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Omega Yeast Discovers a Yeast Gene that Makes Beer Hazy

The *HZY1* gene from brewing yeast plays an important role in making the haze in hazy IPAs

Chicago, IL, 7/12/2023 — The research and development team at Chicago's Omega Yeast Labs has made a groundbreaking discovery that links hazy beer to a specific gene, *HZY1*. Already known for their genetically modified yeast strains that highlight increased tropical and fruity flavors in beer fermentation, Omega Yeast's latest breakthrough adds another tool to the brewer's workbench, allowing them to further customize their beer offerings.

As the American beer consumer's palate shifted toward more hop-forward beers like IPAs, many brewers saw additional haze forming in their beers when dry hopping, or adding additional hops in the fermentation process. This haze phenomenon became practically synonymous with flavorful, hoppy beer, and has led to a massive surge in interest in these "hazies" and their fruit juice-like aromatics. Throughout this time, research into beer haze has focused on malt and hops without considering or often neglecting the role yeast could be playing.

In the R&D lab at Omega Yeast, the team regularly conducts experiments to see how different yeast strains act when subjected to various conditions, like swapping out recipe ingredients, altering temperatures during fermentation, and more. "We always pay close attention to what we are seeing in our experiments," says Dr. Laura Burns, Omega Yeast's Director of Research and Development. "In one case, we were using a simple experiment to mimic IPA fermentations, and we found that certain yeast strains would promote haze when others did not."

By observing these fermentations, Dr. Burns and her team discovered that some strains would create brilliant, non-hazy beer, while others would create beer with a milky, turbid haze. They tested variations in the recipe as well as the dry hop timing and the results were consistent: the samples that finished hazy were always from a group of yeast strains that the team deemed "haze-positive." Given that traits like fruity and spice-like flavors, sweetness and dryness in a beer's finish, and varying levels of alcohol output are all traits determined by yeast genetics, it stood to reason that haze could also be specified by the genetics of haze-positive yeast.

These developments were what set the team on the hunt for a genetic link. "When it came to haze, everyone in the craft beer industry was focusing on malt and hops, and we had a very clear result that certain yeast strains were promoting haze in IPAs," adds Burns. Using a combination of classic genetics and next generation sequencing, the R&D team was able to

identify genetic changes to a novel gene that made haze-positive strains hazy. The Omega Yeast team has named the gene *HZY1*, for its newly discovered role in promoting beer haze. Using gene-editing technology known as CRISPR/Cas9, Dr. Burns and her team were able to delete this gene from haze-positive strains, and beers fermented with these strains were no longer hazy.

“Brewing yeast have been so extensively studied, we never thought we would be the first to identify a new gene for haze,” Burns says. “Now that we have a gene, there’s no denying that yeast play an important role in promoting haze in beer.”

For the broader beer world, this discovery blurs the line between yeast strains that could be used for NEIPAs and traditional West Coast IPAs, allowing the exploration of new flavor combinations. Brewers will be able to create new flavor profiles and enrich their brand portfolios with beers that look and taste different from anything they have been able to brew until now.

About Omega Yeast: Omega Yeast produces fresh, high quality, custom pitches of liquid yeast for Probrewers and Homebrewers. They are dedicated to delivering the freshest yeast with made-to-order pitches delivered on the date needed. They believe in experimentation and innovation and have common strains as well as several unique ones found only through Omega Yeast. Their propagation methods generate strong cells with consistent fermentation and optimized cell counts. As much as they invest in their yeast, they are just as proud of the service to customers and are dedicated to making it easy for brewers to focus on brewing.

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