

DETECTION OF *in vitro* S-NITROSYLATED COMPOUNDS WITH CAVITY RING-DOWN SPECTROSCOPY

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Nitric oxide has been of strong biological interest for nearly 40 years due to its role in cardiovascular and nervous signaling. It has been shown that S-nitroso compounds are the main carrier molecule for nitric oxide in biological systems. These compounds are also of interest due to their relationship to several diseases including muscular dystrophy, stroke, myocardial infarction, Alzheimer's disease, Parkinson's disease, cystic fibrosis, asthma, and pulmonary arterial hypertension. Understanding the role of these S-nitroso compounds in these diseases requires concentration studies in healthy and diseased tissues as well as metabolic studies using isotopically labeled S-nitroso precursors such as ^{15}N -arginine. The current widely used techniques for these studies include chemiluminescence, which is blind to isotopic substitution, and mass spectrometry, which is known to artificially create and break S-NO bonds in the sample preparation stages. To this end we have designed and constructed a mid-IR cavity ring-down spectrometer for the detection of nitric oxide released from the target S-nitroso compounds. Progress toward measuring S-NO groups in biological samples using the CRDS instrument will be presented.