A Manuscript Microscope 'Sentence Audit' of:

Inhibition of peripheral VEGF signaling rapidly reduces leucocyte obstructions in brain capillaries and increases cortical blood flow in an Alzheimer's disease mouse model

What is the Manuscript Microscope Sentence Audit?

The Manuscript Microscope Sentence Audit is a research paper introspection system that parses the text of your manuscript into minimal sentence components for faster, more accurate, enhanced proofreading.

Why use a Sentence Audit to proofread your manuscript?

- Accelerated Proofreading: Examine long technical texts in a fraction of the usual time.
- Superior Proofreading: Detect subtle errors that are invisible to traditional methods.
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- Reliable Proofreading: Ensure every single word of your manuscript is correct.
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Bonus 1: Improved Productivity: Rapidly refine rough drafts to polished papers.
Bonus 2: Improved Authorship: Cultivate a clear, concise, consistent, writing style.
Bonus 3: Improved Reputation: Become known for rigorously precise publications.

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Audit Date: 22/03/21 **Audit Identifier:** Q685RXXTBX5UGQS **Code Version:** 3.6

Features of the Sentence Audit:

The Sentence Audit combines two complementary proofreading approaches:

1. Each sentence of your text is parsed and displayed in isolation for focused inspection.
2. Each individual sentence is further parsed into Minimal Sentence Components for a deeper review of the clarity, composition and consistency of the language you used.

The Minimal Sentence Components shown are the smallest coherent elements of each sentence of your text as derived from it's conjunctions, prepositions and selected punctuation symbols (i.e. commas, semicolons, round and square brackets).

The combined approaches ensure easier, faster, more effective proofreading.

Comments and Caveats:

• The sentence parsing is achieved using a prototype natural language processing pipeline written in Python and may include occasional errors in sentence segmentation.

• Depending on the source of the input text, the Sentence Audit may contain occasional html artefacts that are parsed as sentences (E.g. "Download figure. Open in new tab").

• Always consult the original research paper as the true reference source for the text.

Contact Information:

To get a Manuscript Microscope Sentence Audit of any other research paper, simply forward any copy of the text to John.James@OxfordResearchServices.com.

All queries, feedback or suggestions are also very welcome.

Research Paper Sections:

The sections of the research paper input text parsed in this audit.

Section No.	Headings	Sentences
Section: 1	Abstract	8
Section: 2	Introduction	19
N/A	--- --- --- --- --- --- ---	0
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Title # Inhibition of peripheral VEGF signaling rapidly reduces leucocyte obstructions in brain capillaries and increases cortical blood flow in an Alzheimer’s disease mouse model

S1 [001] Abstract

S1 [002] Increased incidence of stalled capillary blood flow caused by adhesion of leucocytes to the brain microvascular endothelium leads to a 17% reduction of cerebral blood flow (CBF) and exacerbates short-term memory loss in multiple mouse models of Alzheimer’s disease (AD).

Increased incidence ...
... of stalled capillary blood flow caused ...
... by adhesion ...
... of leucocytes ...
... to the brain microvascular endothelium leads ...
... to a 17% reduction ...
... of cerebral blood flow ...
... (CBF) ...
... and exacerbates short-term memory loss ...
... in multiple mouse models ...
... of Alzheimer’s disease ...
... (AD).

S1 [003] Here, we report that Vascular Endothelial Growth Factor (VEGF) signaling at the luminal side of the brain microvasculature plays an integral role in the capillary stalling phenomenon of the APP/PS1 mouse model.

Here, ...
... we report ...
... that Vascular Endothelial Growth Factor ...
... (VEGF) ...
... signaling ...
... at the luminal side ...
... of the brain microvasculature plays an integral role ...
... in the capillary stalling phenomenon ...
... of the APP/PS1 mouse model.

S1 [004] Administration of the anti-mouse VEGF-A164 antibody, an isoform that inhibits blood brain barrier (BBB) hyperpermeability, reduced the number of stalled capillaries within an hour of injection, leading to an immediate increase in average capillary blood flow but not capillary diameter.

Administration ...
... of the anti-mouse VEGF-A164 antibody, ...
... an isoform ...
... that inhibits blood brain barrier ...
... (BBB) ...
... hyperpermeability, ...
... reduced the number ...

... of stalled capillaries ...
... within an hour ...
... of injection, ...
... leading ...
... to an immediate increase ...
... in average capillary blood flow ...
... but not capillary diameter.

S1 [005] VEGF-A inhibition also reduced the overall eNOS protein concentrations, increased occludin levels, and decreased the penetration of circulating Evans Blue dye across the BBB into the brain parenchyma, suggesting increased BBB integrity.

VEGF-A inhibition also reduced the overall eNOS protein concentrations, ...
... increased occludin levels, ...
... and decreased the penetration ...
... of circulating Evans Blue dye ...
... across the BBB ...
... into the brain parenchyma, ...
... suggesting increased BBB integrity.

S1 [006] Capillaries prone to neutrophil adhesion after anti-VEGF-A treatment also had lower occludin concentrations than flowing capillaries.

Capillaries prone ...
... to neutrophil adhesion ...
... after anti-VEGF-A treatment also had lower occludin concentrations ...
... than flowing capillaries.

S1 [007] Taken together, our findings demonstrate that VEGF-A signaling in APP/PS1 mice contributes to aberrant eNOS/occludin- associated BBB permeability, increases the incidence of capillary stalls, and leads to reductions in CBF.

Taken together, ...
... our findings demonstrate ...
... that VEGF-A signaling ...
... in APP/PS1 mice contributes ...
... to aberrant eNOS/occludin- associated BBB permeability, ...
... increases the incidence ...
... of capillary stalls, ...
... and leads ...
... to reductions ...
... in CBF.

S1 [008] Reducing leucocyte adhesion by inhibiting luminal VEGF signaling may provide a novel and well-tolerated strategy for improving brain microvascular blood flow in AD patients.

Reducing leucocyte adhesion ...
... by inhibiting luminal VEGF signaling may provide a novel ...
... and well-tolerated strategy ...
... for improving brain microvascular blood flow ...
... in AD patients.

S2 [009] Introduction

S2 [010] Vascular dysfunction plays a critical role in the pathogenesis of Alzheimer's disease (AD) and other forms of dementia.

Vascular dysfunction plays a critical role ...
... in the pathogenesis ...
... of Alzheimer's disease ...
... (AD) ...
... and other forms ...
... of dementia.

S2 [011] Many conditions that drive altered vascular structure and impaired vascular function, including hypertension, obesity, type 2 diabetes, and atherosclerosis, are primary risk factors for AD and other dementias (1).

Many conditions ...
... that drive altered vascular structure ...
... and impaired vascular function, ...
... including hypertension, ...
... obesity, ...
... type 2 diabetes, ...
... and atherosclerosis, ...
... are primary risk factors ...
... for AD ...
... and other dementias ...
... (1).

S2 [012] In addition, both AD patients and mouse models of AD show cerebral blood flow (CBF) reductions of 10-30%, beginning in the early stages of disease pathogenesis and continuing through disease progression (2, 3).

In addition, ...
... both AD patients ...
... and mouse models ...
... of AD show cerebral blood flow ...
... (CBF) ...
... reductions ...
... of 10-30%, ...
... beginning ...
... in the early stages ...
... of disease pathogenesis ...
... and continuing ...
... through disease progression ...
... (2, 3)...
... .

S2 [013] Within the AD population, there is also evidence that more severely impaired CBF is associated with poorer cognitive performance (4).

Within the AD population, ...
... there is also evidence ...

... that more severely impaired CBF is associated ...

... with poorer cognitive performance ...

... (4).

S2 [014] Even in older humans with no neurodegenerative disorder, lower blood flow in the hippocampus is associated with poorer spatial memory (5).

Even ...

... in older humans ...

... with no neurodegenerative disorder, ...

... lower blood flow ...

... in the hippocampus is associated ...

... with poorer spatial memory ...

... (5).

S2 [015] Despite decades of data establishing clear links between CBF deficits and greater dementia risk and severity, the underlying mechanisms causing CBF deficits in AD or other dementias are only beginning to be revealed, as are the mechanisms by which vascular risk factors contribute to AD pathogenesis.

Despite decades ...

... of data establishing clear links ...

... between CBF deficits ...

... and greater dementia risk ...

... and severity, ...

... the underlying mechanisms causing CBF deficits ...

... in AD ...

... or other dementias are ...

... only beginning ...

... to be revealed, ...

... as are the mechanisms ...

... by which vascular risk factors contribute ...

... to AD pathogenesis.

S2 [016] We recently found that obstructions in cortical capillary segments occur more frequently in multiple mouse models of AD, as compared to wild type mice.

We recently found ...

... that obstructions ...

... in cortical capillary segments occur more frequently ...

... in multiple mouse models ...

... of AD, ...

... as compared ...

... to wild type mice.

S2 [017] We further found that administering an antibody against the neutrophil-specific cell surface protein lymphocyte antigen 6 complex (Ly6G) led to a ~60% decrease in the incidence of non-flowing capillaries and a ~20% increase in CBF, all within 10 minutes.

We further found ...

... that administering an antibody ...

... against the neutrophil-specific cell surface protein lymphocyte antigen 6 complex ...

... (Ly6G) ...

... led ...

End of Sample Audit

This is a truncated Manuscript Microscope Sample Audit.

To get the full audit of this text (or any other research paper),
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John.James@OxfordResearchServices.com
