Safety Considerations of DNA in Food

Recombinant DNA techniques are capable of introducing genetic changes into food organisms that are more predictable than those introduced through conventional breeding techniques. This review discusses whether the consumption of DNA in approved novel foods and novel food ingredients derived from genetically modified organisms (GMOs) can be regarded as being as safe as the consumption of DNA in existing foods. It concludes that DNA from GMOs is equivalent to DNA from existing food organisms that has always been consumed with human diets. Any risks associated with the consumption of DNA will remain, irrespective of its origin, because the body handles all DNA in the same way. The breakdown of DNA during food processing and passage through the gastrointestinal tract reduces the likelihood that intact genes capable of encoding foreign proteins will be transferred to gut microflora. The review does not specifically address food safety issues arising from the consumption of viable genetically modified microorganisms but it shows that the likelihood of transfer and functional integration of DNA from ingested food by gut microflora and/or human cells is minimal. Information reviewed does not indicate any safety concerns associated with the ingestion of DNA per se from GMOs resulting from the use of currently available recombinant DNA techniques in the food chain.