

## **NUCLEAR MAGNETIC RESONANCE (NMR) - Prices (In South African Rand)**

An additional admin fee of 7% will be levied for both Academic and Industry clients.

| Instrument access/hr  | Self-run                                    | Admin<br>fee | Servio<br>fee/h |      | Total   |   |                    |            |  |
|---|---|--------------|-----------------|------|---------|---|--------------------|------------|--|
| Internal Standard <sup>1</sup> H spectra (<15min. Else per hour rate) | R 58  | R 0          | Add R           | 32   | R90     |   |                    |            |  |
| Internal rate   | R168  | R 0          | Add R           | 76   | R244    | For 2 or less exprun overnight, of hours charged. I more experiment four hours. | only 3<br>For 3 or |            | Full weekend<br>charged for 8<br>hours only. |
| External Academic rate  | R277  | 7%           | Add R3          | 349  | R626    |   |                    |            |  |
| Commercial rate   | R361  | 7%           | Add R4          | 133  | R794    |   |                    |            |  |
| Professional time/hr*   | *sample prep., plo<br>feasibility, structur |              |                 |      |         | nitial discussions  | on project         |            |  |
| External Academic rate  | R557  |              |                 |      |         |   |                    |            |  |
| Commercial rate   | R1113                                       |              |                 |      |         |   |                    |            |  |
| Deuterated solvents (750 μl. ampule)                                  | CDCl3                                       | CD2Cl2       | CD3OD           | DM   | SO-d6   | D2O   | C6I                | <b>)</b> 6 | Acetone-d6                                   |
|   | R68   | R472         | R430            | R    | 2245    | R245  | R21                | 0          | R245   |
|   | Toluene-d8                                  | THF-d8       | TFA-d1          | Etha | anol-d6 | Hexane-d8   | DMF                | '-d6       | CD3CN  |
|   | R 263                                       | R 1070       | R 367           | R    | 3339    | R 1113  | R 94               | 43         | R 337  |
| Consumables   | R 80  |              |                 |      |         |   |                    |            |  |

|                                  | FoodScreener NMR Prices |                          |                           |                                      |
|----------------------------------|-------------------------|--------------------------|---------------------------|--------------------------------------|
| Accredited Authentic             | ation prices (*)        | Per sample               |                           |                                      |
| Wine                             |                         | R3000                    |                           |                                      |
| Fruit Juice                      |                         | R3000                    |                           |                                      |
| Honey                            |                         | R3000                    |                           |                                      |
| Botanical extract authentication |                         | R3000                    | Read more                 | Commercial reference sample required |
|                                  | Ple                     | ase see information on a | accredited authentication | n methods.                           |

## **Examples of common Liquid State NMR Commercial Applications**

- Biopolymers: such as PGLA, identification, monomer content and residual monomers
- Absolute Structure determination of purified organic compounds
- Speciation of Inorganic complexes
- Heparin: quality control using latest USP monograph testing for over sulphated chondroitin sulfate and other impurities
- Poloxamer: weight and % oxyethelene
- Chitosan: % deacetylation
- Silicone: polydimethylsiloxane
- Quantitative 13C NMR of polyethylene and polypropylene
- Quality control of Aloe Vera
- Polymer Tacticity
- Flavonoid identification
- Cannabis quantitative and qualitative analysis of cannabinoids

| Test                        | Application   | Monographs                   |  |
|-----------------------------|---|------------------------------|--|
|                             | General NMR method  | USP, EP 2.2.33,<br>ASTM E386 |  |
| Aloe Vera quality control   | Origin of an extract and to distinguish between different plant sources           |                              |  |
| Alginate                    | Chemical composition and sequential structure from 1H and 13C                     | ASTM F2259                   |  |
| Amyl Nitrite                | 1H Identification   | USP                          |  |
| polypropelene, polyethylene | Quantitative 13C  |                              |  |
| Buserelin                   | 1H Identification   | EP                           |  |
| Chitosan                    | % Deacetylation, 1H   | ASTM F2260                   |  |
| Cod-liver Oil               | 13C Identification and positional Distribution ( $\beta(2)$ -acyl) of fatty acids | EP                           |  |

| Enoxaparin                    | 13C Identification  | USP                         |
|-------------------------------|---|-----------------------------|
| Fats and oils                 | 1H, 13C Determination of fatty acid composition in fats and oils          | ~                           |
| Gadoversetamine               | Hydroxypropyl Betadex   | USP                         |
| Polymer tacticity             | Quantitative 13C  | ~                           |
| Goserelin                     | 13C Identification  | EP                          |
| Heparin                       | 1H Identification and OSCS screening                                      | USP, EP                     |
| Olis                          | 13C Distinction between plant and synthetic oils                          |                             |
| Hydroxypropyl Betadex         | 1H Molar Substitution   | USP, EP                     |
| Lauromacrogol                 | 13C-Average chain length of fatty alcohols and moles of ethylene oxide    | EP                          |
| Medronic Acid                 | 1H Identification and Impurity determination                              | EP                          |
| Orphenadrine Citrate          | 1H-Isomer Content   | USP                         |
| Simethicone                   | 1H- Identification  | ~                           |
| Oxytocin                      | 1H-Identification   | USP                         |
| Proteins, peptides            | 2D, 3D Structure determination from various NMR experiments               |                             |
| Plant extract complexity      | Diffusion separation of components in solution (DOSY)                     |                             |
| Poloxamer                     | 1H-Weight % Oxyethylene   | USP                         |
| Polyoxyl 10 Lleyl Ether       | leyl Ether 1H-Average polymer length                                      |                             |
| Polylactide and glycolide     | 1H, 13C- Identification, residual monomer, lactide/glycolide ratio        | ASTM F2579,<br>F1925, F2313 |
| Polyoxyl 20 Cetostearyl Ether | 1H-Average polymer length   | USP                         |
| Salmon Oil                    | 13C-Identification and Positional Distribution (β(2)-acyl) of fatty acids | EP                          |

Monographs

<sup>\*\*</sup>An additional admin fee of 7% will be charged to all external clients, both Academic and Industry.

| CD SPECTROMETER                                |  |              |  |  |  |
|--|--|--------------|--|--|--|
| Instrument access/hr.                          | Self -run  | Submitted    |  |  |  |
| Internal rate                                  | R210   | R420         |  |  |  |
| Academic rate                                  | R417   | R555         |  |  |  |
| Commercial rate                                | R477   | R695         |  |  |  |
| Professional time/hr.*  External Academic rate |  |              |  |  |  |
|  | *sample prep., plots, interpretation, report writing, consulting (initia discussions on project feasibility, structure or collaboration excluded |              |  |  |  |
| Commercial rate                                | R1113  |              |  |  |  |
| Analytical grade solvents available            | Methanol   | Acetonitrile |  |  |  |
|  | R60/ml   | R60/ml       |  |  |  |
|  | N2 gas are charged   | at R100/hr   |  |  |  |