#Ref: 00651 April 19th 2007

Vaccine composition and its use against neurodegenerative disease associated with SOD1 abnormalities

Technology

At present there is no effective treatment for Amyotrophic Lateral Sclerosis (ALS). A novel approach for treatment based on either active immunisation, vaccination with recombinant superoxide dismutase (SOD1), or passive immunisation with antibodies against SOD1 species has been tested with success in mice. This therapeutic approach is based on reduction of toxic SOD1 mutant and it would not interfere with other drug treatment. Moreover, monoclonal antibodies using the hybridoma technology have been derived against SOD1 species. Of particular interest is the availability of unique monoclonal antibodies that recognizes specifically the mutant forms of SOD1 linked to ALS and not the normal (WT) SOD1. Such monoclonal antibodies can also be applied for diagnosis of ALS caused by SOD1 mutations.

Applications

- Immunisation approaches for treatment of ALS and other diseases with SOD1 abnormalities.
- Monoclonal antibodies against SOD1 species that can be used for passive immunisation approaches aiming to reduce the levels of toxic SOD1 species.
- Rapid diagnosis of ALS caused by SOD1 gene mutations.
- Monoclonal antibodies that can recognize any forms of SOD1, including wild type and mutant forms. Such antibodies can be used as a tool for detection of any SOD1 species.

Competitive advantages

- No deleterious side effects.
- Compatible with other therapeutic drugs
- Simple rationale with focus on elimination or neutralisation of toxic SOD1 species
- Rapid and inexpensive diagnosis of familial ALS.
- The current methods are based on the tedious DNA sequencing of the SOD1 gene

State of development

In vitro

Business opportunity

Université Laval is seeking partners, commercialize this technology.

Intellectual Property

Patent pending: PCT/CA2006/001444 (2006-08-31)

Antibodies and their use in the treatment, prevention and diagnosis of a disease associated with SOD1 abnormalities

JP. Julien et *al*.

Contact

Najat Aattouri Ph.D.
Research Management Advisor
418.656.2131 #2576
najat.aattouri@vrr.ulaval.ca

UNIVERSITÉ LAVAL