



## Fructose Reduction for Healthy Drinks

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You want healthy drinks with all the valuable ingredients and a good taste, but without or at least with less sugar? The good news is: You are not alone! The bad news is: It's difficult to achieve with current technologies... Let's develop some better ones!

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### BACKGROUND

Fructose is naturally present in both fruit and vegetable juices. A too high intake of fructose may not only lead to obesity, but also to several chronic diseases from diabetes and hypertension to cardiovascular disorders. And of course, there are people suffering from fructose malabsorption or fructose intolerance. A too high fructose content can also be detrimental for alcoholic fermentation since it poses osmotic stress for yeasts, slowing fermentation and increasing their acetic acid production leading to a sour vinegar taste. Reducing fructose can not only avoid these problems but also lead to less alcohol content and therefore again to (at least somewhat) healthier drinks.

### TECHNOLOGY

acib offers selective fructose depletion with specific magnetic adsorbent materials. Different fructose-affine materials will be used and different magnetic separation methods can be tested for optimal performance. Fructose will be imprinted into polymers (MIP) to produce polymers that can selectively and reversibly bind fructose. This polymerisation will take place around magnetic supports, thus immobilising the affine polymer and establishing the possibility for magnetic separation. The juice/must and the magnetic MIPs are mixed and then the fructose molecules bound to the magnetic materials are magnetically extracted from the must. The fructose can then be eluted. The particle system can be used several times. The processes are supposed to be gentler and more cost-effective than existing systems from a traditional coupling of ultra- and nanofiltration processes. The advantage of magnetic separation lies in the higher selectivity. It is worth noting that the extracted fructose can be sold/used further e.g. as sweetener for other products.

### OFFER

Under protection of a CDA/NDA we provide you with strategies for fructose-reduction of your drink of choice and can jointly develop this technology. Any IP developed in such projects will belong to you as our industrial partner.

### acib-EXPERTS:

Prof. Dr. Sebastian Schwaminger

### AVAILABLE FOR:

- Investments
- Joint Research Projects (EU-Horizon, CORNET,...)
- Contract Research

### DEVELOPMENT STATUS:

Technology Readiness Level 2

### IPR:

Will be generated for you as our industrial partner / investor

### KEYWORDS:

Fructose  
Healthy Drinks  
Fruit Juice  
Vegetable Juice  
Wine  
Apple Cider  
Champagne  
MIPs

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