**Supplementary File**

Safety and human health: The Landscape of an effective UPLC-MS/MS method for the Identification and quantification of N-Nitroso Hydrochlorothiazide impurity in Hydrochlorothiazide

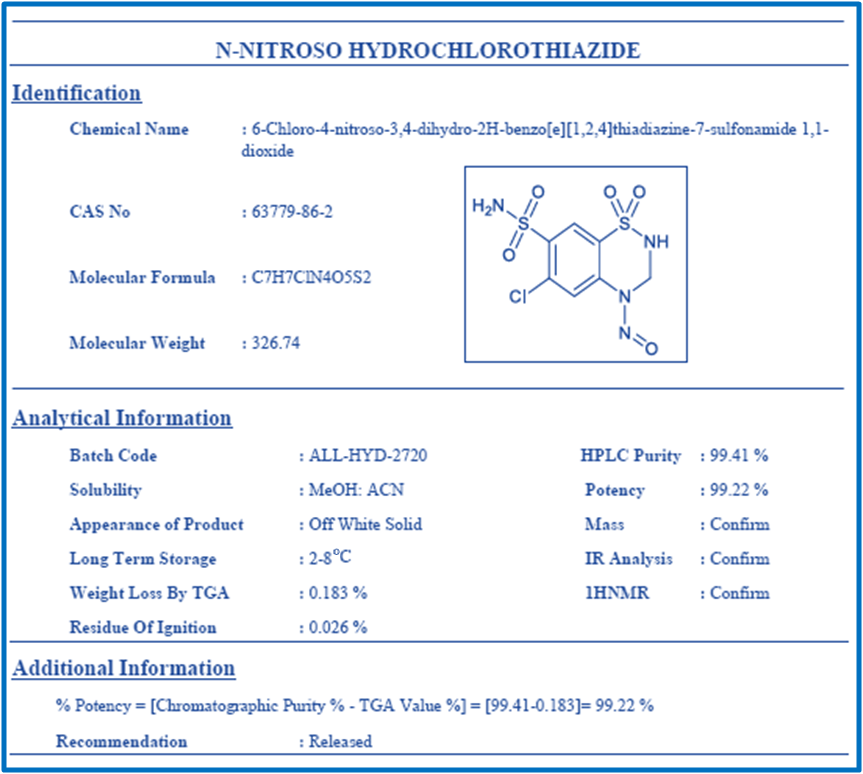
Anuradha Bhimireddya, J V Shanmukha Kumara,\*, H. N. Prasada Reddy Chittireddya, Mohammed Rafi Shaikb,\*, Mohamed E. Assalb, Mujeeb Khanb

aDepartment of Chemistry, Koneru Lakshmaiah Education Foundation, Green Fields, Vaddeswaram, A.P. -522302, India

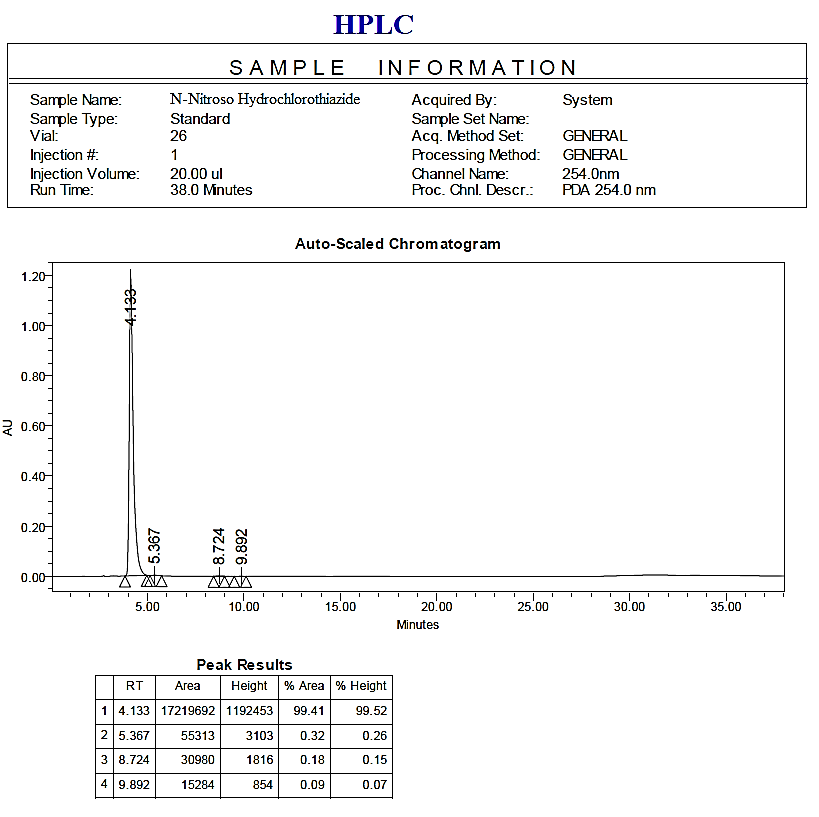
bDepartment of Chemistry, College of Science, King Saud University, P.O. Box 2455, Riyadh 11451, Saudi Arabia.

\*Correspondence: shanmukh\_fed@kluniversity.in (J.V.S.K.); mrshaik@ksu.edu.sa (M.R.S.)

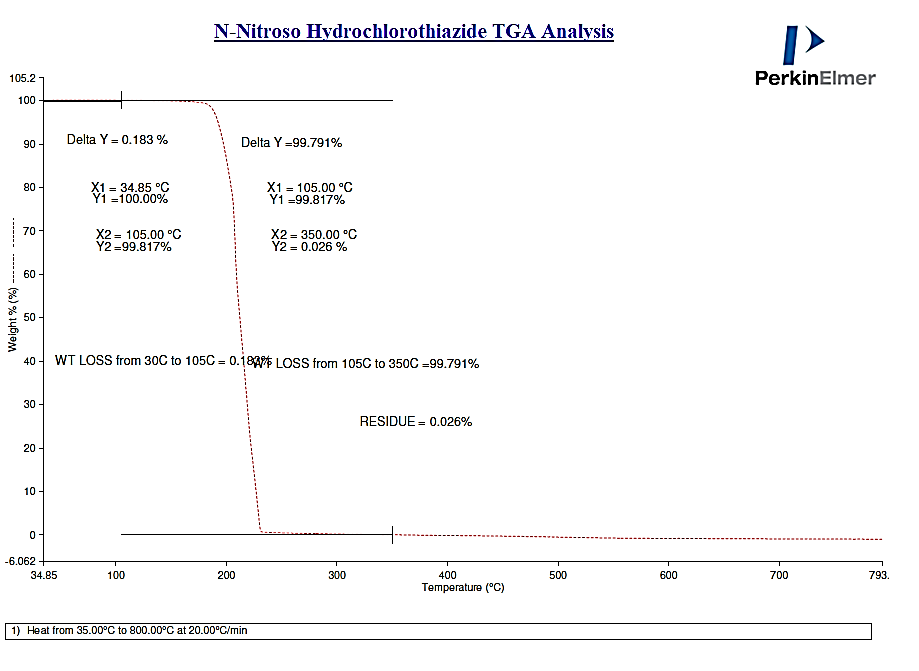
**N-Nitroso Hydrochlorothiazide (NNHCT) standard Qualification data**

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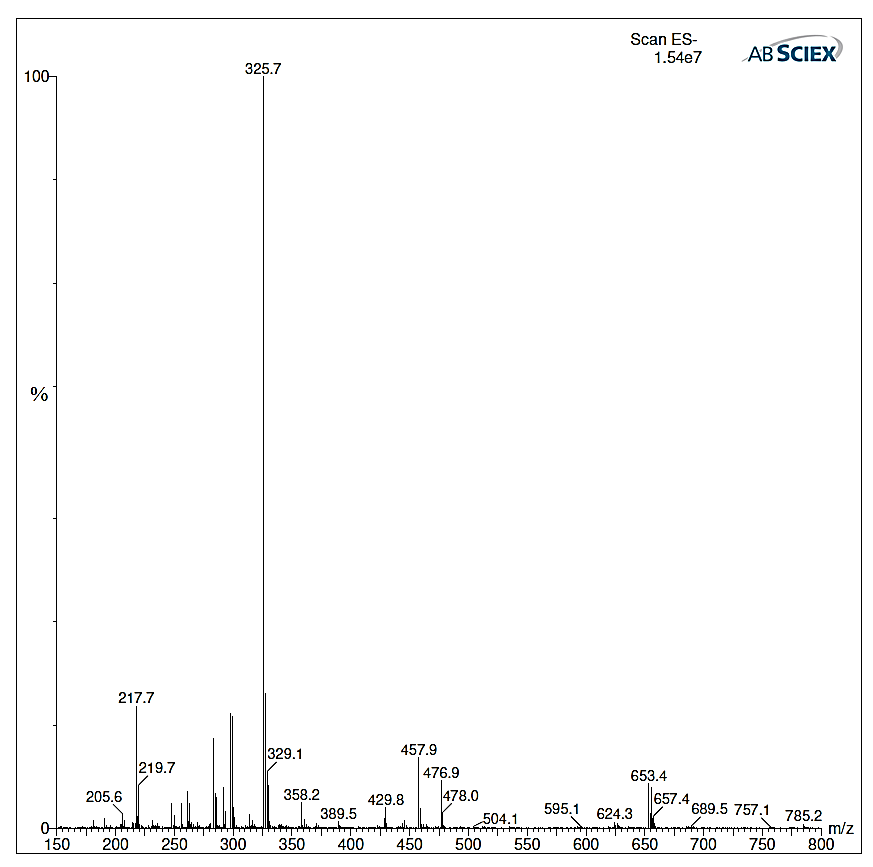
**Figure S1:** N-Nitroso Hydrochlorothiazide standard certificate of analysis

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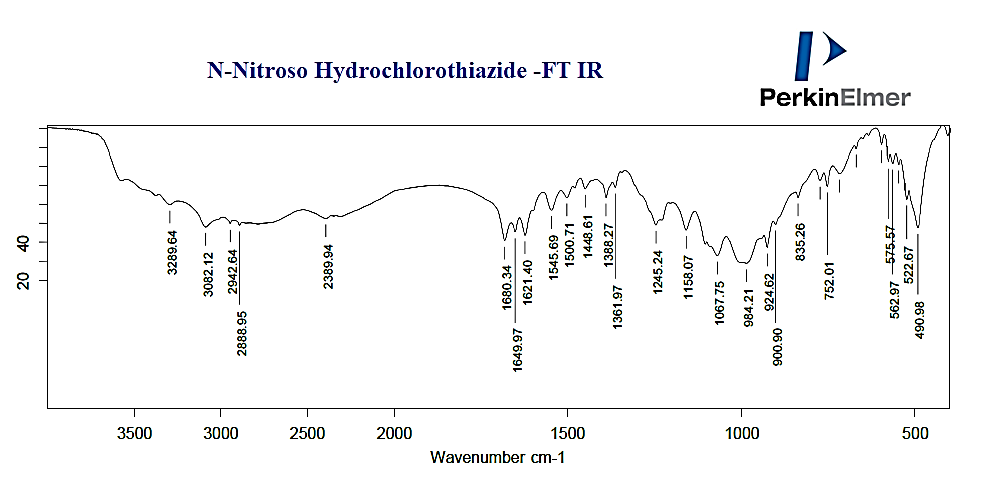
**Figure S2:**N-Nitroso Hydrochlorothiazide standard purity by HPLC analysis



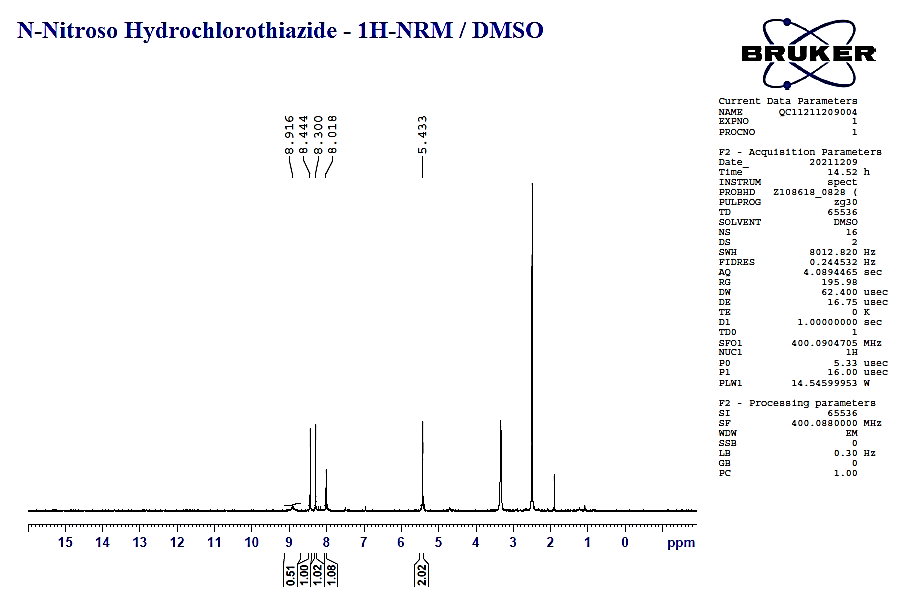
**Figure S3:** N-Nitroso Hydrochlorothiazide standard TGA analysis



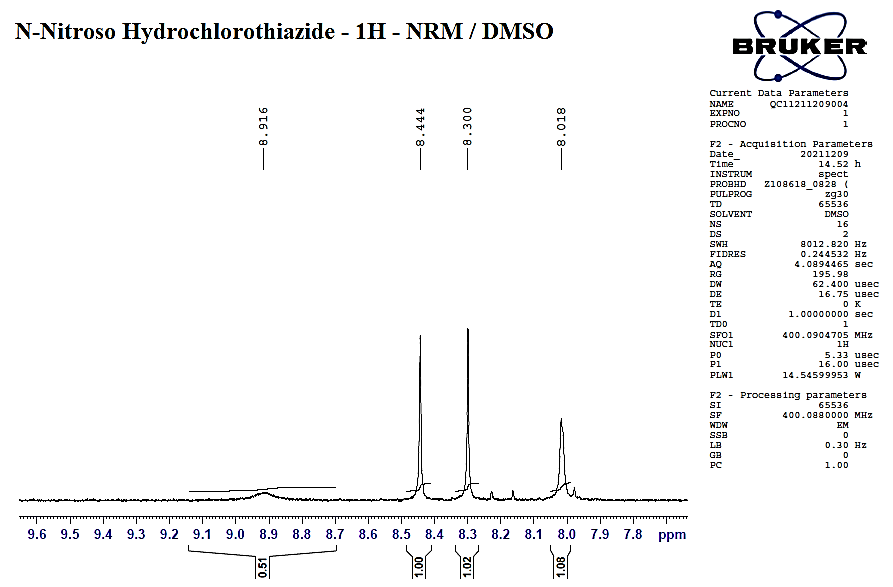
**Figure S4:**N-Nitroso Hydrochlorothiazide standard Dip mass analysis.

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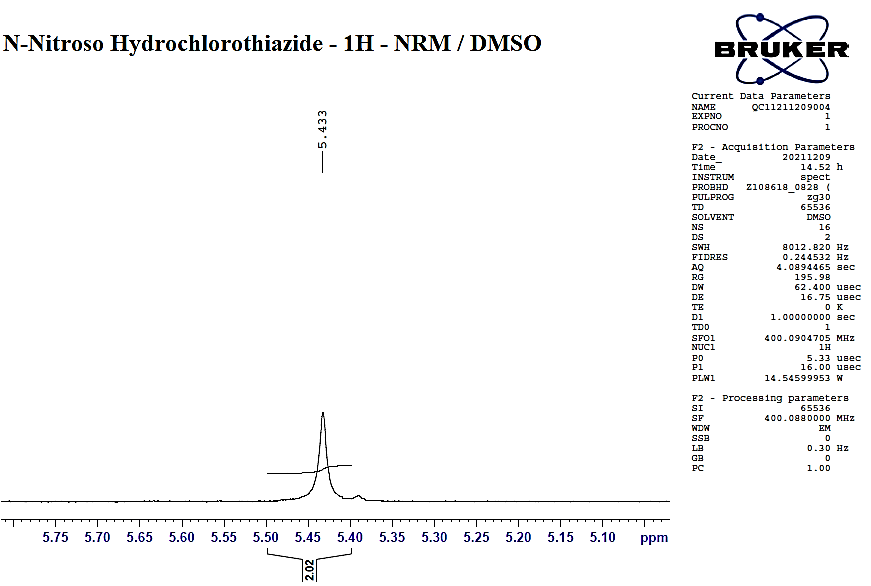
**Figure S5:**N-Nitroso Hydrochlorothiazide standard IR analysis.

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**Figure S6:**N-Nitroso Hydrochlorothiazide standard 1H-NMR/DMSO data-1.

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**Figure S7:**N-Nitroso Hydrochlorothiazide standard 1H-NMR/DMSO data-2

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**Figure S8:**N-Nitroso Hydrochlorothiazide standard 1H-NMR/DMSO data-3.

A graph of a solution

Description automatically generated

**Figure S9**: MS/MS chromatogram of Blank solution.

A collage of different solutions

Description automatically generated

**Figure S10**: MS/MS chromatogram of system suitability solution.

A graph of a solution

Description automatically generated

**Figure S11**: MS/MS chromatogram of spiked solution.

A group of graphs showing different types of time

Description automatically generated with medium confidence

**Figure S12**: MS/MS chromatogram of LOD and LOQ solutions.

A collage of different solutions

Description automatically generated with medium confidence

**Figure S13**: MS/MS chromatogram of LOD precision solution.

A collage of several graphs

Description automatically generated

**Figure S14**: MS/MS chromatogram of LOQ precision solution.

A group of graphs showing different solutions

Description automatically generated

**Figure S15**: MS/MS chromatogram of Linearity solution.

A group of graphs showing different solutions

Description automatically generated

**Figure S16**: MS/MS chromatogram of Method precision sample solution.

A group of graphs showing different solutions

Description automatically generated

**Figure S17**: MS/MS chromatogram of Method precision spiked solutions.

A group of graphs showing different solutions

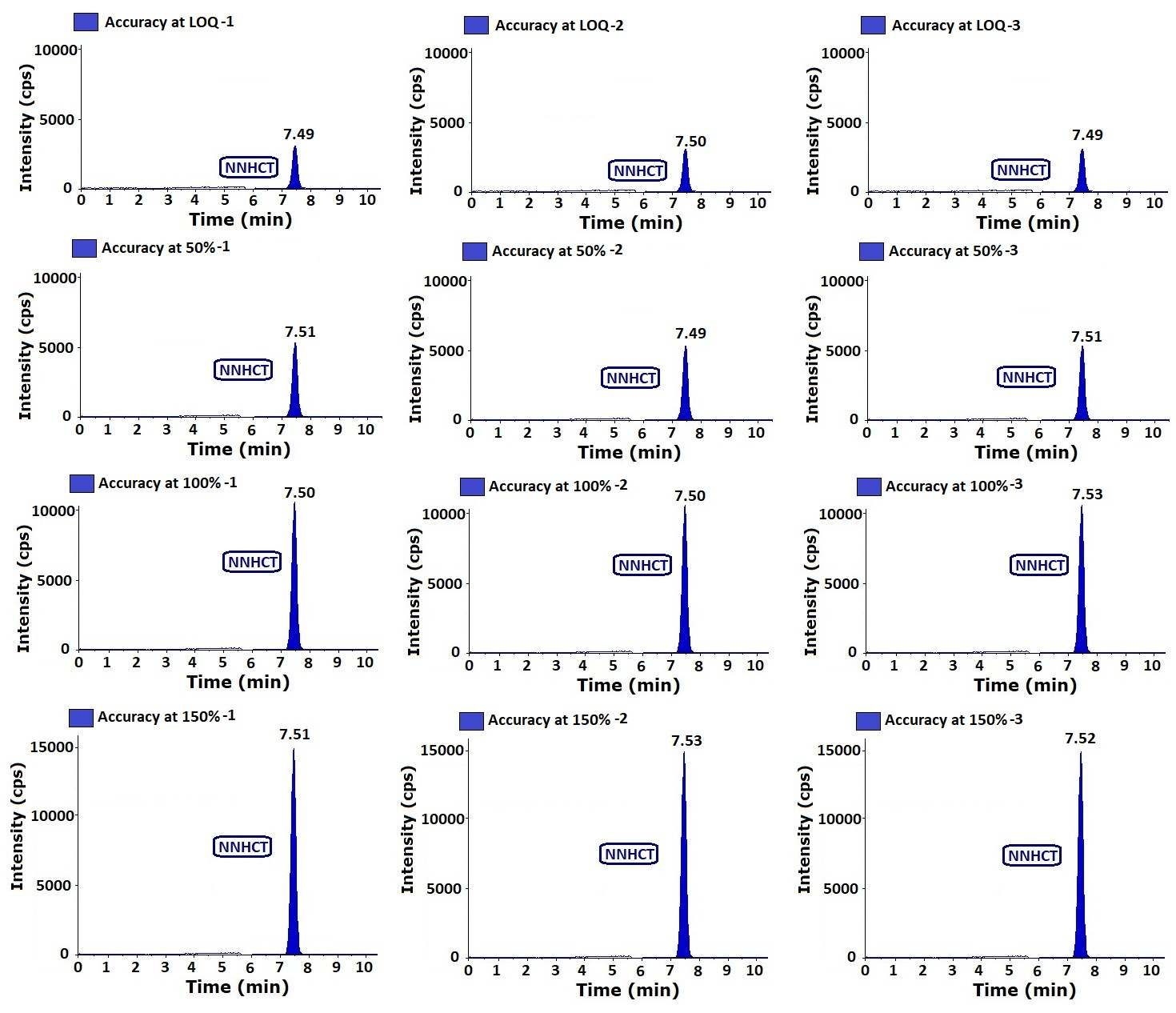
Description automatically generated

**Figure S18**: MS/MS chromatogram of Intermediate precision sample solution.

A group of graphs showing different solutions

Description automatically generated

**Figure S19**: MS/MS chromatogram of Intermediate precision spiked solution.



**Figure S20**: MS/MS chromatogram of accuracy solutions.