Nitrofurans are antimicrobial agents not authorised for use in food-producing animals in the European Union. Nitrofurans are rapidly metabolised, occurring in animal tissues as protein-bound metabolites. The European Commission requested EFSA to provide a scientific opinion on the risks to human health related to the presence of nitrofurans in food and whether a reference point for action (RPA) of 1.0 µg/kg for the marker metabolites is adequate to protect public health. Data on occurrence of nitrofuran marker metabolites in food were extracted from the national residue monitoring plan results and from the Rapid Alert System for Food and Feed (RASFF). The CONTAM Panel concluded that these data were too limited to carry out a reliable human dietary exposure assessment. Instead, human dietary exposure was calculated for a scenario in which a single nitrofuran marker metabolite is present at 1.0 µg/kg in foods of animal origin, excluding milk and dairy products. The mean chronic dietary exposure for this worst-case scenario would range from 3.3 to 8.0 and 1.9 to 4.3 ng/kg b.w. per day for toddlers and adults, respectively. Nitrofurans and their marker metabolites, generally, are genotoxic and carcinogenic and, also, have non-neoplastic effects in animals. Margins of exposure (MOEs) were calculated at 2.0 × 105 or greater for carcinogenicity and at 2.5 × 103 or greater for non-neoplastic effects. The CONTAM Panel concluded that it is unlikely that exposure to food contaminated with nitrofuran marker metabolites at or below 1.0 µg/kg is a health concern. A scenario in which foods are considered to be contaminated with semicarbazide, from use of carrageenan as a food additive, at 1 µg/kg was used to assess whether it is appropriate to apply the RPA to foods of non-animal origin; MOEs of greater than 104 calculated for non-neoplastic effects do not indicate a health concern.