APPLICATION OF ACQUITY TQD FOR THE ANALYSIS OF MYCOTOXIN CONTAMINANTS IN PISTACHIO, ALMOND AND CASHEW NUTS.

Sandra Rontree, James Morphet and Peter Hancock

Waters Corporation, Manchester, M22 5PP, UK

This note describes an extended multi-mycotoxin method, for 25 contaminants in 3 nut matrices, which is able to meet the requirements for the analysis of regulated compounds and also includes a range of the other compounds of concern.

The four major naturally produced aflatoxins, are B1, B2, G1 and G2. This group of compounds is governed by EU legislation "Commission Regulation (EC) No 1881/2006", which states that the sum of the concentrations of the four aflatoxins in the edible part of nuts may not exceed 4 µg/kg. The concentration of aflatoxin B1 alone may not exceed 2 µg/kg.

Due to the 16x dilution factor in the extraction procedure the concentration level of detection that the Acquity TQD must achieve for the EU legislation is 0.0625 ng/mL or lower.

The method involving analysis of 25 mycotoxins with Acquity UPLC has been successfully accomplished using Acquity TQD, all compounds were seperated successfully.

Contaminants such as aflatoxins, ochratoxin A and trichothecenes can be quantified using the method described at levels corresponding with the EU legislation limits.