

## Detection of S-Nitrosocompounds in Biological Samples

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S-nitrosocompounds are of strong biochemical interest due to their role as nitric oxide donors and their potential role in cardiovascular and pulmonary signaling. To elucidate the role of S-NO in proteins, exact concentrations must be measured in healthy and diseased tissues and cells throughout the body. Further understanding would benefit from metabolic studies of S-NO groups utilizing isotopic labeling. Levels of S-NO groups in cell and organ systems are typically 10-1000 nM, however this number is not known exactly for many tissues due to the potential breaking or formation of these bonds during sample preparation. Currently the most sensitive technique available for S-NO detection, chemiluminescence, has a limit of detection of 50 nM. However, chemiluminescence has the significant drawback of lack of specificity between <sup>14</sup>NO and <sup>15</sup>NO, making the technique not viable for use in metabolic studies. With the current cavity ring down (CRDS) set up in the Lehmann lab limits of detection of 2 pico moles and 5 pico moles for <sup>14</sup>NO and <sup>15</sup>NO respectively, which corresponds to concentrations of 20-50 nM in a typical 100  $\mu$ L sample. Progress toward measuring S-NO groups in biological samples will be presented.