UNC-45A is Highly Expressed in the Proliferative Cells of the Mouse Genital Tract and in the Microtubule-Rich Areas of the Mouse Nervous System

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Manuscript Source: https://www.biorxiv.org/content/10.1101/2021.03.19.436218v1

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Research Paper Sections:

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

Section No.	Headings	Sentences
Section: 1	Abstract	6
Section: 2	Introduction	12
N/A		0

UNC-45A is Highly Expressed in the Proliferative Cells of the Mouse Genital Tract and in the Microtubule-Rich Areas of the Mouse Nervous System

S1 [001] Abstract

S1 [002] UNC-45A is a cytoskeletal-associated protein with a dual and non-mutually exclusive role as a regulator of the acto-myosin system and as a Microtubule (MT)-destabilizing protein.

UNC-45A is a cytoskeletal-associated protein ...
... with a dual ...
... and non-mutually exclusive role ...
... as a regulator ...
... of the acto-myosin system ...
... and as a Microtubule ...

S1 [003] UNC-45A is overexpressed in human cancers including in ovarian cancer patients resistant to the MT-stabilizing drug Paclitaxel.

UNC-45A is overexpressed ...
... in human cancers including ...
... in ovarian cancer patients resistant ...
... to the MT-stabilizing drug Paclitaxel.

... (MT)-destabilizing protein.

S1 [004] Mapping of UNC-45A in the mouse upper genital tract and central nervous system reveals its enrichment in highly proliferating and prone to remodeling cells and in microtubule-rich areas of in the ovaries and in neurons respectively.

Mapping ...
... of UNC-45A ...
... in the mouse upper genital tract ...
... and central nervous system reveals its enrichment ...
... in highly proliferating ...
... and prone ...
... to remodeling cells ...
... and in microtubule-rich areas ...
... of ...
... in the ovaries ...
... and in neurons respectively.

S1 [005] In both apparatuses UNC-45A is also abundantly expressed in the ciliated epithelium.

In both apparatuses UNC-45A is also abundantly expressed \dots

... in the ciliated epithelium.

S1 [006] Because regulators of acto-myosin contractility and MT stability are essential for the physiopathology of the female reproductive tract and of neuronal development our findings suggest that UNC-45A may have a role in ovarian cancer initiation and development and in neurodegeneration.

```
Because regulators ...
... of acto-myosin contractility ...
... and MT stability are essential ...
... for the physiopathology ...
... of the female reproductive tract ...
... and ...
... of neuronal development our findings suggest ...
... that UNC-45A ...
... may have a role ...
... in ovarian cancer initiation ...
... and development ...
... and in neurodegeneration.
```

S2 [007] Introduction

S2 [008] UNC-45A is a member of the UCS (UNC-45/CRO1/She4p) protein family (1, 2) with a dual and non-mutually exclusive role as a regulator of the acto-myosin system (3, 4) and as a MT-destabilizing protein (5–7).

```
UNC-45A is a member ...
... of the UCS ...
... (UNC-45/CRO1/She4p) ...
... protein family ...
... (1, 2)...
... ...
... with a dual ...
... and non-mutually exclusive role ...
... as a regulator ...
... of the acto-myosin system ...
... (3, 4)...
... ...
... and as a MT-destabilizing protein ...
... (5–7).
```

S2 [009] As a key regulator of cytoskeletal activities UNC-45A participates in a number of cellular functions including cytokinesis (8–10), exocytosis (11), and axonal growth (12).

```
As a key regulator ...
... of cytoskeletal activities UNC-45A participates ...
... in a number ...
... of cellular functions including cytokinesis ...
... (8–10), ...
... exocytosis ...
... (11), ...
... and axonal growth ...
... (12).
```

S2 [010] UNC-45A is overexpressed in breast and ovarian cancer as compared to their normal counterpart (8–10) and in ovarian cancer patients that are resistant to the microtubule (MT)-stabilizing drug paclitaxel in ovarian cancer (6).

UNC-45A is overexpressed ...
... in breast ...
... and ovarian cancer ...
... as compared ...
... to their normal counterpart ...
... (8–10) ...
... and in ovarian cancer patients ...
... that are resistant ...
... to the microtubule ...
... (MT)-stabilizing drug paclitaxel ...
... in ovarian cancer ...
... (6).

S2 [011] Regulators of acto-myosin contractility and MT stability are essential for both ovarian cancer cells proliferation and neuronal development.

Regulators ...
... of acto-myosin contractility ...
... and MT stability are essential ...
... for both ovarian cancer cells proliferation ...
... and neuronal development.

S2 [012] For instance, dysregulation of the Rho/ROCK signaling pathway is commonly found in ovarian cancer (13–16) and implicated in the pathophysiology of nervous system (17, 18) (19, 20) (21) (22).

For instance, ...
... dysregulation ...
... of the Rho/ROCK signaling pathway is commonly found ...
... in ovarian cancer ...
... (13–16) ...
... and implicated ...
... in the pathophysiology ...
... of nervous system ...
... (17, 18)...
... ...
... (19, 20)...
... ...
... (21) ...
... (22).

S2 [013] A number of MT-destabilizing proteins are also expressed in both neurons (23–27) and cancer cells including ovarian cancer cells (28–30) where they play roles spanning from regulating symmetrical and asymmetrical cell division (31) to regulate MT mass (6) to regulate sensitivity to MT-targeting agents (6, 32).

A number ...
... of MT-destabilizing proteins are also expressed ...
... in both neurons ...

```
... (23–27) ...
... and cancer cells including ovarian cancer cells ...
... (28–30) ...
... where they play roles spanning ...
... from regulating symmetrical ...
... and asymmetrical cell division ...
... (31) ...
... to regulate MT mass ...
... (6) ...
... to regulate sensitivity ...
... to MT-targeting agents ...
... (6, 32)...
```

S2 [014] In this study we investigated the UNC-45A expression pattern in the mouse upper genital tract and in the brain.

```
In this study we investigated the UNC-45A expression pattern ... ... in the mouse upper genital tract ... ... and in the brain.
```

S2 [015] In the ovaries and fallopian tube, we found that UNC-45A is enriched in highly proliferating and prone to remodeling cells.

```
In the ovaries ...
... and fallopian tube, ...
... we found ...
... that UNC-45A is enriched ...
... in highly proliferating ...
... and prone ...
... to remodeling cells.
```

S2 [016] In the brain we found that UNC-45A is expressed in the microtubule-rich regions of the mouse central nervous system and in the mouse nerve roots.

```
In the brain we found ...
... that UNC-45A is expressed ...
... in the microtubule-rich regions ...
... of the mouse central nervous system ...
... and in the mouse nerve roots.
```

S2 [017] We also found that UNC-45A is abundantly expressed in the cilia of cells in both the upper genital tract and the brain.

```
We also found ...
... that UNC-45A is abundantly expressed ...
... in the cilia ...
... of cells ...
... in both the upper genital tract ...
... and the brain.
```

S2 [018] Taken together these findings suggest that UNC-45A may play a role in the physiology and pathology of the female reproductive apparatus and of the central nervous system.

End of Sample Audit

This is a truncated Manuscript Microscope Sample Audit.

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