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## Department

Chemistry

# C-nitroso donors of neutral nitric oxide to treat hypertension and other diseases

## Value proposition

Hypertension, also known as high blood pressure, can lead to severe complications and increase the risk of heart disease, stroke, and death. About 1 out of 3 US adults, or about 75 million people have high blood pressure. Nitric oxide (NO) donors clinically used for vasodilation can effectively reduce blood pressure. However, neutral nitric oxide donors that are used for this indication are unstable and therefore have storage stability problems. As a result, their clinical utilities are limited to acute conditions such as acute myocardial infarction and congestive heart failure. A technology that can solve the storage stability problem of neutral nitric oxide donors need to be discovered in order to use NO for chronic conditions such as hypertension.

## Technology

To overcome this current problem limiting the therapeutic use of neutral nitric oxide donors, Duke scientists have invented compounds that release neutral nitric oxide in a second order reaction. These compounds are storage stable and do not decompose to release nitric oxide over time or in light. When needed, activation of these compounds can trigger the release of nitric oxide. This stable shelf-life property will allow these compounds to be used in treating not only acute conditions but also chronic conditions such as hypertension and coronary artery disease. When tested on a patient with chronic hypertension, this compound could safely and effectively reduce the patient's blood pressure.

## Advantages

- Neutral nitric oxide has been used commonly in clinical practices
- Demonstrated clinical success
- Can be easily produced

