular level to conventional meat. This meat is real meat grown directly from animal cells. It is produced in a clean facility, similar to a brewery. The process does not involve raising and slaughtering farm animals. The final product has an identical taste and texture to conventional meat. This type of meat offers significant benefits for human health, the environment, and animal welfare. Several companies have already successfully produced and taste-tested this type of meat. The products will be available for retail purchase in 1-5 years.

Q2.4 To what extent do each of these names accurately describe this type of meat?

	Not at all descriptive	Somewhat descriptive	Moderately descriptive	Very descriptive	Extremely descriptive
Better Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
No-harm Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clean Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Craft Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Slaughter-free Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Slaughterless Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Green Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Meat 2.0	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cultured Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cell-grown Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cell-based Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lab-grown Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Synthetic Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Test Tube Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mindful Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Modern Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cell-cultured Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cellular meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conscious Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cultivated Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eco-meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Future Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
New Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
True Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Virtuous Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ideal Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Manufactured Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Just Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Super Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In-vitro Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Meat* *Grown directly from cells without raising or slaughtering animals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Please select "moderately appealing."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q3.1 Prior to participating in this study, how familiar were you with this new way of producing meat?

- Not at all familiar
- Slightly familiar
- Moderately familiar
- Very familiar
- Extremely familiar

Q4.1 Next, we would like to know your current eating habits.

Q4.2 Which category best fits your diet?

- Omnivore (I eat meat, such as beef, pork, chicken, turkey, fish, and/or shellfish.)
- Pescatarian (I eat fish and/or shellfish, but no other types of meat.)
- Vegetarian (I don't eat meat of any kind, but I do eat eggs and/or dairy products).
- Vegan (I don't eat meat, eggs, dairy products, or other animal-derived ingredients).

Q4.3 In the boxes below, please indicate how often you typically eat MEAT at your breakfast, lunch, and dinner meals.

Please consider all types of meat, such as beef, pork, chicken, turkey, fish, and/or shellfish.

- _____ (out of 7) BREAKFAST meals.
- _____ (out of 7) LUNCH meals.
- _____ (out of 7) DINNER meals.

Q5.1 Lastly, we have a few additional demographic questions.

[Note: These are in addition to the standardized demographic questions collected by Positly.]

Q5.2 Which categories of race/ethnicity describe you? (select ALL that apply)

- Hispanic, Latino, or Spanish
- White or Caucasian

- Black or African American
- American Indian or Alaska Native
- South Asian (Indian Subcontinent)
- Asian
- Middle Eastern or North African
- Native Hawaiian or other Pacific Islander
- Other (specify) _____
- Prefer not to answer

Q5.3 In which state do you currently reside?

- ▼ Alabama ... I do not reside in the United States

Q5.4 How would you describe your political views?

- Very conservative
- Conservative
- Moderate
- Liberal
- Very liberal

Q5.5 Would you say you live in a...

- Rural area or village
- Small or middle-sized town
- Large town or city
- Don't know

APPENDIX D: PHASE 2 DEMOGRAPHICS

Demographic Characteristic	%	n
Age		
Millennial	74.3	110
Gen X	19.6	29
Boomer	3.1	9
Gender		
Male	48.6	72
Female	51.4	76
Non-binary/Other	0.0	0
Race/Ethnicity (select all that apply)		
Hispanic, Latino, or Spanish	5.4	8
White or Caucasian	79.7	118
Black or African American	14.2	21
American Indian or Alaska Native	2.0	3
Asian	4.1	6
Middle Eastern or North African	0.0	0
Hawaiian or other Pacific Islander	0.0	0
Other	0.0	0
Prefer not to answer	0.7	1
Other (Specify)	0.7	1
Type of area		
Rural area or village	12.9	19
Small or middle-sized town	49.0	72
Large town or city	38.1	56
Region		
West	24.3	36
Midwest	12.8	19

South	43.2	64
Northeast	18.9	28
Household income		
Less than \$9,999	4.7	7
\$10,000 to \$24,999	15.5	23
\$25,000 to \$39,999	25.0	37
\$40,000 to \$59,999	26.4	39
\$60,000 to \$84,999	11.5	17
\$85,000 to \$114,999	9.5	14
\$115,000 to \$149,999	2.7	4
\$150,000 to \$199,999	4.1	6
\$200,000 or more	0.7	1
Political views		
Very conservative	5.4	8
Conservative	17.7	26
Moderate	23.1	34
Liberal	40.8	60
Very liberal	12.9	19
Education		
No schooling at all	0.7	1
High School or GED	17.6	26
Trade/technical/vocational training	10.8	16
Associate degree	15.5	23
Bachelor's degree	44.6	66
Master's degree	8.8	13
Professional degree - JD, MD	1.4	2
Doctorate degree	0.7	1
Familiarity with this new way of producing meat prior to participating in this study		
Not at all familiar	39.2	58
Slightly familiar	22.3	33
Moderately familiar	27.0	40
Very familiar	9.5	14

Extremely familiar	2.0	3
Diet		
Omnivore	84.5	125
Pescatarian	5.4	8
Vegetarian	8.8	13
Vegan	1.4	2

Note. The total Phase 2 sample size was 148. The sample size for the political views and area type questions was 147.

APPENDIX E: PHASE 2 RESULTS

Name	Appeal		Descriptiveness	
	M	SD	M	SD
Clean Meat	3.03	1.31	2.80	1.30
Mindful Meat	2.87	1.25	2.61	1.30
Eco-Meat	2.85	1.28	3.07	1.29
Ideal Meat	2.82	1.28	2.34	1.28
Better Meat	2.79	1.31	2.41	1.27
Modern Meat	2.66	1.29	2.79	1.29
Slaughter-free Meat	2.63	1.44	3.78	1.30
Just Meat	2.54	1.24	2.03	1.16
No-harm Meat	2.52	1.31	3.49	1.23
Meat* *Grown directly from cells without raising or slaughtering animals	2.49	1.33	4.16	1.07
Meat 2.0	2.43	1.25	2.36	1.31
True Meat	2.42	1.26	1.96	1.21
Conscious Meat	2.41	1.38	2.60	1.35
Super Meat	2.38	1.31	2.18	1.22
Slaughterless Meat	2.36	1.38	3.71	1.27
Craft Meat	2.34	1.22	2.55	1.36
Future Meat	2.32	1.28	2.78	1.29
Cultured Meat	2.30	1.31	3.20	1.33
Cultivated Meat	2.27	1.30	3.41	1.26
Green Meat	2.26	1.36	2.54	1.34
New Meat	2.25	1.19	2.78	1.43
Virtuous Meat	2.24	1.29	2.35	1.27

Cellular Meat	1.99	1.27	3.61	1.27
Manufactured Meat	1.95	1.29	3.54	1.25
Synthetic Meat	1.95	1.22	3.23	1.32
Cell-grown Meat	1.91	1.23	3.98	1.16
Cell-based Meat	1.91	1.27	3.78	1.21
Cell-cultured Meat	1.85	1.19	3.88	1.14
Lab-grown Meat	1.74	1.16	3.94	1.15
In-vitro Meat	1.71	1.11	2.86	1.41
Test Tube Meat	1.60	1.09	3.05	1.31

Notes. Appeal was rated on a 1-5 scale (1= Not at all appealing, 2 = Somewhat appealing, 3 = Moderately appealing, 4 = Very appealing, 5 = Extremely appealing). Descriptiveness was rated on a 1-5 scale (1= Not at all descriptive, 2 = Somewhat descriptive, 3 = Moderately descriptive, 4 = Very descriptive, and 5 = Extremely descriptive).

APPENDIX F: PHASE 3 SURVEY

Q1.1 Perceptions of Food Innovation

Greetings,

My name is Keri Szejda, and I am a Visiting Scholar in the School of Social and Behavioral Sciences at Arizona State University. I am conducting a research study about perceptions of a new food innovation. Your participation in this study may help inform the development of a new consumer product. There are no foreseeable risks or discomforts to your participation. Participation in this study involves answering survey questions. The survey will take about 5-10 minutes to complete. Your responses will be anonymous.

The results of this study may be used in reports, presentations, or publications. Your participation in this study is voluntary. You can skip questions if you wish. If you choose not to participate or to withdraw from the study at any time, there will be no penalty. You must be 18 or older to participate in the study. Compensation for participating in this study is \$0.75. If you have any questions concerning the research study, please email me (keri.szejda@asu.edu) or Dr. Jeffrey Kassing (jkassing@asu.edu). If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788.

Sincerely,

Keri Szejda, PhD

If you wish to be part of the study, click “next.”

Q2.1

In the first part of the study, you will complete a word association task. This involves viewing a word or phrase, and then giving **up to four** of the first words, phrases, thoughts, feelings, or images that come to mind. You should enter words/phrases **as soon as they come to mind**. First, you will do a practice word association task to familiarize yourself with the concept.

Q2.2 Please write down the first four words, phrases, thoughts, feelings, or images that come to mind when you see the term:

JUGGLER

1: (1) _____

2: (2) _____

3: (3) _____

4: (4) _____

Q2.3 Now, for each word/phrase that you typed, please indicate how positive/negative your feelings towards that association are.

Q2.3 Now, for each word/phrase that you typed, please indicate how positive/negative your feelings towards that association are.

	Very Negative (1)	Negative (2)	Neither Positive nor Negative (3)	Positive (4)	Very Positive (5)
[Text Entry] (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
[Text Entry] (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
[Text Entry] (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
[Text Entry] (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q3.1 Now, please write down up to four words, phrases, thoughts, feelings, or images that first come to mind when you see the term:

[NAME]

1: (1) _____

2: (2) _____

3: (3) _____

4: (4) _____

Q3.2 Now, for each word/phrase that you typed, please indicate how positive/negative your feelings towards that association are.

	Very Negative (1)	Negative (2)	Neither Positive nor Negative (3)	Positive (4)	Very Positive (5)
[Text Entry] (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
[Text Entry] (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
[Text Entry] (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
[Text Entry] (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q4.1 In the next section, we're going to introduce a new concept. First, we would like to know if have you heard of the term "[NAME]."

- No, I haven't heard of the term, "[NAME]." (1)
- Unsure (2)
- Yes, I have heard of the term, "[NAME]." (3)

Q4.2 Please read the following description and then answer the questions below.

What is [NAME]? One recent breakthrough in food innovation allows us to produce meat in a new way. [NAME] is identical at the cellular level to conventional meat. This meat is real meat grown directly from animal cells. [NAME] is produced in a clean facility, similar to a brewery. The process does not involve raising and slaughtering farm animals. The final product has an identical taste and texture to conventional meat. [NAME] offers significant benefits for human health, the environment, and animal welfare. Several companies have already successfully produced and taste-tested [NAME]. The products will be available for retail purchase in 1-5 years.

I have read the description and am ready to continue the survey. (1)

Q4.3 To what extent does the name [NAME] sound APPEALING?

- Not at all appealing (1)
- Somewhat appealing (2)
- Moderately appealing (3)
- Very appealing (4)
- Extremely appealing (5)

Q4.4 To what extent does the name [NAME] ACCURATELY DESCRIBE this type of meat?

- Not at all descriptive (1)
- Somewhat descriptive (2)
- Moderately descriptive (3)
- Very descriptive (4)
- Extremely descriptive (5)

Q4.5 To what extent would the term “[NAME]” HELP YOU TELL THE DIFFERENCE between this type of meat and conventional meat?

- Not at all (1)
- A little (2)
- A moderate amount (3)
- A lot (4)
- A great deal (5)

Q5.1 What is [NAME]?

One recent breakthrough in food innovation allows us to produce meat in a new way. [NAME] is identical at the cellular level to conventional meat. This meat is real meat grown directly from animal cells. [NAME] is produced in a clean facility, similar to a brewery. The process does not involve raising and slaughtering farm animals. The final product has an identical taste and texture to conventional meat. [NAME] offers significant benefits for human

health, the environment, and animal welfare. Several companies have already successfully produced and taste-tested [NAME]. The products will be available for retail purchase in 1-5 years.

Q5.2 Now that you are familiar with [NAME], we'd like to know what you think of the product.

Q5.3 Please indicate what you think of [NAME] with regards to the following attributes:

[NAME] is...

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	
Unhealthy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Healthy
Unnatural	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Natural
Bad for the environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Good for the environment
Unethical	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Ethical
Unappealing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Appealing
Not tasty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Tasty
Unsafe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Safe
Expensive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Affordable
Bad for animals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Good for animals
Unsustainable as a long-term food source	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Sustainable as a long-term food source
Inconvenient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Convenient
Boring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Exciting
Not nutritious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Nutritious
Unnecessary	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Necessary
Bad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Good
Disgusting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Not disgusting

Q5.4 Imagine [NAME] has become widely available at grocery stores, restaurants, butchers, and markets.

How likely are you to try [NAME]?

- Not at all likely (1)
- Somewhat likely (2)
- Moderately likely (3)
- Very likely (4)
- Extremely likely (5)

Q5.5 Imagine that you have had the opportunity to try [NAME] and you found the taste and texture identical to conventional meat.

How likely are you to...

	Very Negative (1)	Negative (2)	Neither Positive nor Negative (3)	Positive (4)	Very Positive (5)
Purchase [NAME]?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Purchase [NAME] regularly? (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eat [NAME] as a replacement for conventional meat? (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pay a higher price for [NAME] than conventional meat?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q6.1 Prior to participating in this study, how familiar were you with this new way of producing meat?

- Not at all familiar (1)
- Slightly familiar (2)
- Moderately familiar (3)
- Very familiar (4)
- Extremely familiar (5)

Q7.1 Next, we would like to know your current eating habits.

Q7.2 Which category best fits your diet?

- Omnivore (I eat meat, such as beef, pork, chicken, turkey, fish, and/or shellfish.) (1)

- Pescatarian (I eat fish and/or shellfish, but no other types of meat.) (2)
- Vegetarian (I don't eat meat of any kind, but I do eat eggs and/or dairy products). (3)
- Vegan (I don't eat meat, eggs, dairy products, or other animal-derived ingredients). (4)

Skip To: End of Block If Which category best fits your diet? = Vegetarian (I don't eat meat of any kind, but I do eat eggs and/or dairy products).

Q7.3 In the boxes below, please indicate how often you typically eat MEAT at your breakfast, lunch, and dinner meals.

Please consider all types of meat, such as beef, pork, chicken, turkey, fish, and/or shellfish.

- _____ (out of 7) BREAKFAST meals. (1)
- _____ (out of 7) LUNCH meals. (2)
- _____ (out of 7) DINNER meals. (3)

Q8.1 Lastly, we have a few additional demographic questions.

[Note: These are in addition to the standardized demographic questions collected by Positly.]

Q8.2 Which categories of race/ethnicity describe you? (select ALL that apply)

- Hispanic, Latino, or Spanish (1)
- White or Caucasian (2)
- Black or African American (3)
- American Indian or Alaska Native (4)
- South Asian (Indian Subcontinent) (5)
- Asian (6)
- Middle Eastern or North African (7)
- Native Hawaiian or other Pacific Islander (8)
- Other (specify) (9) _____
- Prefer not to answer (10)

Q8.3 In which state do you currently reside?

- ▼ Alabama (1) ... I do not reside in the United States (53)

Q8.4 How would you describe your political views?

- Very conservative (1)
- Conservative (2)
- Moderate (3)
- Liberal (4)

Very liberal (5)

Q8.5 Would you say you live in a...

Rural area or village (1)

Small or middle-sized town (2)

Large town or city (3)

Don't know (4)

APPENDIX G: PHASE 3 DEMOGRAPHICS

Demographic Characteristic	%	N
Age		
Millennial	56.8	192
Gen X	27.2	92
Boomer	16.0	54
Gender		
Male	45.0	152
Female	54.7	185
Non-binary/Other	0.3	1
Race/Ethnicity (select all that apply)		
Hispanic	6.2	21
Caucasian	79.9	270
African American	8.3	28
Native American	0	0
Asian	8.9	30
Middle Eastern	0	0
Pacific Islander	0	0
Other	0	0
Prefer not to answer	0	0
Type of area		
Rural area or village	12.1	41
Small or middle-sized town	50.9	172
Large town or city	37.0	125
Region		
West	22.8	77
Midwest	21.3	72
South	38.5	130
Northeast	17.5	59
Household income		

Less than \$9,999	4.1	14
\$10,000 to \$24,999	11.5	39
\$25,000 to \$39,999	15.4	52
\$40,000 to \$59,999	24.3	82
\$60,000 to \$84,999	21.9	74
\$85,000 to \$114,999	11.2	38
\$115,000 to \$149,999	7.7	26
\$150,000 to \$199,999	2.4	8
\$200,000 or more	1.5	5
Political views		
Very conservative	8.0	27
Conservative	18.9	64
Moderate	26.6	90
Liberal	28.1	95
Very liberal	18.3	62
Education		
Completed only high school or the equivalent (for example: GED), no college	23.1	78
Completed trade/technical/vocational training	8.3	28
Completed associate degree only, no bachelor's degree (AA, AS or other)	17.2	58
Completed bachelor's degree (BA, AB, BS or other)	37.0	125
Completed master's degree (MA, MS, MEng, MEd, MBA, or other)	11.8	40
Completed professional degree (JD, MD or other)	0.9	3
Completed doctorate degree (PhD, PsyD, EdD or other.)	1.8	6

Familiarity with this new way of producing meat prior to participating in this study		
Not at all familiar	55.0	186
Slightly familiar	27.2	92
Moderately familiar	12.7	43
Very familiar	3.8	13
Extremely familiar	1.2	4
Diet		
Omnivore	91.4	309
Pescatarian	2.4	8
Vegetarian	4.1	14
Vegan	2.1	7

Note: The total Phase 3 sample size was 338.

APPENDIX H: PHASE 3 RESULTS

Means and Standard Deviations

		Clean		Cultured		Cell-based		Craft		Slaughter-free	
		M	SD	M	SD	M	SD	M	SD	M	SD
Name Attributes	Appeal	2.80	1.34	2.37	1.29	2.16	1.21	2.42	1.34	2.68	1.34
	Descriptiveness	2.73	1.28	3.33	1.19	3.57	1.05	2.82	1.19	3.41	1.20
	Differentiates from Conventional Meat	3.03	1.29	3.45	1.19	3.70	1.19	3.15	1.33	3.29	1.25
Behavioral Intentions	Willingness to Try	2.76	1.38	2.72	1.39	2.8	1.50	3.20	1.35	2.90	1.42
	Purchase Intent	2.73	1.35	2.65	1.38	2.67	1.36	2.95	1.33	2.83	1.47

Notes: Each outcome was rated on a 1-5 scale, where lower scores indicate a negative rating and higher scores indicate a positive rating. The full description of measures can be found in Appendix F.

One-way Analysis of Variance and Pairwise Comparisons

		Omnibus Tests				Posthoc Tests
		df	F	p	Partial η^2	Pairwise Comparisons (LSD)
Name Attributes	Appeal	4,333	1.51	.20	.02	N/A
	Descriptive -ness	4,333	6.90	<.001	.08	Cell-based > craft ($p < .001$) Cell-based > clean ($p < .001$) Slaughter-free > craft ($p < .01$) Slaughter-free > clean ($p < .01$) Cultured > craft meat ($p = .02$) Cultured > clean ($p < .01$)
	Differentiates from Conventional Meat*	4,333	3.04	.02	.04	Cell-based > craft ($p = .01$) Cell-based > clean ($p < .01$)
Behavioral Intentions	Willingness to Try	4,333	1.19	.32	.01	N/A
	Purchase Intent	4,333	0.55	.70	.01	N/A

Note: * $p < .05$, ** $p < .01$, and *** $p < .001$ indicate a significant ANOVA.

APPENDIX I: PHASE 4 SURVEY

Programmer: ask the following questions by randomly piping one of the following names.

NAME TO PIPE	MIN QUOTA
CLEAN MEAT	n=200
CULTURED MEAT	n=200
CELL-BASED MEAT	n=200
CRAFT MEAT	n=200
SLAUGHTER-FREE MEAT	n=200

Food innovation now allows meat to be produced in a new way. Next, we'd like to ask you a few questions about this type of meat...

Intro	<p>Please read the following description...</p> <p>What is [NAME]?</p> <p>One recent breakthrough in food innovation allows us to produce meat in a new way. [NAME] is identical at the cellular level to conventional meat. This meat is real meat grown directly from animal cells. [NAME] is produced in a clean facility, similar to a brewery. The process does not involve raising and slaughtering farm animals. The final product has an identical taste and texture to conventional meat. [NAME] offers significant benefits for human health, the environment, and animal welfare. Several companies have already successfully produced and taste-tested [NAME]. The products will be available for retail purchase in 1-5 years.</p>	Select One
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1 I have read the description and am ready to continue the survey

Notes: force selection

Programmer: please include Q1, Q2, Q3 on the same page

Q1	To what extent does <u>the name</u> [NAME] sound APPEALING?	Select One
5	Extremely appealing	
4	Very appealing	
3	Moderately appealing	

2	Somewhat appealing
1	Not at all appealing
Notes:	

Q2	To what extent does <u>the name</u> [NAME] ACCURATELY DESCRIBE this type of meat?	Select One
5	Extremely descriptive	
4	Very descriptive	
3	Moderately descriptive	
2	Somewhat descriptive	
1	Not at all descriptive	
Notes:		

Q3	To what extent does <u>the name</u> [NAME] HELP YOU TELL THE DIFFERENCE between this type of meat and conventional meat?	Select One
5	A great deal	
4	A lot	
3	A moderate amount	
2	A little	
1	Not at all	
Notes:		

Programmer: please include Q4 and Q5 on the same page, show description at top of same page as Q4 & Q5

As a reminder... [NAME] is identical at the cellular level to conventional meat. This meat is real meat grown directly from animal cells. [NAME] is produced in a clean facility, similar to a brewery. The process does not involve raising and slaughtering farm animals. The final product has an identical taste and texture to conventional meat. [NAME] offers significant benefits for human health, the environment, and animal welfare. Several companies have already successfully produced and taste-tested [NAME]. The products will be available for retail purchase in 1-5 years.

Q4	Imagine [NAME] has become widely available at grocery stores, restaurants, butchers, and markets. How likely are you to TRY [NAME]?	Select One
5	Extremely likely	

4	Very likely
3	Moderately likely
2	Somewhat likely
1	Not at all likely
Notes:	

Q5	Imagine that you have had the opportunity to try [NAME] and you found the taste and texture identical to conventional meat. How likely are you to PURCHASE [NAME] regularly?	Select One
5	Extremely likely	
4	Very likely	
3	Moderately likely	
2	Somewhat likely	
1	Not at all likely	
Notes:		

APPENDIX J: PHASE 4 DEMOGRAPHICS

Demographic Characteristic	%	n
Shopper		
Primary household shopper	89.9	903
Not primary household shopper	10.1	101
Age		
Gen Z	5.3	53
Millennial	32.2	323
Gen X	31.3	314
Boomer +	31.3	314
Gender		
Male	48.2	484
Female	51.6	518
Non-binary/third gender	0.1	1
Prefer not to answer	0.1	1
Ethnicity (select one)		
White / Caucasian	63.0	633
Black / African American	16.8	169
Hispanic / Latino American	11.6	116
Asian / Pacific American	5.9	59
Mixed Race	2.3	23
Other	0.4	4
Region		
West	20.4	205
Midwest	20.1	202
South	39.3	395
East	20.1	202
Type of area		
Urban/CityCenter/Downtown	33.7	338
Suburban	46.9	471

Rural/country	19.4	195
Marital status		
Single	45.7	459
Have a significant other, but are not married	10.7	107
Married	43.6	438
Other adults (over age 18) in the household besides yourself		
None	29.4	295
1	46.3	465
2 or more	24.3	244
Children in the household		
Yes	36.9	370
No	63.1	634
Household income		
Under \$25,000	25.2	253
\$25,000 - \$49,999	25.1	252
\$50,000 - \$74,999	19.3	194
\$75,000 - \$99,999	12.8	129
\$100,000 - \$199,999	12.6	127
\$200,000 or more	3.4	34
Do not wish to reply	1.5	15
Employment		
Employed in a part-time position	12.6	127
Employed in a full-time position	41.2	414
Retired	20.8	209
Unemployed / Not working currently	15.0	151
Stay-at-home parent / Caregiver for my family	10.3	103
Student		
Full-time college or university student	9.8	98

Part-time college or university student	4.4	44
Not currently enrolled in a college or university	85.9	862
Food Attitude - Foodie		
I'm a FOODIE	36.2	363
Food gets me excited, but I'm not a foodie	49.6	498
I eat because I have to	14.2	143
Food Attitude - Diet		
I follow a strict, specific diet	6.5	65
I'm not on a specific diet, but I very carefully watch what I eat	30.5	306
I generally try to eat healthy, but don't pay too close attention to it	43.6	438
I'm not too concerned about the healthiness of what I eat	19.4	195

APPENDIX K: PHASE 4 RESULTS

		Clean		Cultured		Cell-based		Craft		Slaughter-free	
		M	SD	M	SD	M	SD	M	SD	M	SD
Name Attributes	Appeal	2.80	1.46	2.70	1.47	2.31	1.46	2.86	1.38	2.89	1.50
	Descriptiveness	3.19	1.34	3.39	1.19	3.56	1.19	3.24	1.33	3.70	1.16
	Differentiates from Conventional Meat	3.28	1.35	3.43	1.31	3.81	1.19	3.37	1.34	3.74	1.23
Behavioral Intentions	Willingness to Try	2.96	1.49	3.01	1.48	2.77	1.42	3.19	1.47	3.08	1.56
	Purchase Intent	2.99	1.48	2.97	1.37	2.85	1.42	3.14	1.39	3.12	1.52

Note. Each outcome was rated on a 1-5 scale, where lower scores indicate a negative rating and higher scores indicate a positive rating. The full description of measures can be found in Appendix I.

One-way Analysis of Variance and Pairwise Comparisons

		Omnibus Tests				Posthoc Tests
		df	F	p	Partial η^2	Pairwise Comparisons (LSD)
Name Attributes	Appeal***	4,999	5.61	<.001	.02	Slaughter-free > cell-based (p < .001) Craft > cell-based (p < .001) Clean > cell-based (p < .01) Cultured > cell-based (p < .001)
	Descriptiveness***	4,999	5.93	<.001	.02	Slaughter-free > clean (p < .001) Slaughter-free > craft (p < .001) Slaughter-free > cultured (p = .02) Cell-based > craft (p < .001) Cell-based > clean (p < .01)
	Differentiates from Conventional Meat***	4,999	6.90	<.001	.03	Cell-based > cultured (p = .01) Cell-based > craft (p < .01) Cell-based > clean (p < .001) Slaughter-free > cultured (p = .02) Slaughter-free > craft (p < .01) Slaughter-free > clean (p < .001)
Behavioral Intentions	Willingness to Try	4,999	2.25	.06	.01	N/A
	Purchase Intent	4,999	1.42	.23	.01	N/A

Note. *p < .05, **p < .01, and ***p < .001 indicate a significant ANOVA.