

Furan in Food

Summary and Charge to the FAC and SCNT

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June 8, 2004



FDA actions on furan in food

- ✍ Development of quantitative method
 - Available on CFSAN website
 - Undergoing round robin testing
- ✍ Exploratory survey
 - More than 150 infant and adult foods tested
 - Testing of more foods underway



FDA actions on furan in food

- ✍ Preliminary exposure assessment
- ✍ FR request for data and information
- ✍ International interactions
 - Already yielding advances in understanding formation



Some future actions on furan in food

- Evaluation of received data
- Review of NTP study by Cancer Assessment Committee (CAC)
- Development of Action Plan



Data Needs: Occurrence and Exposure

- ✍ Particular foods in which furan occurs
- ✍ Levels of furan in these foods
- ✍ Formation and occurrence in home-prepared foods
- ✍ Environmental sources of exposure to furan for the typical consumer



Data Needs: Mechanisms of Formation

- ✍ Possible mechanisms of furan formation
- ✍ Variables that enhance or mitigate furan formation
- ✍ The stability or dissipation of furan in foods
- ✍ The effect of post-production practices on furan levels in foods



Data Needs: Toxicology of Furan

- ✍ Mechanism(s) of furan toxicity, mutagenicity, and carcinogenesis
- ✍ The reproductive and developmental toxicology of furan
- ✍ The metabolism of furan *in vivo* including characterization of reactive furan metabolites



Data Needs: Toxicology of Furan

- ✍ The diversity of furan pharmacokinetics in humans or the alteration of furan metabolism as a result of dietary, medical, or environmental interactions
- ✍ Data on whether sub-cytotoxic furan doses produce any adverse effects, such as a change in enzyme activities or ATP levels



Data Needs: Toxicology of Furan

- ✍ The effects of furan doses lower than those used in the NTP study
 - To establish a dose-response curve for various toxicological endpoints
 - To determine whether furan toxicity, including carcinogenesis, is a threshold dependent event
 - To determine whether carcinogenic activity is secondary to hepatotoxic effects



Data Needs: Toxicology of Furan

- ✍ The mutagenicity of furan in the TA100 strain in the Ames test
- ✍ The behavior of furan in other *in vivo* assays for mutagenicity or toxicity



Charge

The Food Advisory Committee and Contaminants and Natural Toxicants Subcommittee are being asked to provide input on data that would be helpful for further evaluation of potential risks posed by the presence of furan in food.



Question

Taking into consideration the data needs already identified in the Federal Register notice requesting data on furan, and the presentations at this meeting, are there any additional data that are needed to fully assess the risk of furan in food?



**Thank you for your
participation in the
FAC/SCNT meeting
on furan in food.**

