

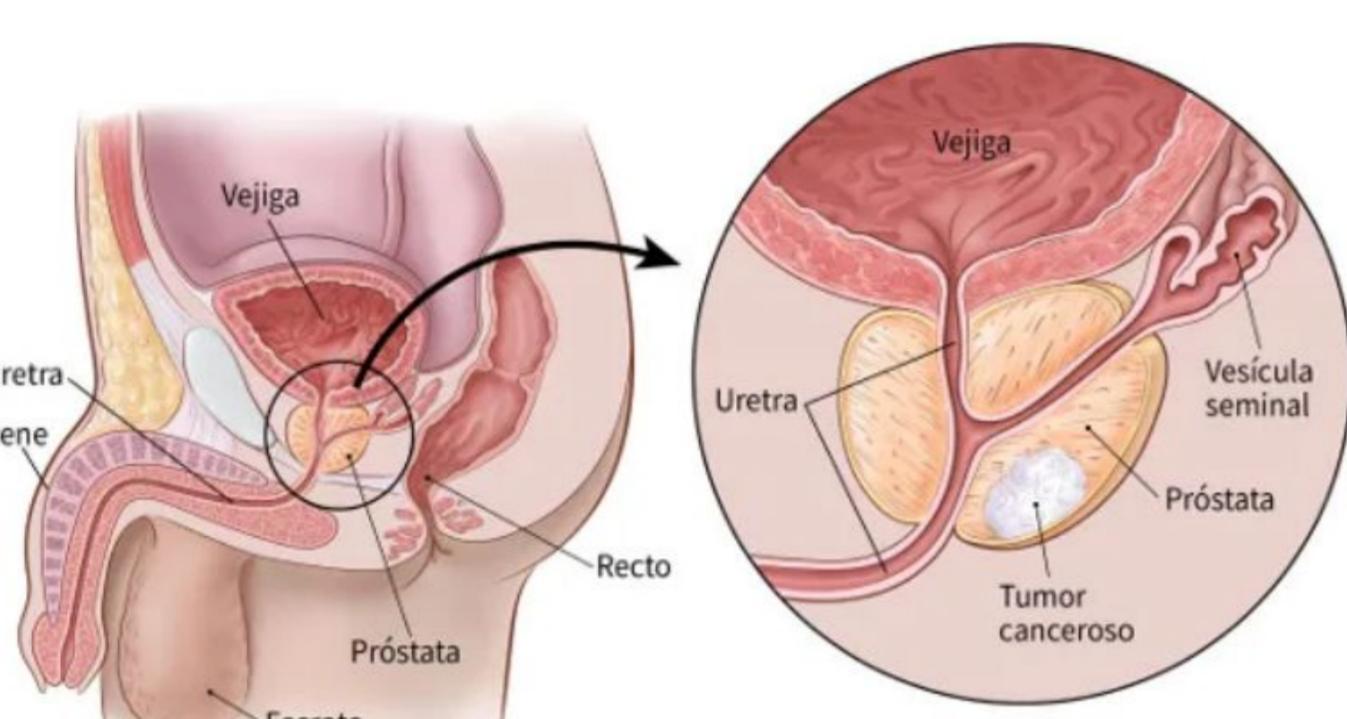
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IV INTERNATIONAL SCIENTIFIC CONGRESS "YOUNG EUROSCIENCE"

INVOLVEMENT OF RNA-EXOSOME MACHINERY IN THE PATHOPHYSIOLOGY OF PROSTATE CANCER

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INTRODUCTION



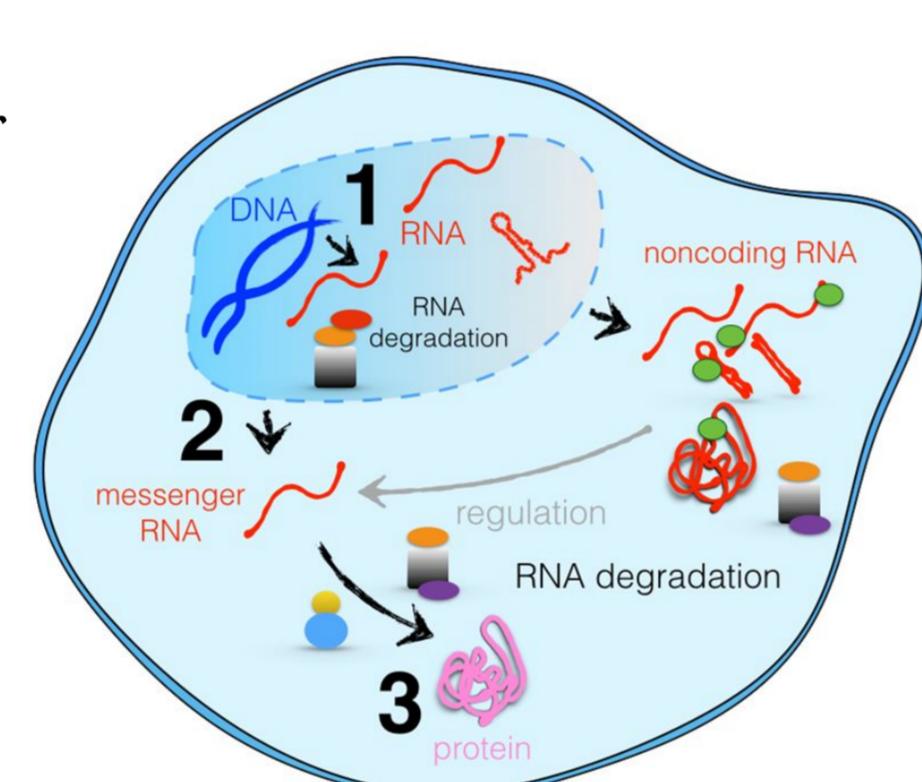
PROSTATE CANCER

Prostate cancer occurs when some cells in this gland begin to grow uncontrollably.

- Stage I: Localized to one part of the prostate.
- Stage II: More advanced but still localized.
- Stage III: It has spread outside the prostate to nearby tissues.
- Stage IV: It has spread to distant organs such as bones, lungs, etc.

The RNA-Exosome Machinery:

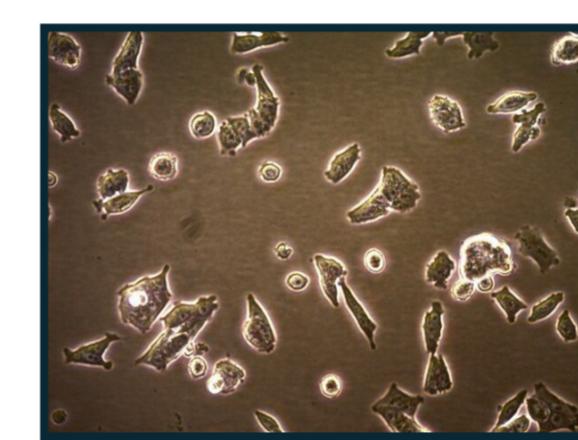
The exosome RNA machine is like a "garbage disposal" for RNA. When the cell detects that an RNA is not working properly or is no longer needed, the exosome breaks it down and eliminates it.



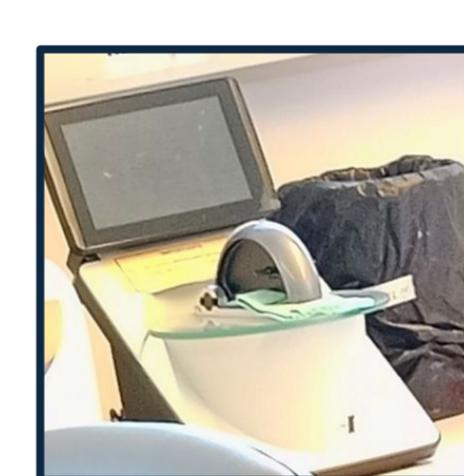
Study Objective: To study the relationship between the expression of a gene from the exosome RNA machine and prostate cancer.

MATERIALS AND METHODS

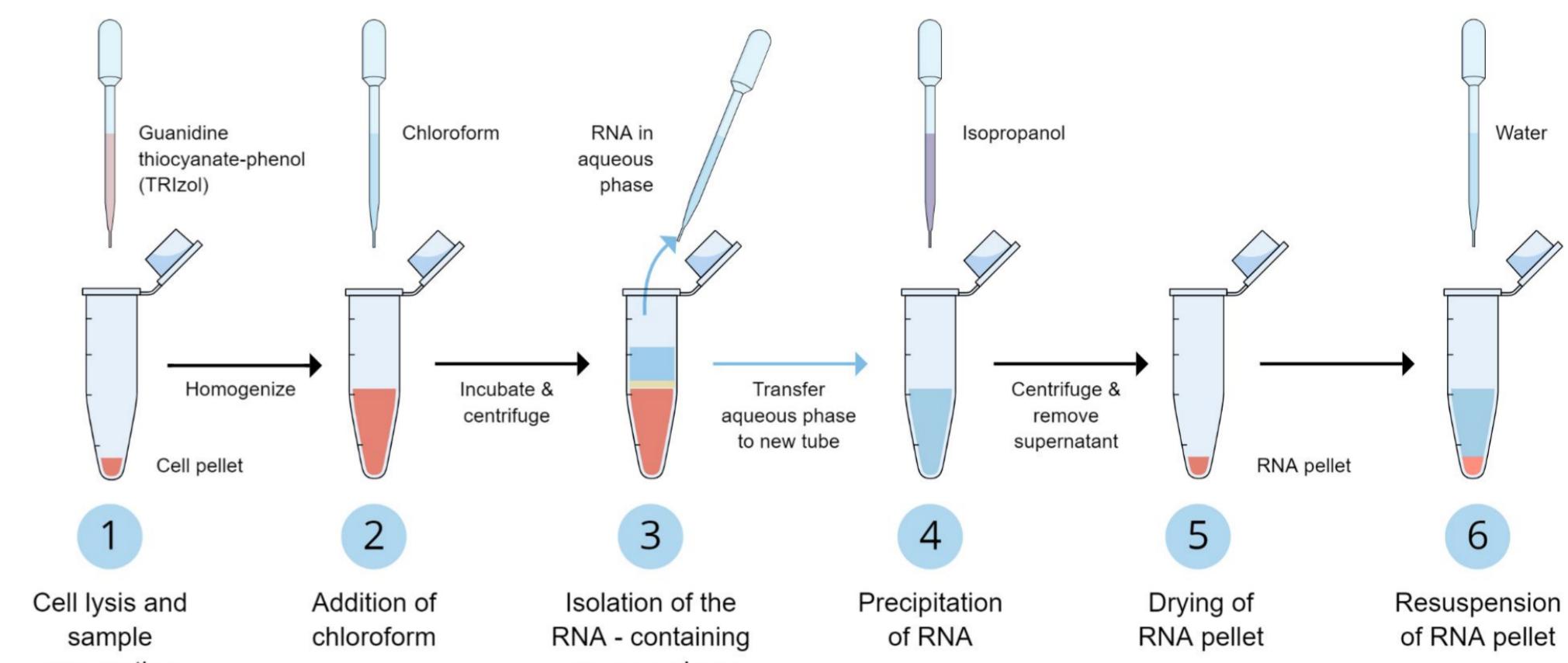
Healthy prostate and tumor cells



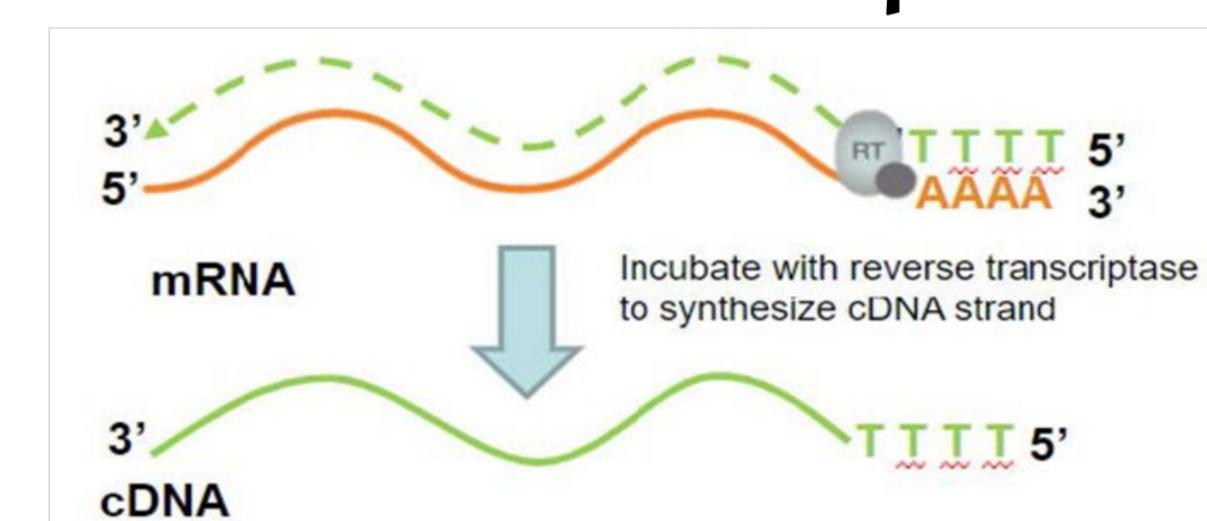
Nanodrop (RNA concentration and quality)



Extraction of RNA



Reverse transcription



qPCR

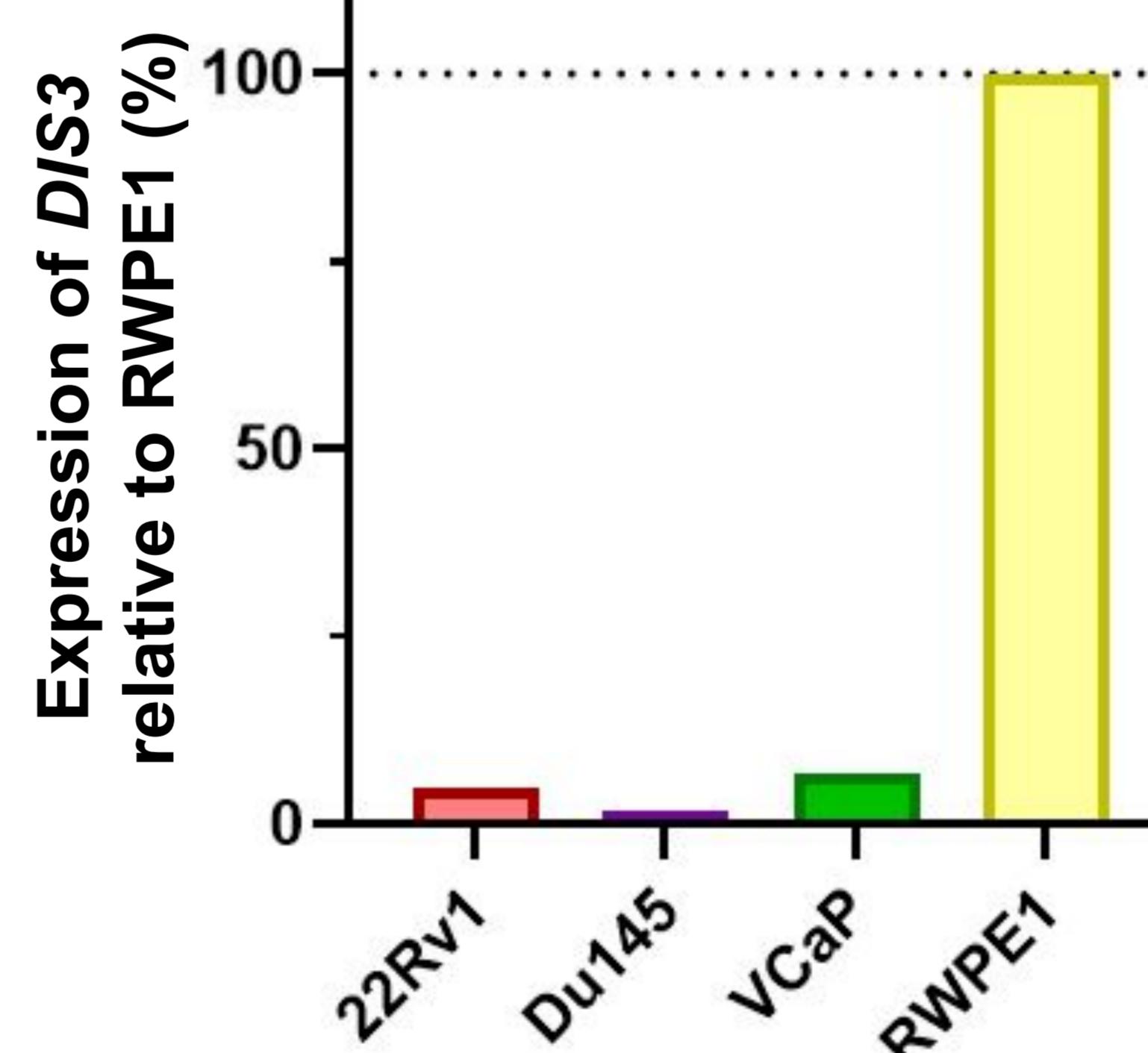


RESULTS

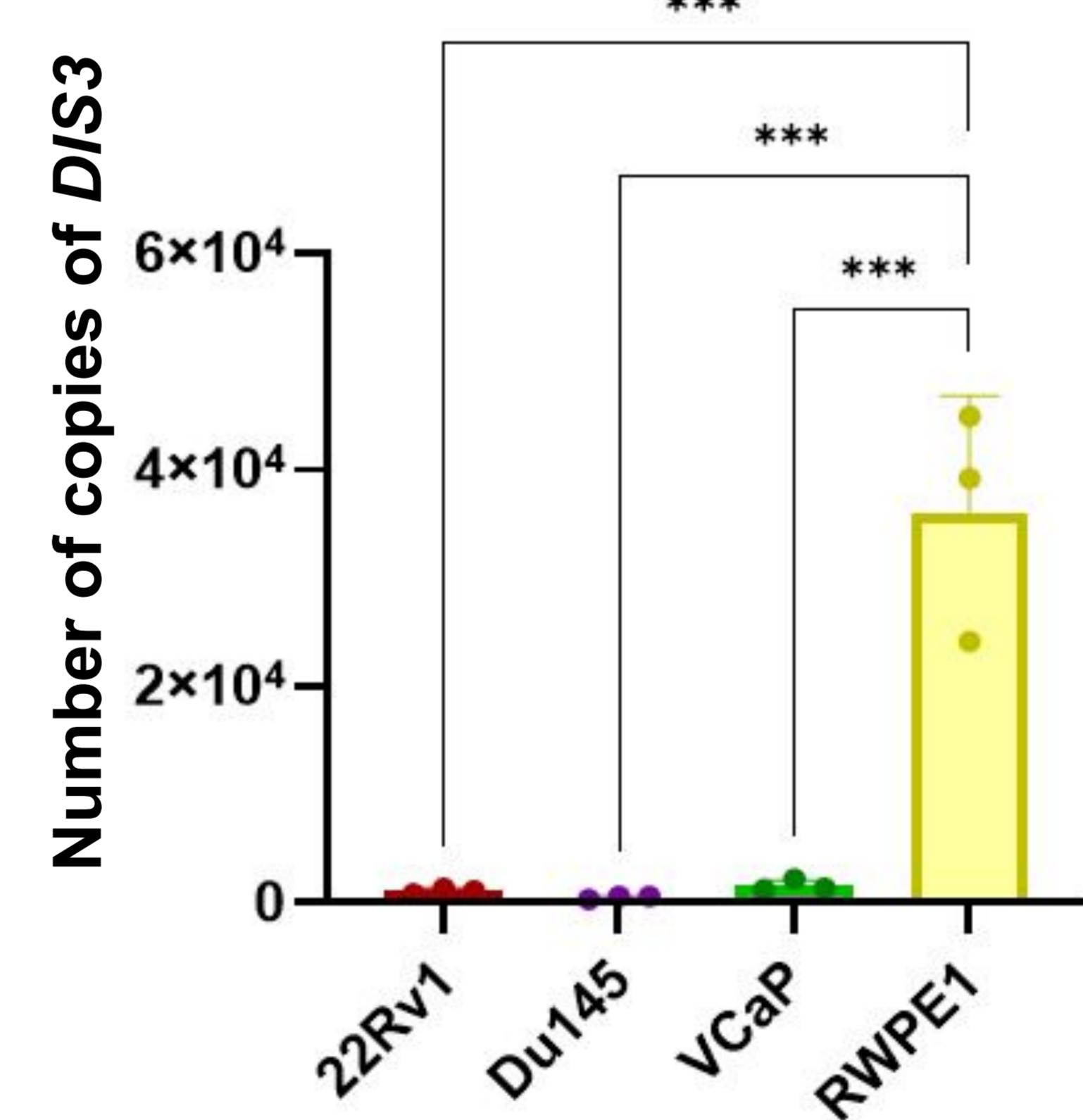
RNA quantification

Type	RNA (ng/µL)	A260/A280	A260/A230
VCaP n1	217.2	2.11	1.97
VCaP n2	125.9	2.09	1.47
VCaP n3	121.5	2.09	1.45
RWPE-1 n1	162.7	2.13	1.98
RWPE-1 n2	134.7	2.12	1.98
RWPE-1 n3	166.9	2.12	1.94
22Rv1 n1	338.9	2.14	1.81
22Rv1 n2	259.8	2.14	2.06
22Rv1 n3	1119.9	2.13	2.09
Du145 n1	819.5	2.14	2.14
Du145 n2	515.1	2.12	1.84
Du145 n3	468.0	2.10	1.90

Screening for the expression of DIS3



These values show the representation of the relative expression of the DIS3 gene in different cell lines (22Rv1, Du145, VCaP), with RWPE1 as reference (100%).



This graph shows the expression of the DIS3 gene. DIS3 is highly expressed in RWPE 1 (up to 44951 copies in n3). In VCaP, Du145 and 22Rv1, the number of copies is much lower (e.g. Du145 has only 390 copies in n3, i.e. more than 100 times less than in RWPE 1). In other words, their expression is lower.

CONCLUSIONS

DIS3 is consistently and significantly down-regulated in prostate cancer lines (22Rv1, DU145, VCaP) compared to healthy prostate lines (RWPE1).