

## P137. DEVELOPMENT OF AN HPTLC METHOD FOR THE DETERMINATION OF PATULIN

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Mycotoxin contamination in foods is one of the most important and unavoidable issue for consumers and food industry. Patulin (PAT) is a toxic metabolite produced by certain fungi species of *Aspergillus*, *Penicillium*, and *Byssoschlamys*. It can be found in many moldy fruits, vegetables, cereals and their puree. PAT is formed and transferred via these food sources to human body due to the difficulties experienced during the processing of food.

PAT is known as mutagenic, immunotoxic, neurotoxic, and can cause adverse effects on the gastrointestinal tract. Therefore, the amount of daily intake has a high importance especially for infants and children. It is essential to protect infants via controlling and monitoring levels of PAT in nutrition sources. Codex Alimentarius and FDA set maximum allowable levels for concentrations of PAT as "10 µg/kg in fruit juice or puree etc".

This study is highlighting a High Performance Thin Layer Chromatography (HPTLC) method for determination and quantitation of PAT in infant nutrition. Preliminary results of HPTLC method will be presented.

Reference standard of Patulin was diluted between 1-100 ng/µL for linearity study. Mobile phase was chosen as Toluene: Ethyl acetate: Formic acid (5:4:1). Injection volume was 1 µL. Injector washing cycle was set at three to prevent carry over. Detection was done by 254 and 274 nm for comparison of the PAT under common and specific wavelength.

In this study, linearity of PAT was evaluated with two different ranges; 1-10 ng/spot and 10-100 ng/spot. Correlation coefficients in linear regression mode were  $\geq 0.997$  and 0,986 with standard deviation 3,42% and 7,94% respectively. The R<sub>f</sub> value was found 0.55±0.04.

After the optimization and validation of this presented method, convenience foods for infants such as fruit juice, puree will be extracted and analyzed to determine PAT by this method, and daily intake limits will be calculated according to the results. Thus, data obtained will show the possible presence of PAT as a carcinogenic substance in infant food products.

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