A Manuscript Microscope 'Sentence Audit' of:

dCas9 targeted chromatin and histone enrichment for mass spectrometry (Catchet-MS) identifies IKZF1 as a novel drug-able target for HIV-1 latency reversal

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.
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Manuscript Source: https://www.biorxiv.org/content/10.1101/2021.03.19.436149v1

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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	Summary	7
Section: 2	INTRODUCTION	20
N/A	--- --- --- --- --- --- ---	0
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The Sentence Audit Of The Research Paper

Title # dCas9 targeted chromatin and histone enrichment for mass spectrometry (Catchet-MS) identifies IKZF1 as a novel drug-able target for HIV-1 latency reversal

S1 [001] Summary

S1 [002] A major pharmacological strategy toward HIV cure aims to reverse latency in infected cells as a first step leading to their elimination.

A major pharmacological strategy toward HIV cure aims ...
... to reverse latency ...
... in infected cells ...
... as a first step leading ...
... to their elimination.

S1 [003] While the unbiased identification of molecular targets physically associated with the latent HIV-1 provirus would be highly valuable to unravel the molecular correlates of HIV-1 transcriptional repression and latency reversal, due to technical limitations, this has not been possible.

While the unbiased identification ...
... of molecular targets physically associated ...
... with the latent HIV-1 provirus would be highly valuable ...
... to unravel the molecular correlates ...
... of HIV-1 transcriptional repression ...
... and latency reversal, ...
... due to technical limitations, ...
... this has not been possible.

S1 [004] Here we use dCas9 targeted chromatin and histone enrichment strategy coupled to mass spectrometry (Catchet-MS) to isolate the latent and activated HIV-1 5’LTR, followed by MS identification of the differentially locus-bound proteins.

Here we use dCas9 targeted chromatin ...
... and histone enrichment strategy coupled ...
... to mass spectrometry ...
... (Catchet-MS) ...
... to isolate the latent ...
... and activated HIV-1 5’LTR, ...
... followed by MS identification ...
... of the differentially locus-bound proteins.

S1 [005] Catchet-MS identified known and novel latent 5’LTR-associated host factors.

Catchet-MS identified known ...
... and novel latent 5’LTR-associated host factors.

S1 [006] Among these, IKZF1 is a novel HIV-1 transcriptional repressor, required for Polycomb Repressive Complex 2 recruitment to the LTR.

Among these, ...
... IKZF1 is a novel HIV-1 transcriptional repressor, ...
... required ...
... for Polycomb Repressive Complex 2 recruitment ...
... to the LTR.

S1 [007] We find the drug iberdomide, which targets IKZF1 for degradation, to be a clinically advanced novel LRA that reverses HIV-1 latency in CD4+T-cells isolated from virally suppressed HIV-1 infected participants.

We find the drug iberdomide, ...
... which targets IKZF1 ...
... for degradation, ...
... to be a clinically advanced novel LRA ...
... that reverses HIV-1 latency ...
... in CD4+T-cells isolated ...
... from virally suppressed HIV-1 infected participants.

S2 [008] INTRODUCTION

S2 [009] Combination antiretroviral therapy (cART) effectively halts HIV replication and has significantly reduced AIDS-associated mortality.

Combination antiretroviral therapy ...
... (cART) ...
... effectively halts HIV replication ...
... and has significantly reduced AIDS-associated mortality.

S2 [010] However, cART is not curative, it has side-effects, and apart from the costs of lifelong therapy, the global roll-out of cART, particularly in resource-limited countries, remains an ongoing challenge (UNAIDS fact sheet 2019).

However, ...
... cART is not curative, ...
... it has side-effects, ...
... and apart ...
... from the costs ...
... of lifelong therapy, ...
... the global roll-out ...
... of cART, ...
... particularly ...
... in resource-limited countries, ...
... remains an ongoing challenge ...
... (UNAIDS fact sheet 2019).

S2 [011] HIV persists because subsequent to stable integration into the CD4+ T cell host genome, the provirus can remain in a nonproductive latent state, defined by the absence of HIV-1 gene expression.

HIV persists ...
... because subsequent ...
... to stable integration ...
... into the CD4+ T cell host genome, ...
... the provirus can remain ...
... in a nonproductive latent state, ...
... defined ...
... by the absence ...
... of HIV-1 gene expression.

S2 [012] Because of this reservoir of latently HIV-1 infected cells, interruption of cART leads to a rapid rebound of unrestricted viral replication, necessitating life-long treatment (Siliciano and Siliciano, 2015).

Because ...
... of this reservoir ...
... of latently HIV-1 infected cells, ...
... interruption ...
... of cART leads ...
... to a rapid rebound ...
... of unrestricted viral replication, ...
... necessitating life-long treatment ...
... (Siliciano ...
... and Siliciano, 2015).

S2 [013] Therapeutic strategies for HIV cure aim to eliminate, inactivate, or reduce the pool of latently infected cells such that the patient’s immune system can control viral replication upon cessation of cART.

Therapeutic strategies ...
... for HIV cure aim ...
... to eliminate, ...
... inactivate, ...
... or reduce the pool ...
... of latently infected cells ...
... such that the patient’s immune system can control viral replication ...
... upon cessation ...
... of cART.

S2 [014] As quiescent memory CD4+ T cells, which constitute the main cellular reservoir of latent HIV infected cells, have a long half-life (Siliciano et al., 2003), pharmacological approaches aim to speed up the decay rate of this infected reservoir.

As quiescent memory CD4+ T cells, ...
... which constitute the main cellular reservoir ...
... of latent HIV infected cells, ...
... have a long half-life ...
... (Siliciano et al., 2003), ...
... pharmacological approaches aim ...
... to speed up the decay rate ...

... of this infected reservoir.

S2 [015] One such strategy is to induce viral expression in latently infected cells using latency reversal agents (LRAs) to increase the viral transcriptional output and viral protein production, rendering the infected cell recognizable to the immune system or susceptible to viral cytopathic effects for elimination.

One ...
... such strategy is ...
... to induce viral expression ...
... in latently infected cells ...
... using latency reversal agents ...
... (LRAs) ...
... to increase the viral transcriptional output ...
... and viral protein production, ...
... rendering the infected cell recognizable ...
... to the immune system ...
... or susceptible ...
... to viral cytopathic effects ...
... for elimination.

S2 [016] At the molecular level, the expression of the HIV-1 genome is determined by the activity of the HIV-1 promoter or 5'LTR, which is controlled by the LTR chromatin landscape (Rafati et al., 2011), the engagement of sequence-specific host transcription factors (TFs) and associated cofactors (Ne et al., 2018; Pereira et al., 2000), the recruitment of RNA polymerase II (Pol II) and its efficient transcriptional elongation (Mousseau and Valente, 2017; Ott et al., 2011).

At the molecular level, ...
... the expression ...
... of the HIV-1 genome is determined ...
... by the activity ...
... of the HIV-1 promoter ...
... or 5'LTR, ...
... which is controlled ...
... by the LTR chromatin landscape ...
... (Rafati et al., 2011), ...
... the engagement ...
... of sequence-specific host transcription factors ...
... (TFs) ...
... and associated cofactors ...
... (Ne et al., 2018; ...
... Pereira et al., 2000), ...
... the recruitment ...
... of RNA polymerase II ...
... (Pol II) ...
... and its efficient transcriptional elongation ...
... (Mousseau ...
... and Valente, 2017; ...
... Ott et al., 2011).

End of Sample Audit

This is a truncated Manuscript Microscope Sample Audit.

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