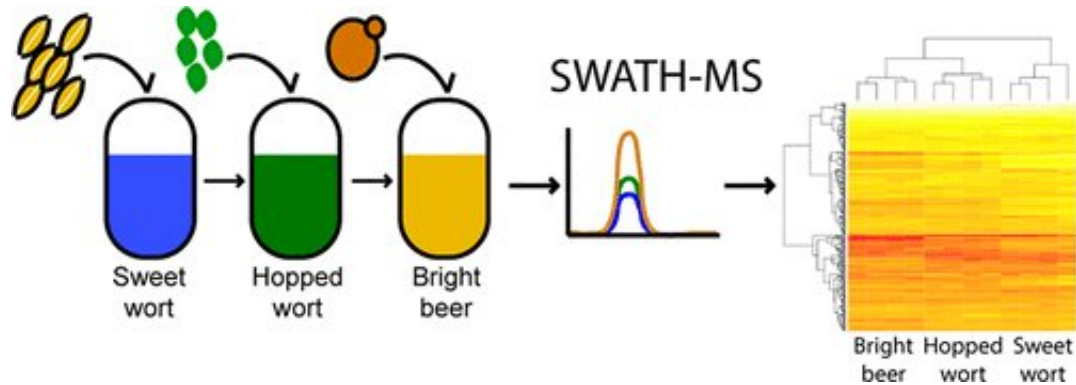


A brewer's tale of proteins and beer

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Credit: American Chemical Society

The transformation of barley grains into beer is an old story, typically starring water, yeast and hops. Now, in a report in the *Journal of Proteome Research*, scientists are highlighting another character in this tale: proteins. The results could someday lead to a better, tastier brew.

Many proteins in beer come from the barley or yeast used to make it, and these proteins influence a brew's properties, including its flavor and foaminess. The [protein](#) profile of a beer depends on how it was produced, a complex multistep process with a murky biochemical underpinning. So, Benjamin L. Schulz, Glen P. Fox, Claudia E. Vickers and colleagues wanted to assess the full protein profile of beer over the course of production, seeking molecular beer brewing insights.

The researchers' tool of choice for probing the beer-making process was

[mass spectrometry](#), which can identify proteins based on weight. They brewed a tiny mug's worth of beer, taking samples at three stages of production for analysis: sweet wort, hopped wort and bright beer. Mass spectrometry of the samples revealed over 200 unique proteins from barley and yeast, with large changes in their relative abundance and appearance at different production steps. The researchers say that future work will focus on how the identified proteins control the flavor, bubbles and quality of [beer](#), and how protein content could be tweaked to produce a better pint.

More information: Benjamin L. Schulz et al. Process Proteomics of Beer Reveals a Dynamic Proteome with Extensive Modifications, *Journal of Proteome Research* (2018). [DOI: 10.1021/acs.jproteome.7b00907](#)

Provided by American Chemical Society

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