Novel Anti-Hypertensive Agents

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Opportunity

Hypertension

• Defined as elevated systolic blood pressure >140mm Hg

• At least 600 million hypertension sufferers worldwide

• In 2006, the hypertension market contained 11 blockbuster drugs

• The antihypertensives market is expected to reach $37 billion by 2017
Opportunity

• Each treatment is represented by a different class of drug and provides only incremental decrease of blood pressure

• As many as 30% of people with high blood pressure may have resistant hypertension and do not respond to treatment

• Up to 39% of patients WW are intolerant to gold standard ACE-inhibitors

• Mitochondrial-targeted antioxidants represent a completely new class of antihypertensive treatments
Technology

- Hypertension is associated with increased mitochondrial production of reactive oxygen species (ROS)
- Increased levels of ROS results in oxidative stress and endothelial dysfunction
- Mitochondrial-targeted nitroxides which scavenge ROS provides a novel therapeutic intervention in hypertension
Attenuation of angiotensin II-induced hypertension in mice by mitochondrial-targeted antioxidant (mT)
Angiotensin II infusion increases vascular superoxide production. mT treatment reduces superoxide production to normal levels.
Angiotensin II infusion reduces vascular levels of nitric oxide. Treatment with mT significantly increases nitric oxide.
Provisional patent application filed 11/7/2008

Claims include:

• Therapeutic compositions

• Methods of treatment for cardiovascular and other diseases

• Combination treatment
Development Plan

Future research projects

• Comparison studies with other anti-hypertensive agents

• Toxicity studies

• Further development with additional compounds