NOVEL POLYMORPHIC FORM OF
N-[2-(6-FLUORO-~~LH~~1H-INDOL-3-YL)ETHYL]-3-(2,2,3,3-TETRAFLUOROPROPOXY)BENZYLAMINE
HYDROCHLORIDE FOR THE TREATMENT OF ALZHEIMER'S

FIELD OF THE INVENTION

The present invention relates to a novel polymorphic form of N-[2-(6-fluoro-lH-indol-3-yl)ethyl]-3-(2,2,3,3-tetrafluoropropoxy)benzylamine hydrochloride.

BACKGROUND OF THE INVENTION

The incidence of Alzheimer's disease is expected to increase through the year 2050 with an estimated prevalence of 11 to 16 million cases. Currently, two classes of medications are FDA approved for managing symptoms of Alzheimer's disease - acetylcholinesterase inhibitors (AChEIs) and an N-methyl-D-aspartase (NMDA) receptor antagonist. AChEIs are commonly used as initial treatment on diagnosis. The AChEIs - donepezil, rivastigmine, galantamine, and tacrine - are indicated for mild-to-moderate Alzheimer's disease; only donepezil is approved for the severe stage.

AChEIs do not help everyone who has Alzheimer's disease and in fact are not efficacious in many patients. Considering that AChEIs and memantine have only a modest symptomatic effect, and cannot prevent Alzheimer's disease decline and slow disease progression, there is a high unmet need for more effective symptomatic treatments and for a disease modifying/slowing therapies.

The use of selective 5-HT6 receptor antagonists to treat cognitive dysfunction has been suggested and is based on several lines of reasoning. For example, selective 5-HT6 receptor antagonists have been shown to modulate cholinergic and glutamatergic neuronal function. The activity of selective 5-HT6 receptor antagonists has been demonstrated in animal models of cognitive function. Since the disclosure of the first selective 5-HT6 receptor antagonists, there have been several reports on the activity of these selective compounds in in-vivo models of cognitive function. N-[2-(6-fluoro-lH-indol-3-yl)ethyl]-3-(2,2,3,3-tetrafluoropropoxy)benzylamine, CAS number 467458-02-2, (herein also referred to as "Lu AE58054") is a 5-HT6 receptor antagonist and its chemical structure is depicted below: