Pyrrolizidine Alkaloids - Industry Perspective

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Early Days
Comfrey has a long history of use by herbalists

- Widely sold for teas

- When FDA raised concerns about PA safety, comfrey became an external use only ingredient

- Butterbur is also used and is of concern
Comfry Leaf? A typical raw material sold in the 90's

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FDA-NIH Action
Standards and Methods Are Needed

- FDA worked with NIH-ODS to get standards and methods developed
- 2000 - NIH-ODS Contracted with Flora Research Laboratories to have comfrey produced under contract and to isolate pyrrolizidine alkaloids
- 2001 - FRL had a crop produced, harvested and processed for the study with voucher/herbarium specimen
- 2001 - FRL began isolation of the PA’s to the crude extract phase
- 2001 - FRL requested approval for Phase II isolation and purification
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• 2001 - FDA decides to do the work internally for ease and speed and cancels project

• 2020 - No PA standards or official methods from FDA actions
20 Years Later

• Still no standard methods of analysis for PA’s in the United States

• Many PA standards for analysis are now available but they are costly and hard to obtain domestically

• Industry still calls on labs for this testing but infrequently thus making the cost of developing in house standards and methods prohibitive

• PA’s pose a health risk to the public and more research is needed to understand the true exposure to the consumer through dietary supplements
Current Needs

• The proposed method in Europe is very promising and should be considered by USP for a general method chapter

• A PA standard kit (100ug/mL solutions) for cost control and consistency would allow for better, more unified testing

• Research into actual PA levels found in various crops used by industry and in products sold to consumers would allow for a better evaluation of risk and safety issues
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