



UNIVERSITY of NORTH TEXAS HEALTH SCIENCE CENTER

Technology Transfer & Commercialization

## Select Antipsychotic Drugs Protect the Brain from Stroke

### Learn more!

Robert McClain, PhD  
Associate Vice President  
[rmcclain@hsc.unt.edu](mailto:rmcclain@hsc.unt.edu)  
817-735-2618

### Technology Case

2005-02  
2005-08  
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### Our Inventors

Dr. John Schetz  
[jschetz@hsc.unt.edu](mailto:jschetz@hsc.unt.edu)

Dr. James Simpkins  
[jsimpkin@hsc.unt.edu](mailto:jsimpkin@hsc.unt.edu)

### Patent Status

US published Application  
20060106064

### Publications

A prototypical Sigma-1 receptor antagonist protects against brain ischemia. *Brain Res* 1181:1 (2007)

Repurposing old drugs for the treatment of acute ischemic cerebral stroke: an in silico retrospective analysis in a human population.

Proceedings of the Int. Forensic and Med. Sci. Conf., Thailand. (2008)

3500 Camp Bowie Blvd  
Fort Worth, TX 76107  
Phone: 817-735-5147  
FAX: 817-735-5485  
[techtransfer@hsc.unt.edu](mailto:techtransfer@hsc.unt.edu)

## Discovery

- Anti-psychotic, sigma-1 receptor antagonists were found to be neuroprotective in cell culture studies. This result was confirmed for a butyrophenone drug, haloperidol, in a rat tMCAO model of ischemic cerebral stroke
- A retrospective study showed that patients on haloperidol who underwent CABG surgery had a significantly reduced risk of stroke

## Features

- Post-stroke administration reduced ischemic lesion volume
- Prophylactic use reduced the risk of stroke after surgery
- Sigma-1 receptor antagonists are available for repurposing

## Benefits

- Acute, pre-surgical treatment with a sigma-1 receptor antagonist may reduce the risk of stroke with surgery
- Repurposing clinically tested compounds will lower regulation hurdles and mitigate commercialization risks
- Pharmacological basis and mechanistic understanding is a platform for developing a new class of stroke prevention drugs

## Opportunities

- Risk of stroke during surgery is an unmet medical need with a huge potential market:
  - There is an increased risk of ischemic stroke for 30 days after anesthesia and any surgery
  - Estimated incidence of any stroke following cardiovascular surgery ranges from 2-10%
  - In 2003, 15.5 million US inpatient procedures were performed on patients 65 years and older
  - In 2003, over one million U.S. open-heart, bypass, and valve surgeries were performed.