



Rapid Blood Test for Detecting Ischemic Injury to the Central Nervous System

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Lesanne at a Glance

- Neurological ischemia diagnostics company
 - Stroke
 - Traumatic Brain Injury
 - Neurological Impairment Following Cardiac Surgery
- Formed by The Channel Group in 2006
- Laboratory near Yale University
- Proof-of-principle clinical study conducted
- Issued patents covering novel biomarker

Lesanne Strategy

- Commercialize diagnostic for ischemic stroke
- Extend use of diagnostic for neurological ischemia associated with other conditions
 - Traumatic Brain Injury
 - Coronary Artery Bypass Graft Surgery
 - Coronary Angiography and Angioplasty

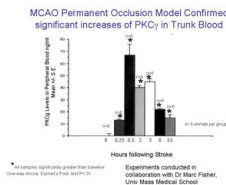
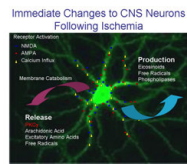
Benefits In-Vitro Diagnostic for Stroke

- Early and rapid diagnosis to allow emergency personnel to triage patients for transfer to stroke centers
- Faster diagnosis in emergency rooms
- Much of the population is not within easy reach of sophisticated imaging centers
- Synergistic with various imaging techniques

Lesanne's PKC γ Biomarker Ischemic Stroke

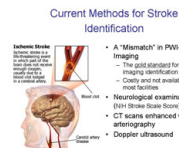
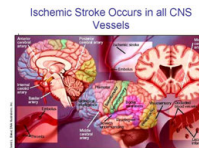
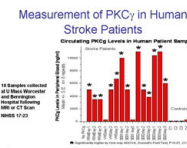
- Early signaling molecule
- Only found in the CNS in healthy individuals
- Detectable in peripheral blood within 15 minutes after blood brain barrier has been breached
- Released in direct response to ischemia
- Other biomarkers measure neuronal damage or inflammation

Stroke



PKC γ Levels were Elevated Prior to Infarct Formation

Time After Occlusion (minutes)	PKC γ Level (pmol/L)
0	~1
15	~10
30	~20
45	~30
60	~40
75	~50
90	~60
105	~70
120	~80
135	~90
150	~100
165	~110
180	~120
195	~130
210	~140
225	~150
240	~160
255	~170
270	~180
285	~190
300	~200



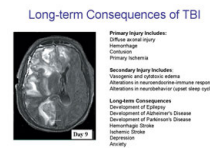
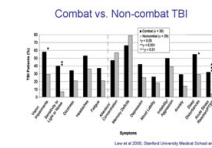
Traumatic Brain Injury

Lesanne's PKC γ Assay is Applicable to Traumatic Brain Injury

Mechanical strain and increased intracranial pressure results in ischemia and pathways of damage

- rapid membrane depolarization
- rapid rise in intracellular Ca²⁺
- glutamate excitotoxicity
- release PKC γ and AA

Use of assay for TBI is covered by current US and Worldwide patents



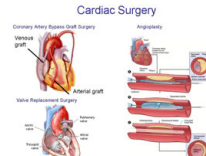
Cardiac Surgery

Lesanne's Ischemia Assay is Applicable to Cardiac Surgery

Several thousand air or particulate emboli form during cardiac surgery

Embol cause localized reduction of blood flow

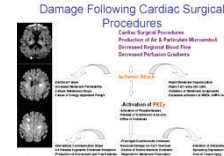
Embol produce cerebral ischemia



Annual U.S. Incidence of Various Cardiac Surgery Procedures

- 500,000 CABG surgical procedures
- Increased risk of stroke and cerebral injury
- Reduced regional blood flow (80% of patients)
- Cognitive deficits (50% of patients at discharge)
- 860,000 angioplasty procedures
- 70,000 heart valve replacements

Lesanne's assay identifies ischemic patients in the surgical suite, enabling rapid intervention for stroke and cerebral injury



Preclinical and Clinical Drug Development Applications of Lesanne's Diagnostic

- Preclinical**
- Profile lead candidates using animal models such as MCAO to increase the quality of CNS agents entering clinical trials
- Clinical**
- Select a homogenous population to increase the statistical power and success rate of clinical trials for certain CNS indications

Research Collaboration Opportunities

Inquiries welcome regarding the Lesanne PKC γ diagnostic

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