METHOD VALIDATION FOR DETERMINATION OF *TRANS*-RESVERATROL IN HUMANA PLASMA BY LC-MSD

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Trans-resveratrol, a natural product present in daily diet, has been suggested as having protective effects against cancer and cardiovascular diseases. However, its oral bioavailability in man is still a matter of some debate. We report the development of a validated sensitive and specific high performance liquid chromatography/mass spectrometer detector (LC-MSD) assay for measurement of *trans*-resveratrol in human plasma. Using a solid phase extraction technique, the method provides a linear response from 0.5 to 100 ng/ml. The intra-assay accuracy for *trans*-resveratrol, calculated as percent error, ranged from –9.1587% to 8.2150% and the precision (% CV) from 0.9069% to 3.0136%. The inter-assay accuracy assessment, over 3 days, ranges from –11.5743% to 0.9051% and the precision ranged from 3.9240% to 10.8023%. At this range *trans*-resveratrol was considered to be stable in human plasma following storage for approximately 6 hours at room temperature with previous storage at -80ºC for 24 hours. *Trans*-resveratrol was considered to be stable after three freeze/thaw cycles of specimens stored at approximately –80 ºC. The plasma extracts were considered to be unstable following storage for approximately 24 hours or 20 hours at room temperature on the autosampler. Using this method it is possible to analyse up to 59 samples in one analytical batch.

The results obtained during validation proved the suitability of this LC-MSD assay for the determination of *trans*-resveratrol in human plasma samples, and may be used in support of plasma *trans*-resveratrol bio-availability studies.

[a]This study was conducted in a Good Laboratory Practices (GLP) compliant facility (Instituto Nacional da Farmácia e do Medicamento, Directiva nº88/320/CEE) which are accordance with OECD Principles of GLP.