



Patulin is a mycotoxin found in moldy apples. While no tolerance level has been fixed for this substance, it is used as an indicator of quality in processed apple products. Hydroxymethylfurfural (HMF) is a product of thermal decomposition of sugars, and is used as an indicator of heat damage in processing of sweet foods. Both are weakly hydrophobic, neutral compounds, and co-elute on many reversed-phase columns. Fruit juice is a complex matrix, so some form of sample cleanup is necessary. The traditional sample preparation involves off-line extraction using ethyl acetate which yields good recoveries for patulin, but not for HMF. In-line solid-phase extraction is expected to be more reproducible and less manual handling. The Acclaim Mixed-Mode WCX-1 permits organic acids and phenolics to wash out by ion exclusion well ahead of the HMF and patulin (which co-elute on this column). The auxiliary valve transfers the analytes to the Acclaim C30 column that provides excellent resolution of these two substances.