

The Agonizing Dilemma of Animal Testing

To our community,

The core of Impossible Foods' mission is to eliminate exploitation of animals in the food system and to reduce the enormous destructive impact of the animal farming and fishing industries on the environment, including wildlife and the ecosystems they depend on. Among the thousands of animal species surveyed every decade by the World Wildlife Fund, the total number of living individual wild animals today is less than half what it was 40 years ago. This wildlife loss is overwhelmingly due to the exploitation of animals for food, including hunting, fishing and especially the replacement of wildlife habitat by animal farming.

The billions of people around the world who love meat and fish and dairy foods will not be persuaded to stop consuming these foods by pleading or arguing or encouraging them to try a plant-based diet. That's been tried and the demand for these foods is actually increasing faster than population growth. And none of the vegan products on the market that purport to be substitutes for meat have had a meaningful impact on the demand for meat from animals. Vegans and vegetarians may love them, but meat-lovers shun them.

Impossible Foods believes that the solution is to create meat that delivers the tastes, aromas, textures and juiciness of meat without compromise, but do it without using animals -- directly from plants. That's a hard scientific problem that required us to understand meat better than it had ever been understood before. We discovered something amazing. A simple biochemical answer to the question: why does meat taste like meat? It's heme, the same iron-containing molecule that carries oxygen in your blood and makes it red. Heme is essential for all life on Earth but animal tissues - meat - contains heme at concentrations hundreds to thousands of times higher than is found in any vegetable. With heme, we can create meats that hard-core meat lovers can't recognize as anything other than meat; half of the meat-lovers who taste it in blind tastings not only believe it's meat from an cow, but actually prefer it to meat from a cow. This is a huge scientific breakthrough that will transform the global food system by enabling us to make the meat that meat lovers crave without using animals. You can't make meat without heme. But if we can make heme without using animals, then we don't need animals to make meat.

The next challenge was to develop a safe and scalable way to produce heme in the huge quantities required to replace the vast quantities of meat from animals, without using animals. We found a way to do this using yeast modified with a gene from a plant. Interestingly, the “vegetable rennet” or “vegan rennet” that has replaced the calf-derived rennet in 90% of the world’s cheese production is made the same way, using genetically modified yeast.

Although our heme is completely identical to the heme in animal meat and the heme in your blood, it is made a new way. So we wanted to show consumers and the agencies that regulate food ingredients -- the FDA and its counterparts in other countries -- that our heme is completely safe for human consumption. And we believed that there was sufficient compelling scientific evidence for the safety of our heme protein (soy leghemoglobin) that no rat testing was required for conclusive proof of its safety.

So in 2014, we submitted extensive data (which did not include rat testing), to an academic panel of food safety experts from the University of Nebraska, University of Wisconsin Madison, and Virginia Commonwealth University. Based on this data, the panel unanimously concluded that our key ingredient is “generally recognized as safe,” or GRAS. This means that Impossible Foods has been complying with federal food safety regulations since 2014.

In addition, we voluntarily decided to take the optional step of providing our data, including the unanimous conclusion of the food-safety experts, to the FDA via the FDA’s GRAS Notification process. The FDA reviewed the data and had some questions. To address them, we conducted additional tests. It is industry standard to perform rat feeding studies to demonstrate that a food ingredient is not toxic and is safe; most companies that submit a GRAS notification to the FDA include tests that use animals as subjects.

I personally abhor the exploitation of animals not only in the food system but in testing and research. In my 3-decade career in biomedical research, I always avoided using animals in experiments and developed new experimental methods to eliminate the incentive for using them. And I have been a vegetarian for more than 40 years and have totally avoided animal products for the last fourteen years.

But we were confronted with an agonizing dilemma: We knew from our research that heme is absolutely essential to the sensory experience meat lovers crave. Replacing

animals in the diets of meat lovers would absolutely require heme. So without the rat testing, our mission and the future of billions of animals whose future depends on its success was thwarted. We chose the least objectionable of the two choices available to us.

We designed the study rigorously so that it would never have to be done again. We used the minimum number of rats necessary for statistically valid results. Before conducting our rat test, we carefully screened testing companies and selected the one with the most humane practices. We sought advice from many sources to make sure we chose the testing lab with the best record for humane practices and carefully specified the most humane handling, testing and housing practices available without compromising the test. As expected there were zero adverse effects from consumption of leghemoglobin even at levels vastly greater than any human would ever consume.

Nobody is more committed or working harder to eliminate exploitation of animals than Impossible Foods. Avoiding the dilemma was not an option. We made the choice that anyone who sincerely cares about reducing suffering and exploitation of animals should make. We hope we will never have to face such a choice again, but choosing the option that advances the greater good is more important to us than ideological purity.

A handwritten signature in black ink that reads "Pat". The letters are stylized and cursive.

Pat O. Brown

CEO & Founder of Impossible Foods