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SciFinder - Activated MAO-B...

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Research Topic "selegiline"

> references (3761)

> Activated MAO-B in the brain o...

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Save

Print

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Return

Previous

Next

3. Activated MAO-B in the brain of Alzheimer patients, demonstrated by [11C]-L-deprenyl using whole hemisphere autoradiography

By Gulyas, Balazs; Pavlova, Elena; Kasa, Peter; Gulyas, Karoly; Bakota, Lidia; Varszegi, Solvia; Keller, Eva; Horvath, Monika; Csilla; Nag, Sangram; Hermecz, Istvan; Hagyar, Kalmán; Haldin, Christer

In the human brain the monoamine oxidase-B enzyme or MAO-B is highly abundant in astrocytes. As astrocyte activity and, consequently, the activity of the MAO-B enzyme, is up-regulated in neuroinflammatory processes, radiolabeled analogs of deprenyl may serve as an imaging biomarker in Alzheimer's disease. In the present study [11C]-L-deprenyl, the PET radioligand version of L-deprenyl or **selegiline**, a selective irreversible MAO-B inhibitor was used in whole hemisphere autoradiog. expts. In human brain sections in order to test the radioligand's binding to the MAO-B enzyme in human brain tissue, with an eye on exploring the radioligand's applicability as a mol. imaging biomarker in human PET studies, with special regard to diagnostic detection of reactive astrogliosis. Whole hemisphere brain sections obtained from Alzheimer patients and from age matched control subjects were examd. In control brains the binding of [11C]-L-deprenyl was the highest in the hippocampus, in the basal ganglia, the thalamus, the substantia nigra, the corpus callosum laterale, the nucleus accumbens and the periventricular gray matter. In Alzheimer brains significantly higher binding was obsd. in the temporal lobes and the white matter. Furthermore, in the Alzheimer brains in the hippocampus, temporal lobe and white matter the binding neg. correlated with Braak stages. The highest binding was obsd. in Braak 3-II, whereas it decreased with increasing Braak grades. The increased regional binding in Alzheimer brains coincided with the presence of an increased no. of activated astrocytes, as demonstrated by correlative immunohistochem. studies with GFAP in adjacent brain slices. Deprenyl itself as well as the MAO-B antagonist rasagiline did effectively block the binding of the radioligand, whereas the MAO-A antagonist piraridinol did not affect it. Compds. with high affinity for the FBR system did not block the radioligand binding either, providing evidence for the specificity of [11C]-L-deprenyl for the MAO-B enzyme. In conclusion, the present observations indicate that [11C]-L-deprenyl may be a promising and selective imaging biomarker of increased MAO-B activity in the human brain and can therefore serve as a prospective PET tracer targeting neuroinflammation and neurodegeneration.

Indexing

Mammalian Pathological Biochemistry (Section 14-10)

Concepts

Brain

Insula; activated MAO-B in the brain of Alzheimer patients, demonstrated by [11C]-L-deprenyl using whole hemisphere autoradiog.

Nucleus

Nucleus subthalamicus; activated MAO-B in the brain of Alzheimer patients, demonstrated by [11C]-L-deprenyl using whole hemisphere autoradiog.

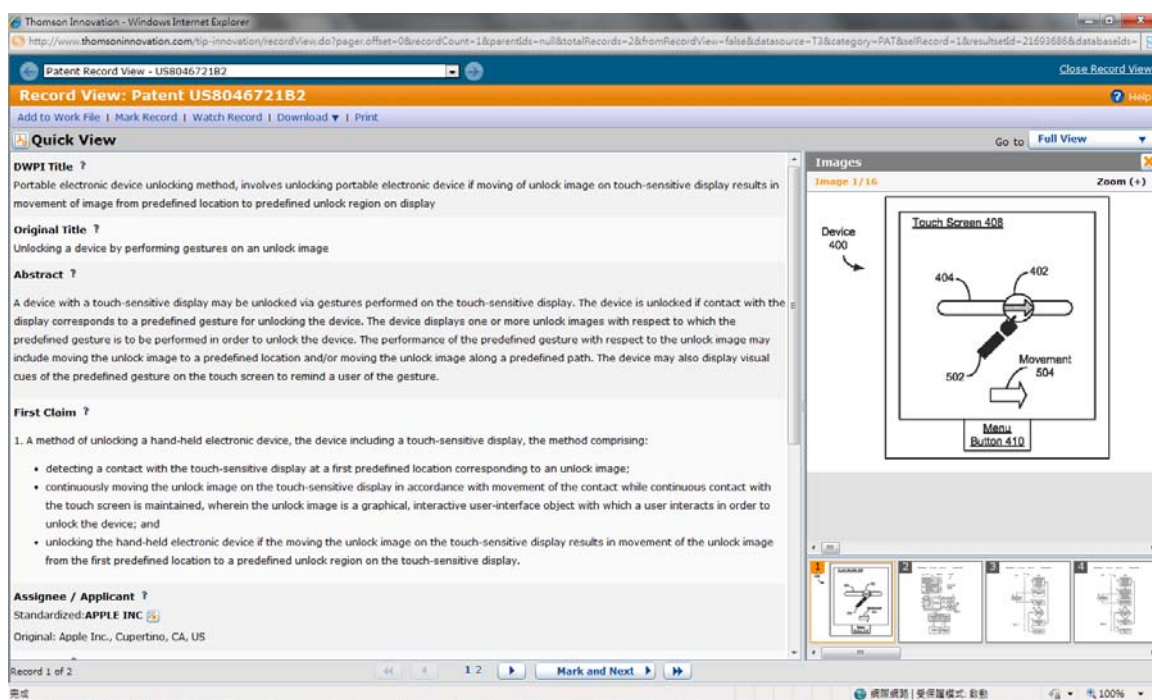
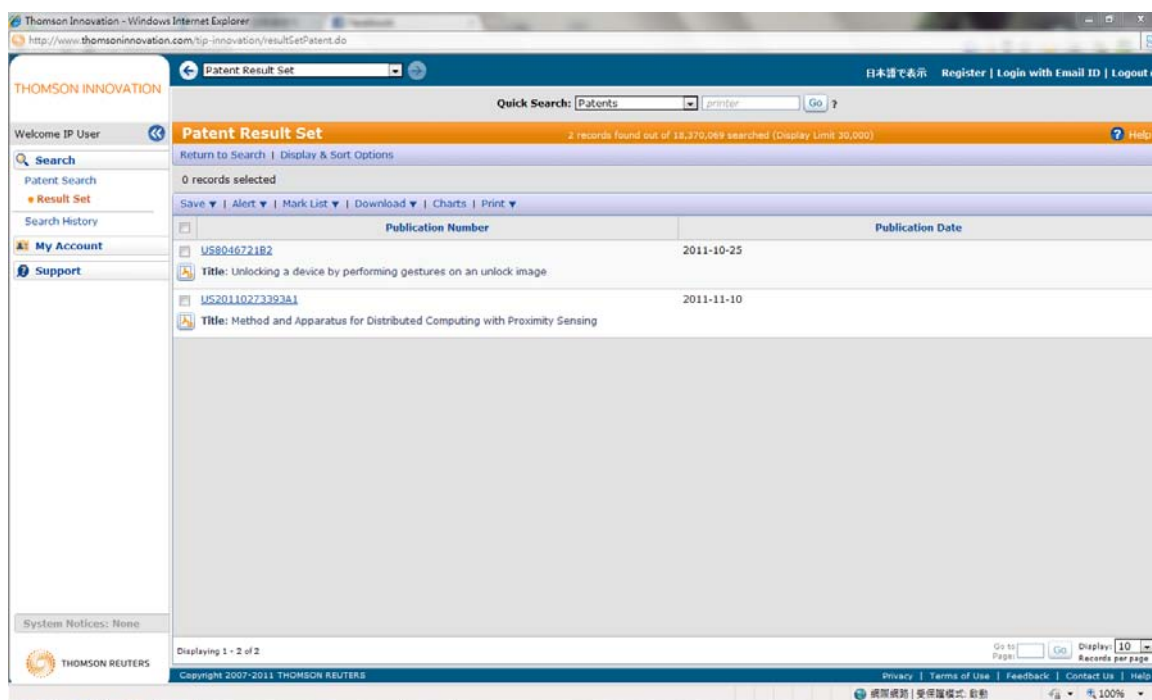
Substances

9001-66-5

14611-51-9 L-Deprenyl

activated MAO-B in the brain of Alzheimer patients, demonstrated by [11C]-L-deprenyl using whole hemisphere autoradiog.

Adverse effect, including toxicity; Biological study, unclassified; Biological study



到底要找哪一個專利，其實我一頭霧水，後來直到 10/25 後之後，我終於找到了。那天新聞沸沸揚揚的，是有關蘋果公司所註冊的「滑動解鎖」專利，稍微看了一下原文之後，發現這一個專利的範圍管轄很大，以後的智慧型手機會不會都不用這種方式解鎖了。

心得：

當初說要學這兩套網站資料庫時，我其實愣了一下，因為這讓我感到很不可思議，藥學科技不是做實驗嗎？但是真正開始學習之後，我才發現，並不是這樣的。

學會這兩套檢索網站真的很方便，雖然我目前用不到，不過技多不壓身，這是大家都知道的道理，這些東西學起來對未來會多幫助，不論是要念研究所，或是當藥師都可以使用。而且查詢專利在這一個資訊爆炸的時代，真的是十分方便啊！不過這授權很多都要在學校才可以使用，畢業之後要使用的難度就高很多了，現在真的要好好把握機會才是。