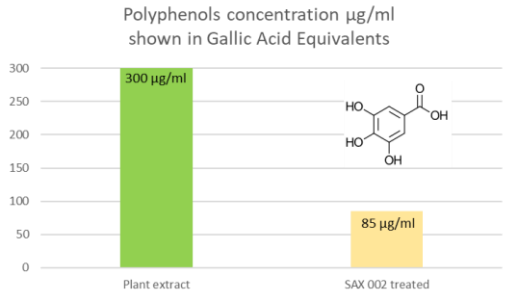
TEMIZ™ SAX 002: Example of polyphenol binding

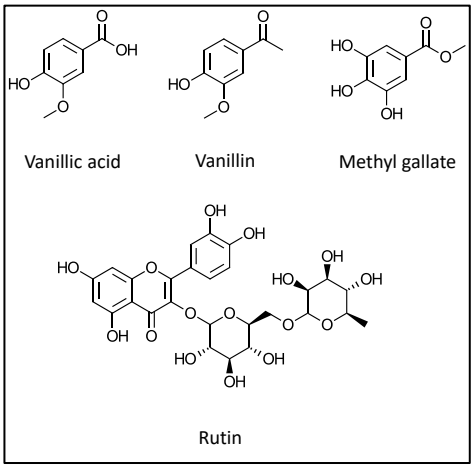
Summary

A strong anion exchange (SAX 002) resin can bind a large variety of polyphenolic compounds from plant extracts such as industrial potato fruit juice. SAX 002 was shown to selectively reduce the concentrations of a multitude of polyphenols in potato fruit juice by over 70 % including gallic acid, vanillic acid, vanillin, methyl gallate, rutin and tannic acid (structure not shown).



Polyphenols

In the plant kingdom, polyphenolics are widely spread compounds and have a multitude of physiological functions. For human health, polyphenols are of importance due to their antioxidant mechanisms. However, many polyphenols have a very bitter taste and are undesirable in various food products at higher levels. In food or cosmetic raw materials, polyphenols may contribute to undesirable browning leading to unappealing color of the raw material ingredient.



SAX 002 Resin

The chemistry of the food grade resin is based on a combination of a strong quaternary anion exchange functionality with a hydrophobic styrenic co-functionality.

Resin properties	
Surface functionality	Q amine chloride
Resin backbone	Styrenic
Average particle size	250 µm
Resin dry binding capacity	Ca 1,9 mmol/ml
Resin dry density	Ca 0,4 g/ml

Reference

"Potato Protein Concentrate: Improving Quality Using a More Effective and Sustainable Method", Thomas Wilbur Davis, Ecevit Yilmaz, and William R. Newson. Biol. Life Sci. Forum 2024, 40(1), 46; https://doi.org/10.3390/blsf2024040046

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