

Overview of the HIV Life Cycle

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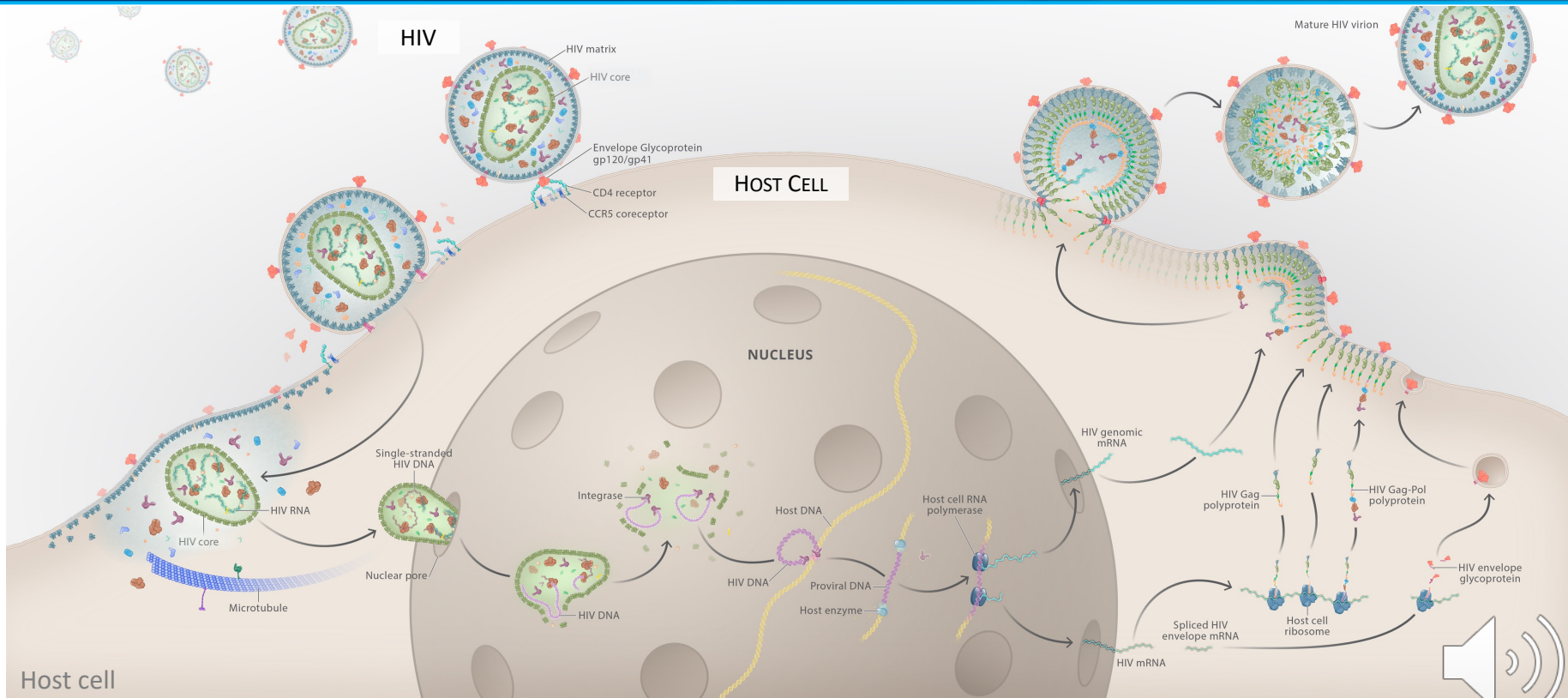
Last Updated: November 22, 2022

Disclosures

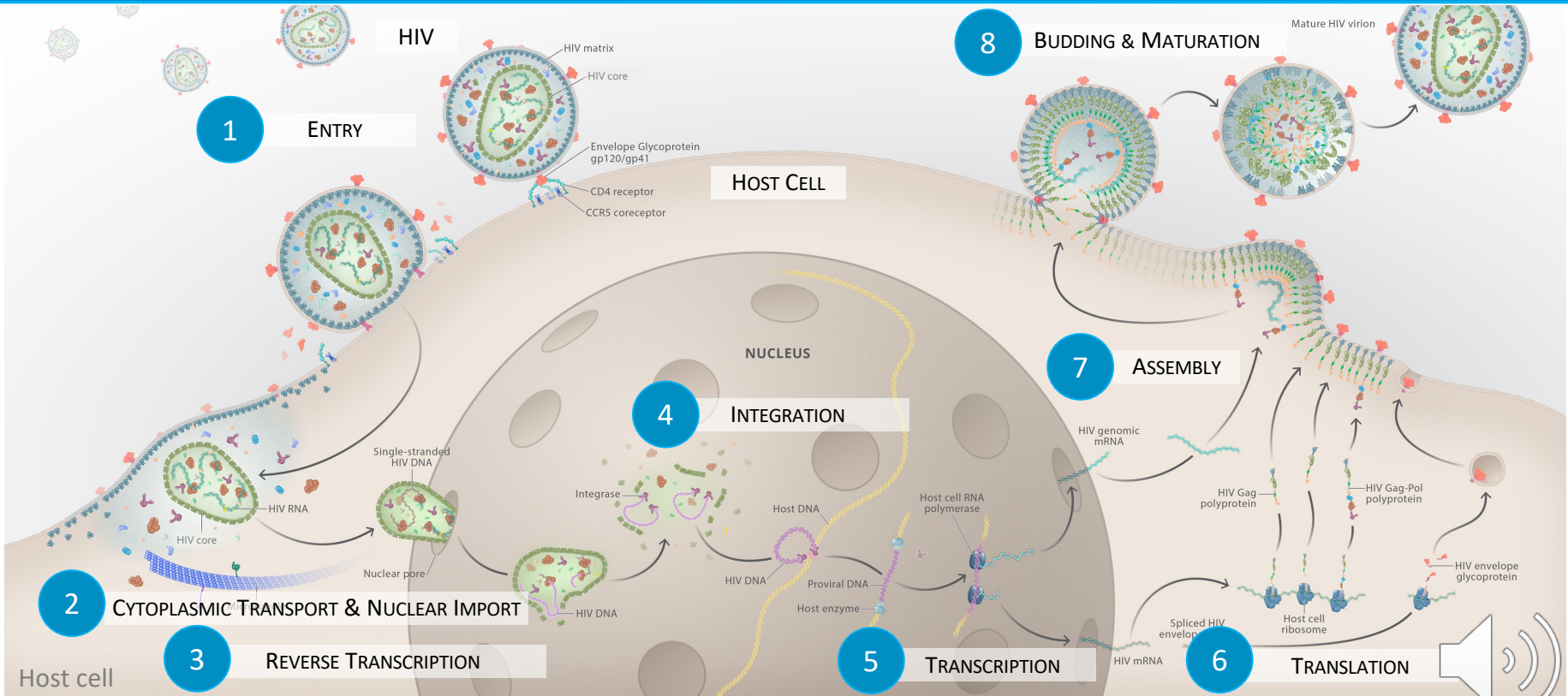
Dr. Spach does not have any disclosures.



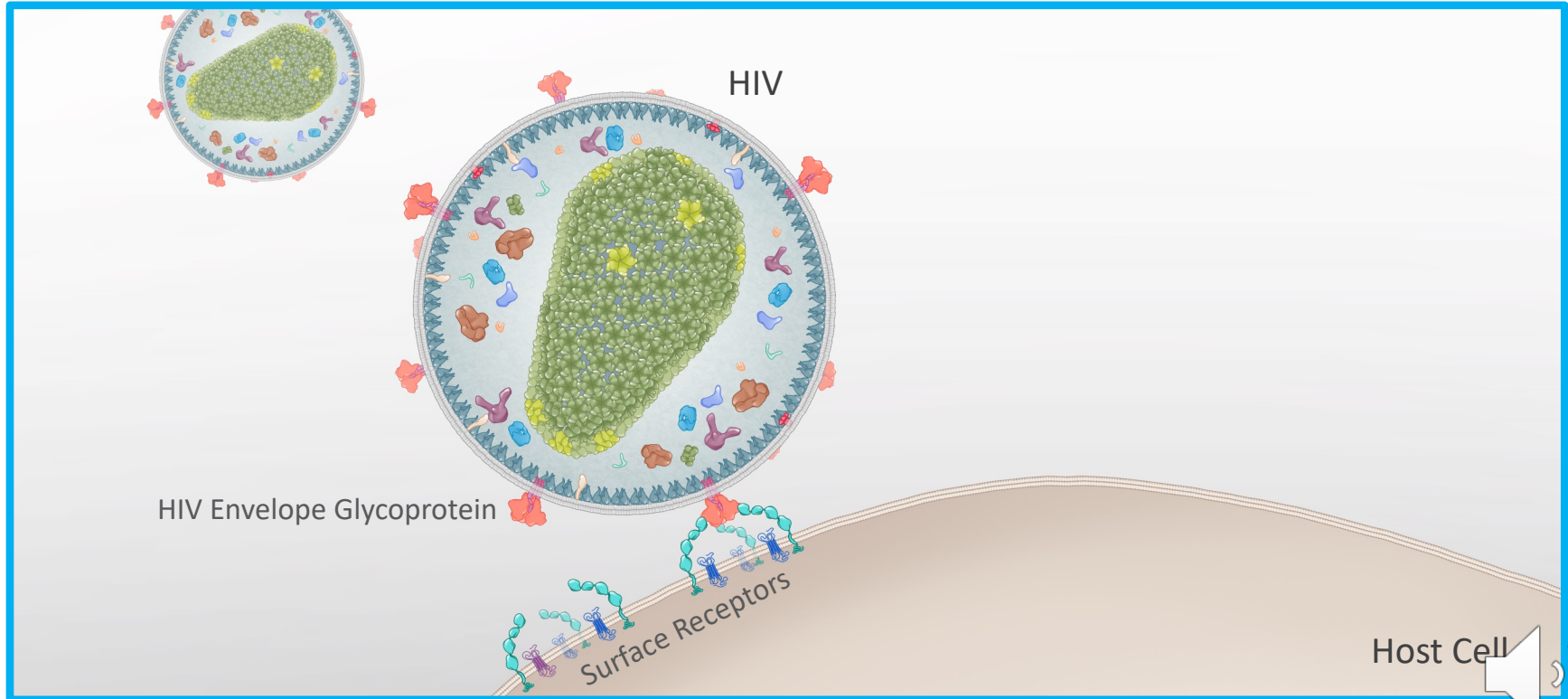
HIV Life Cycle



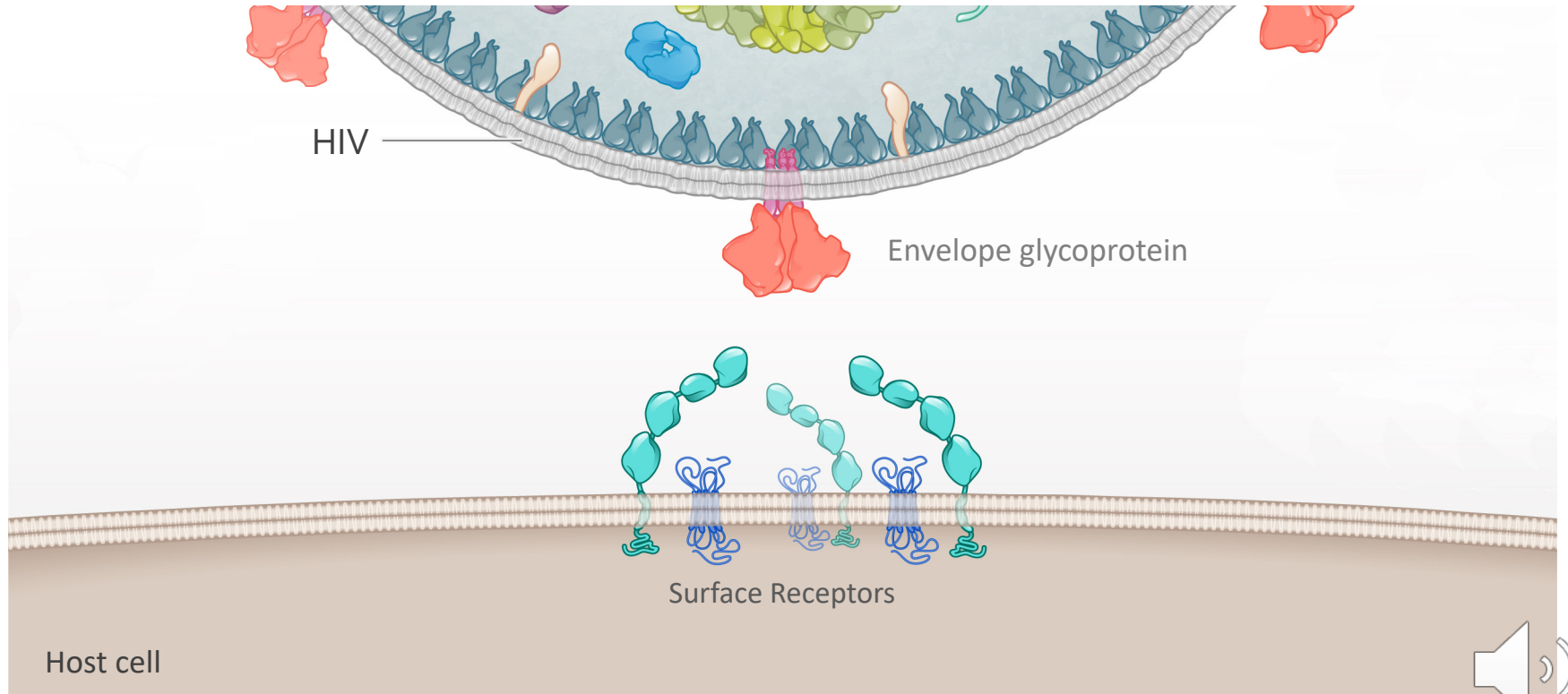
HIV Life Cycle



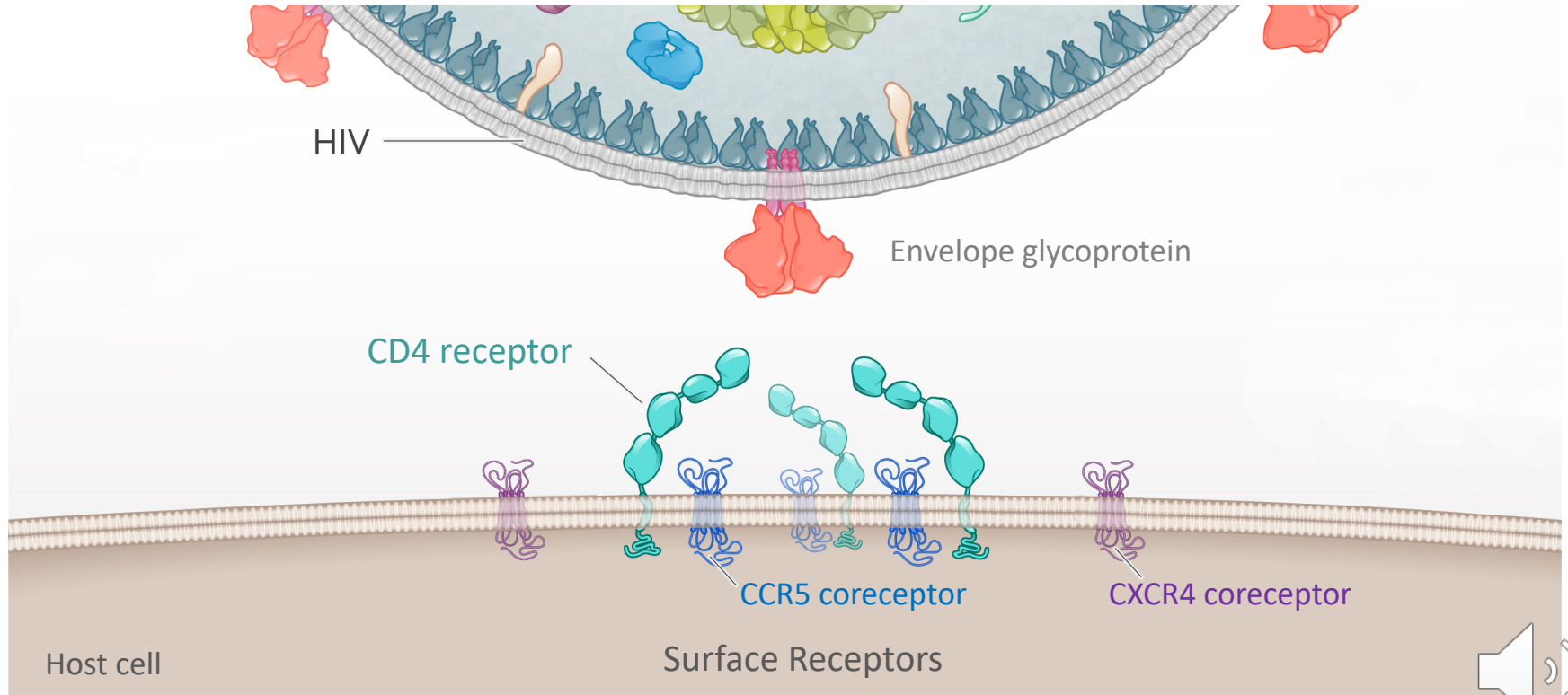
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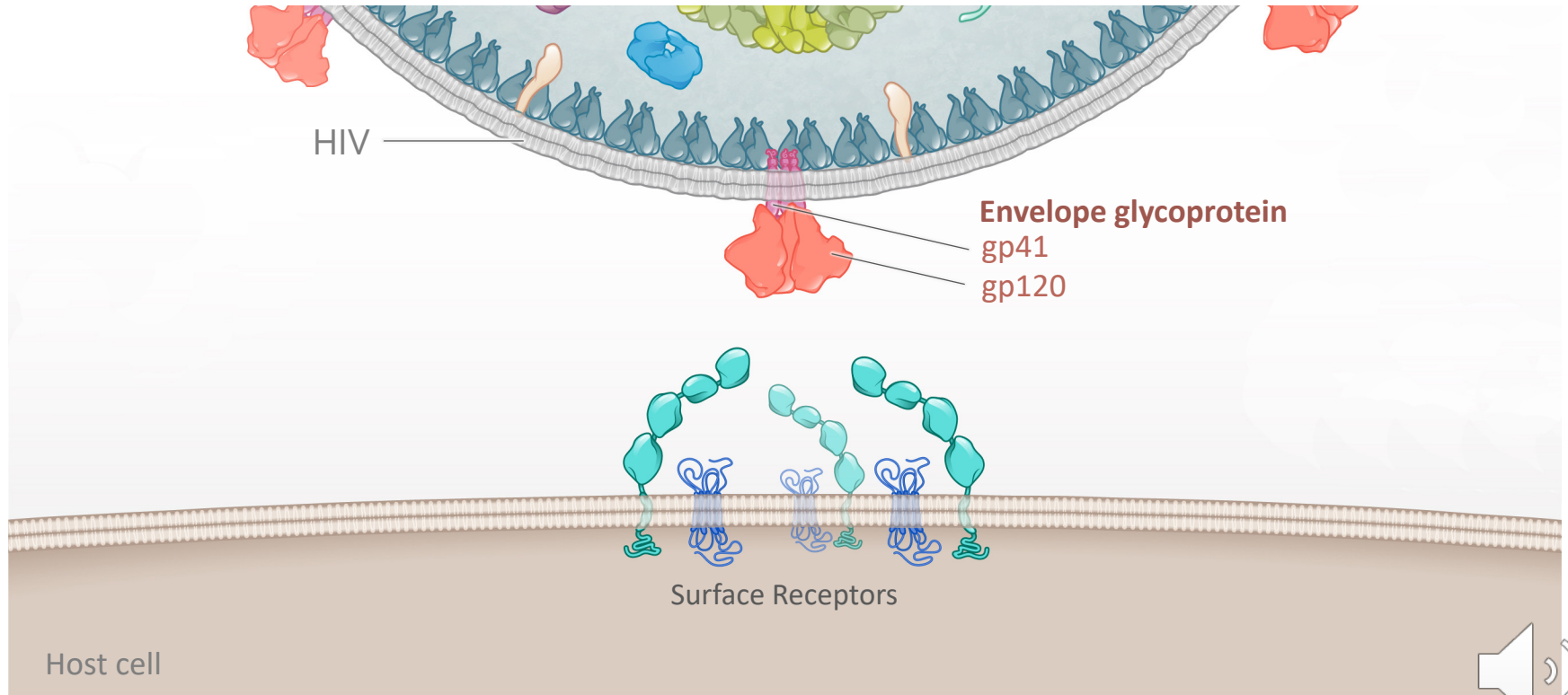
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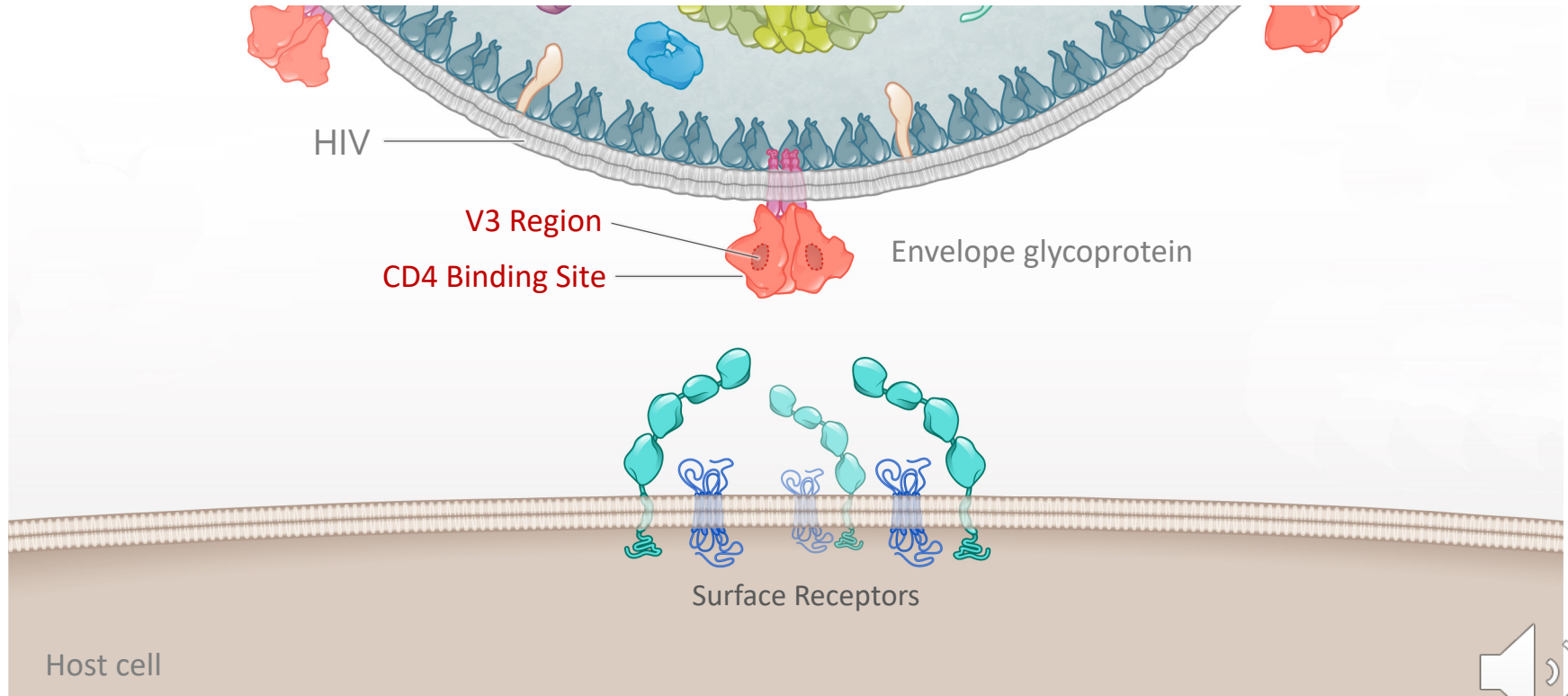
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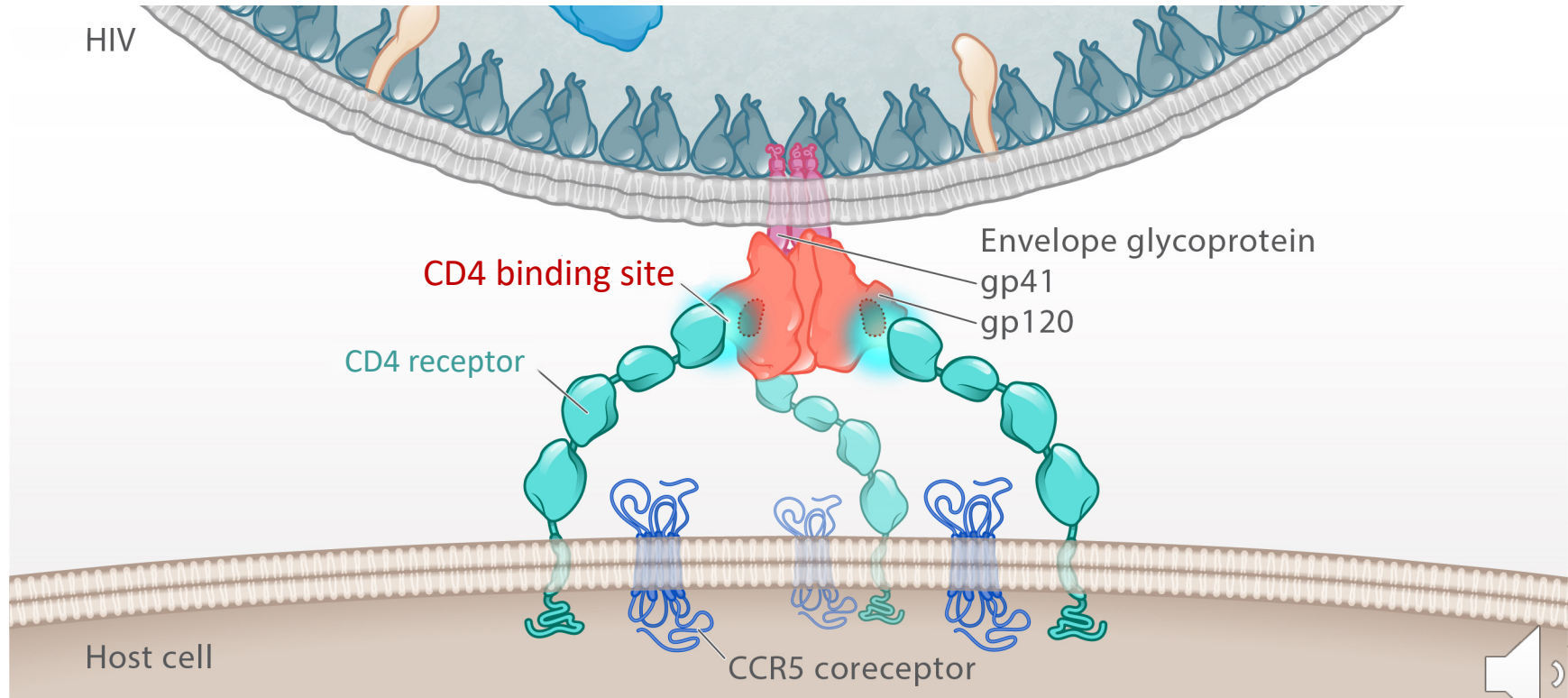
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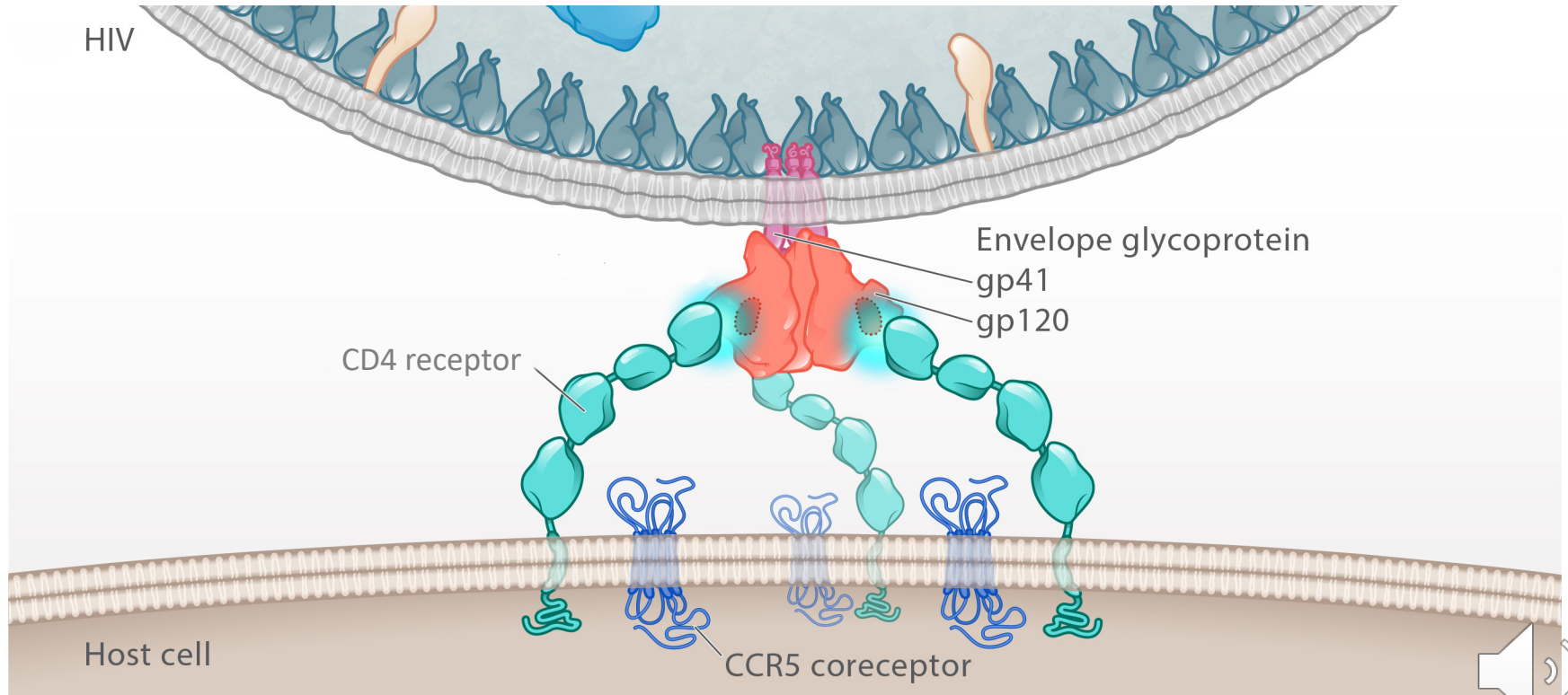
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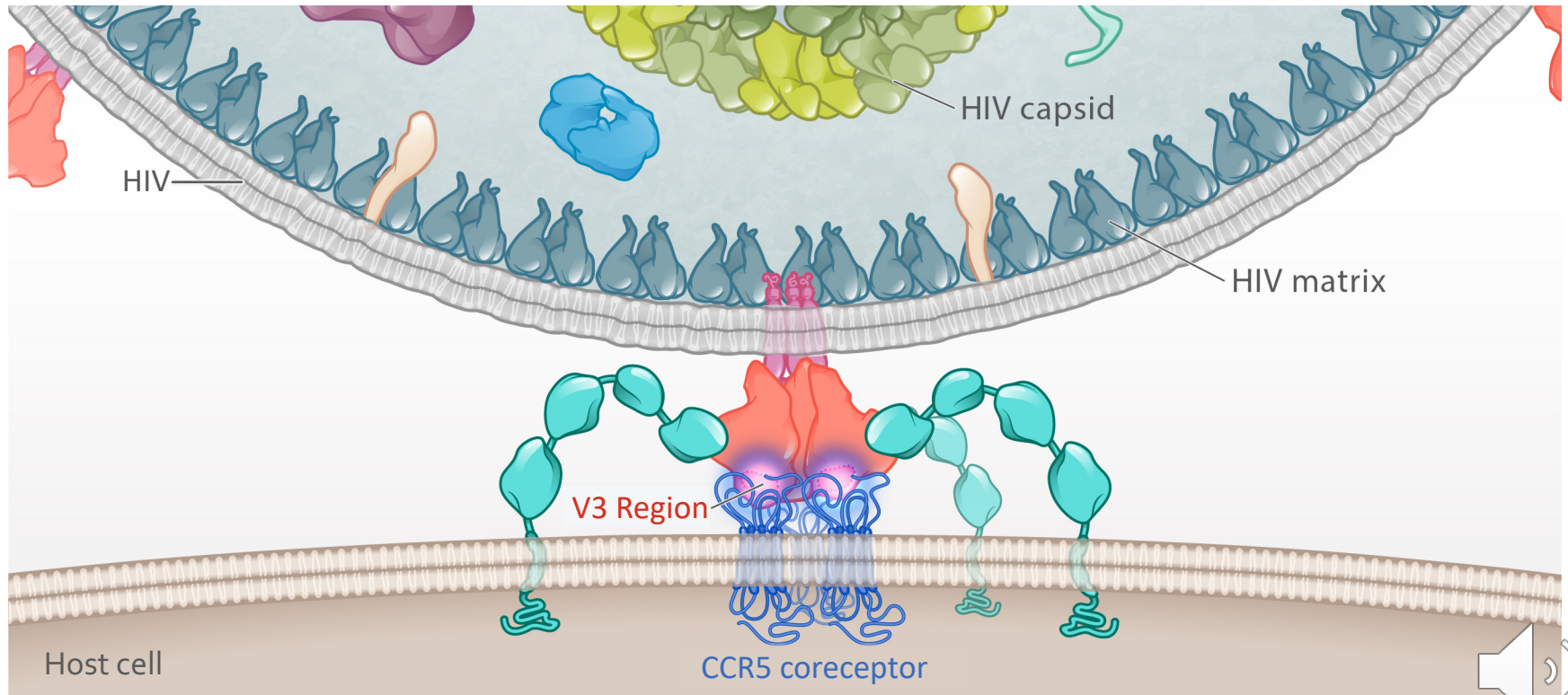
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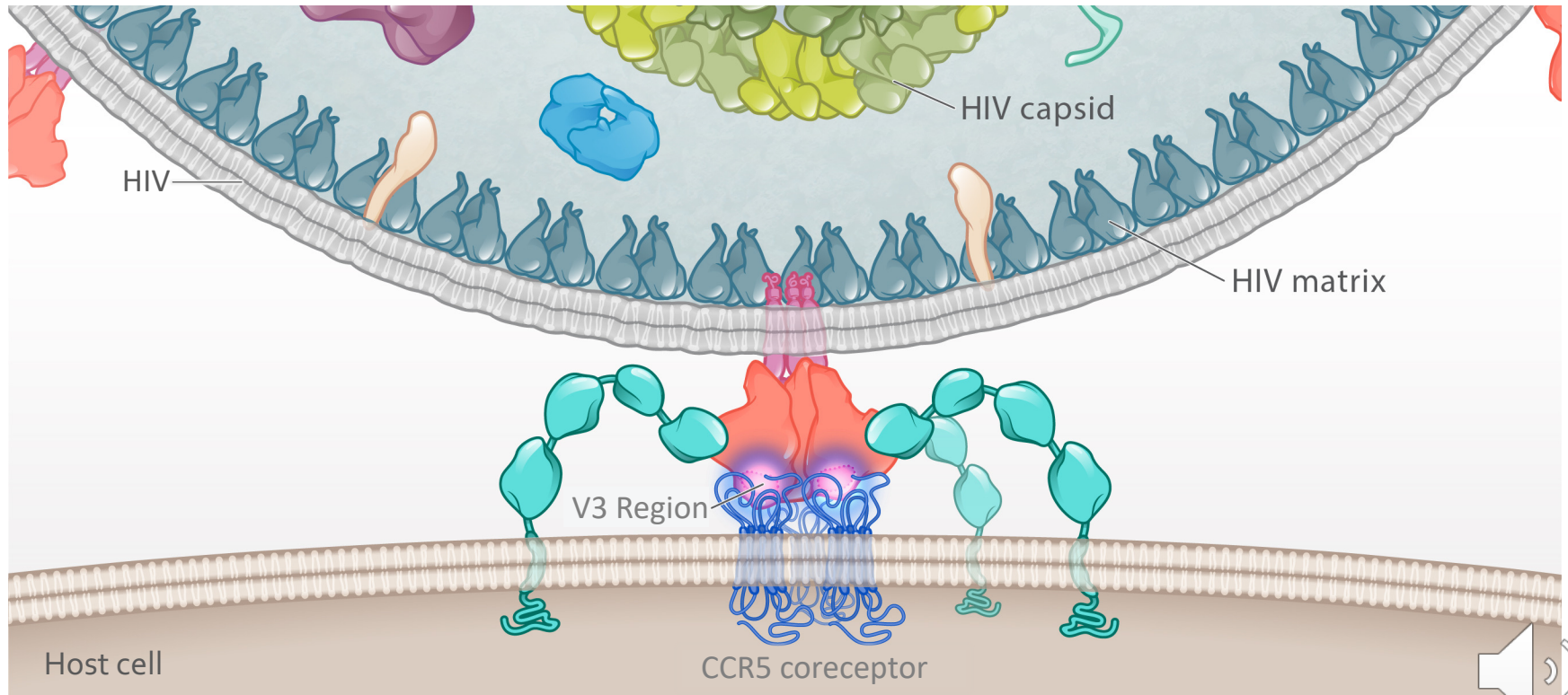
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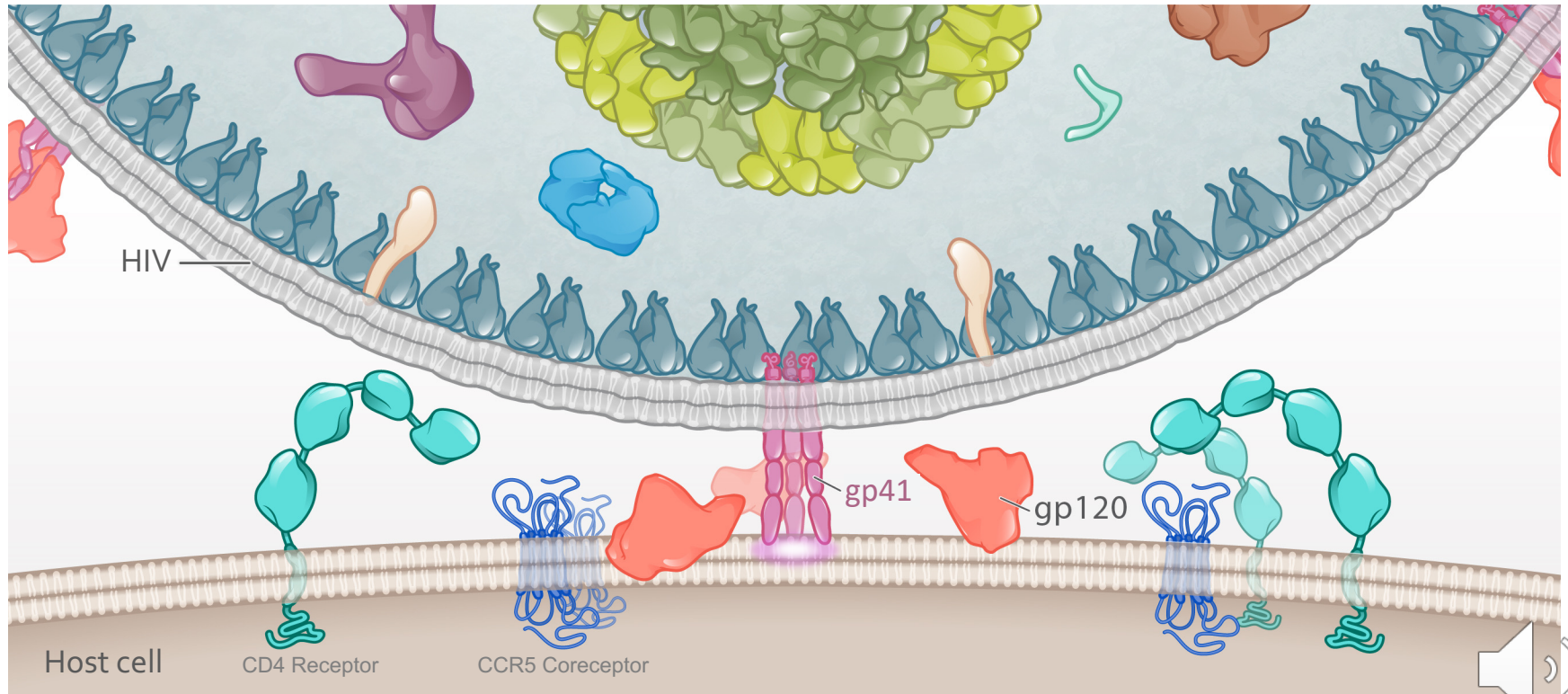
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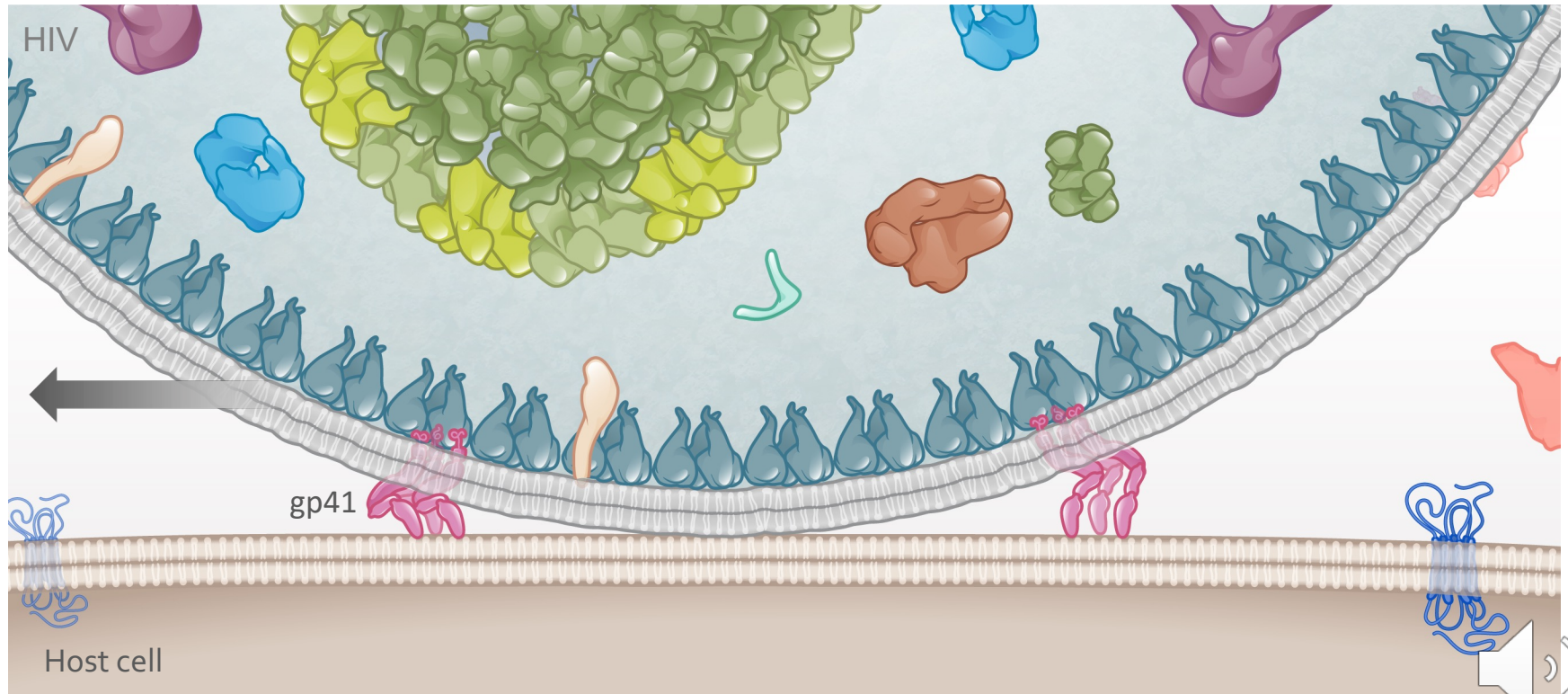
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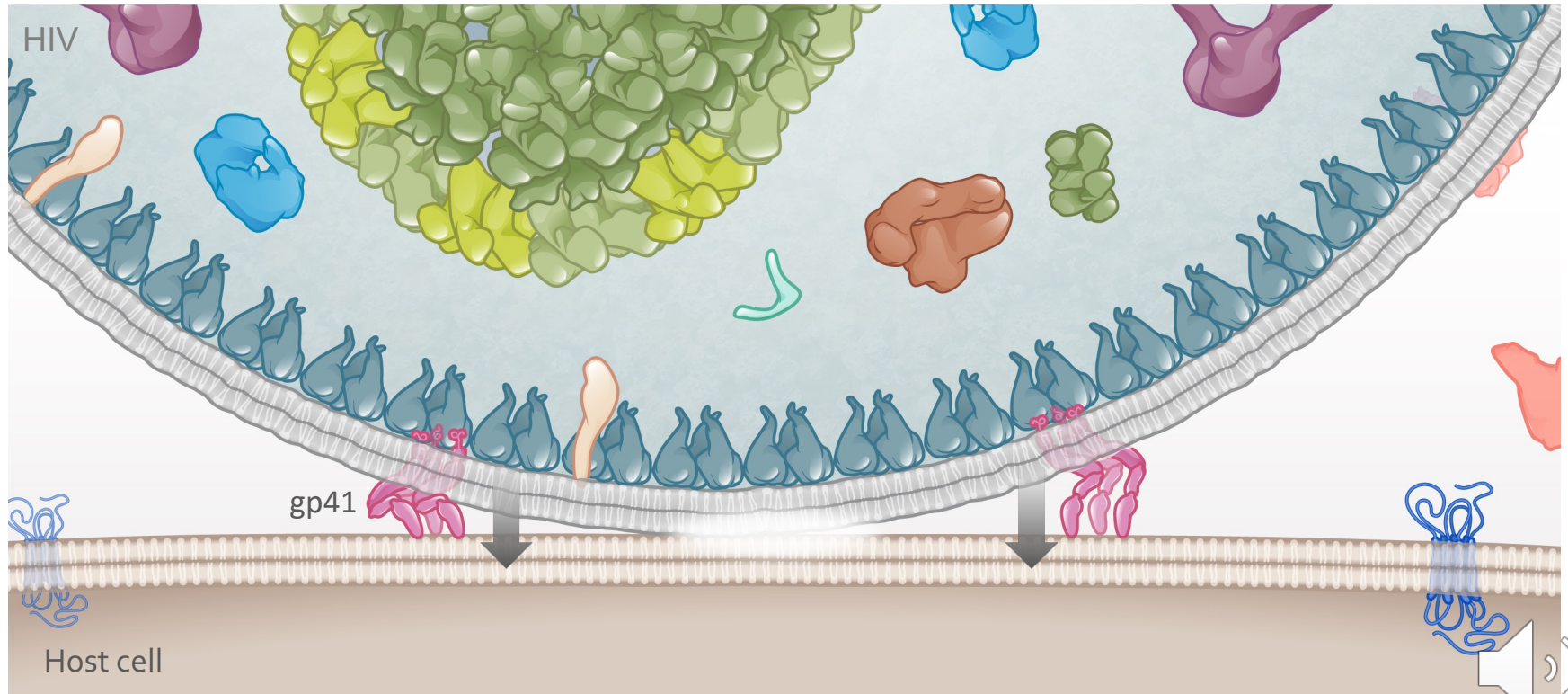
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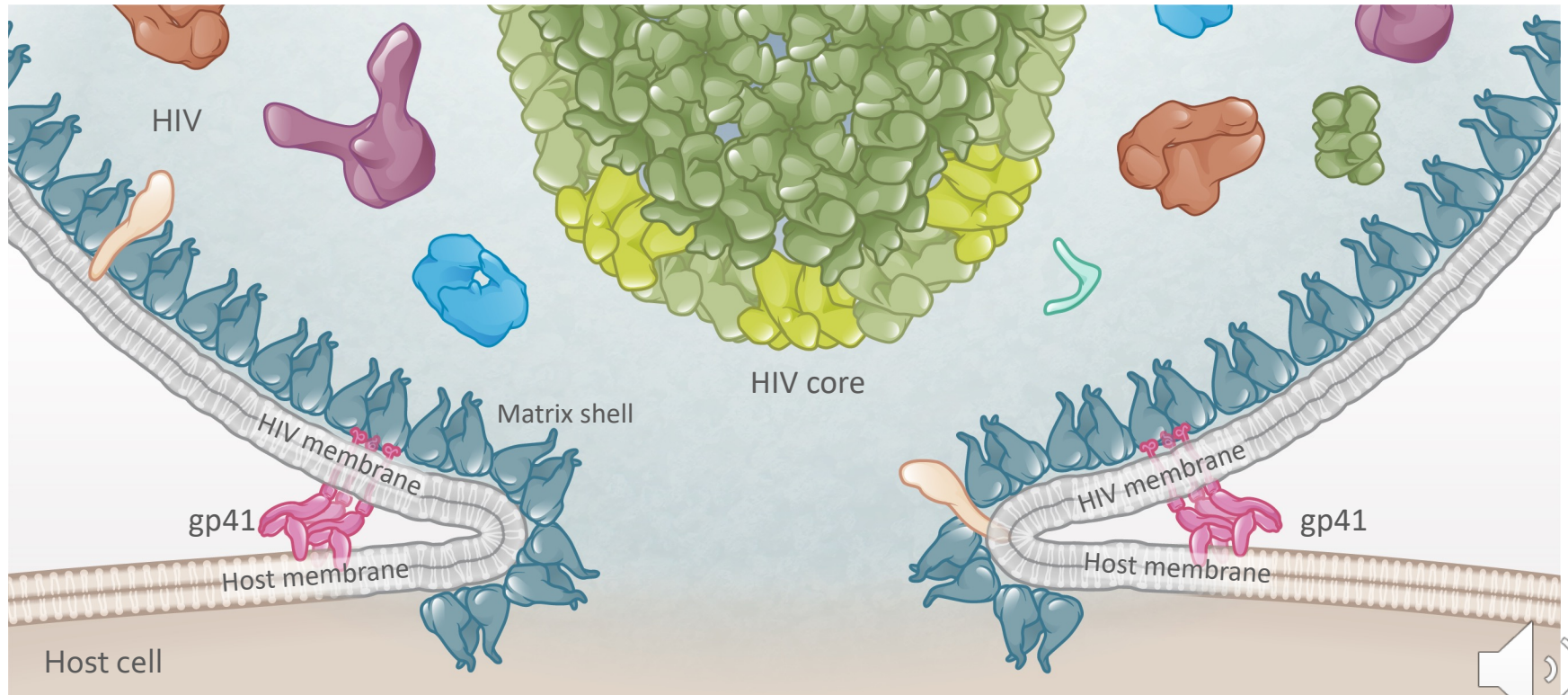
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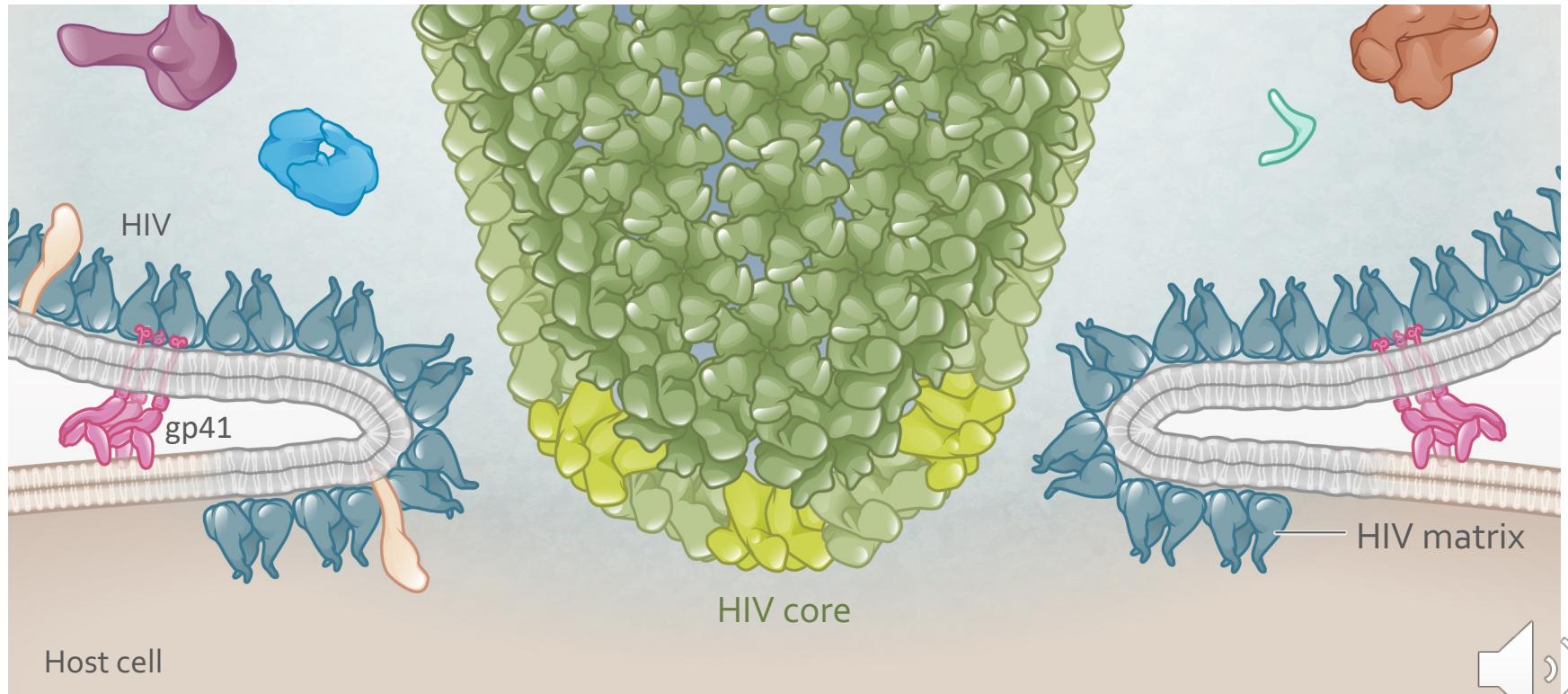
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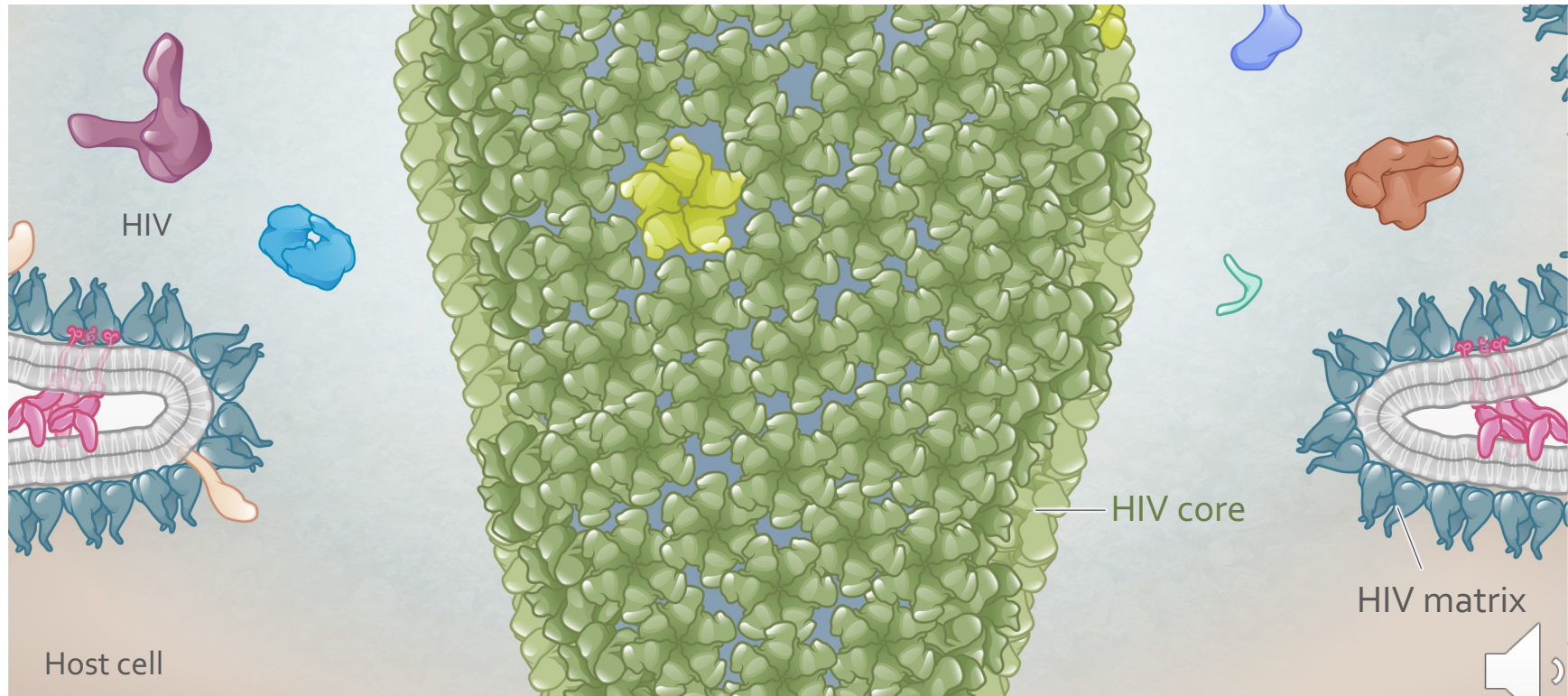
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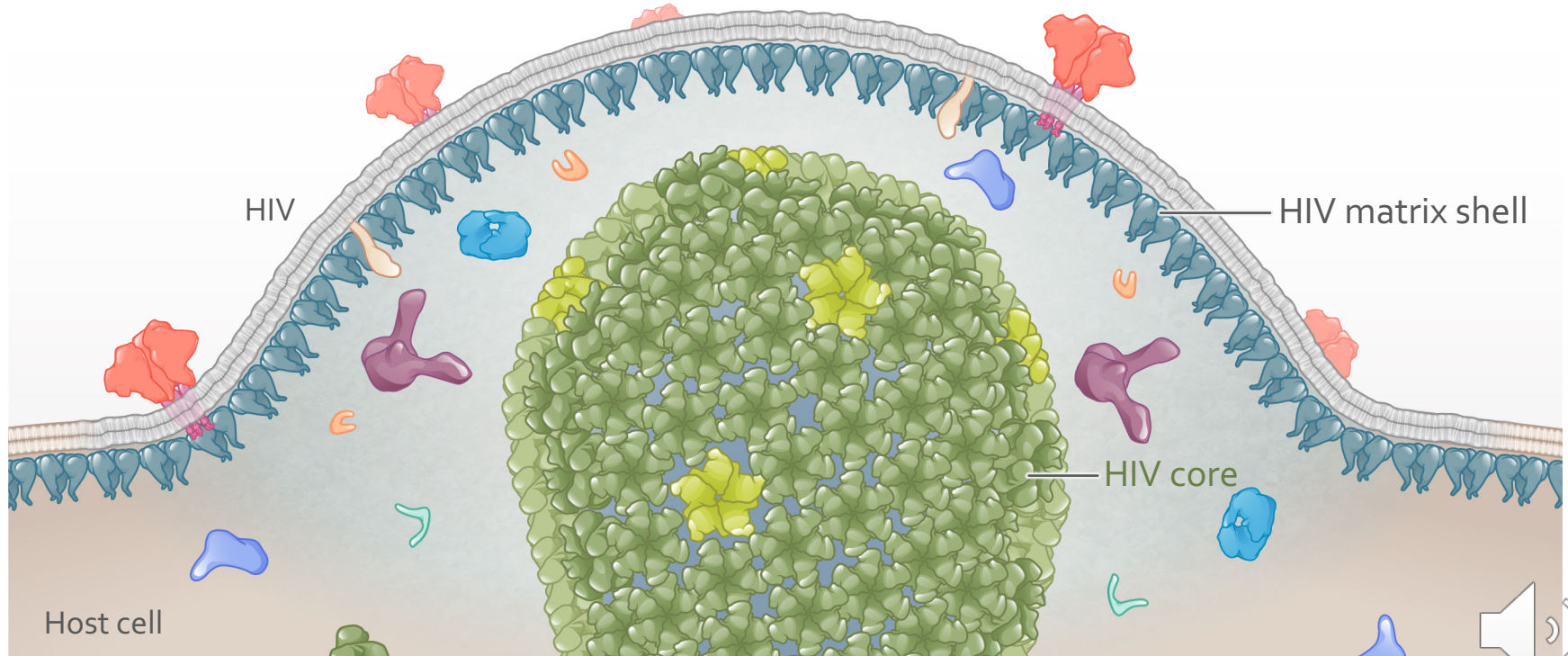
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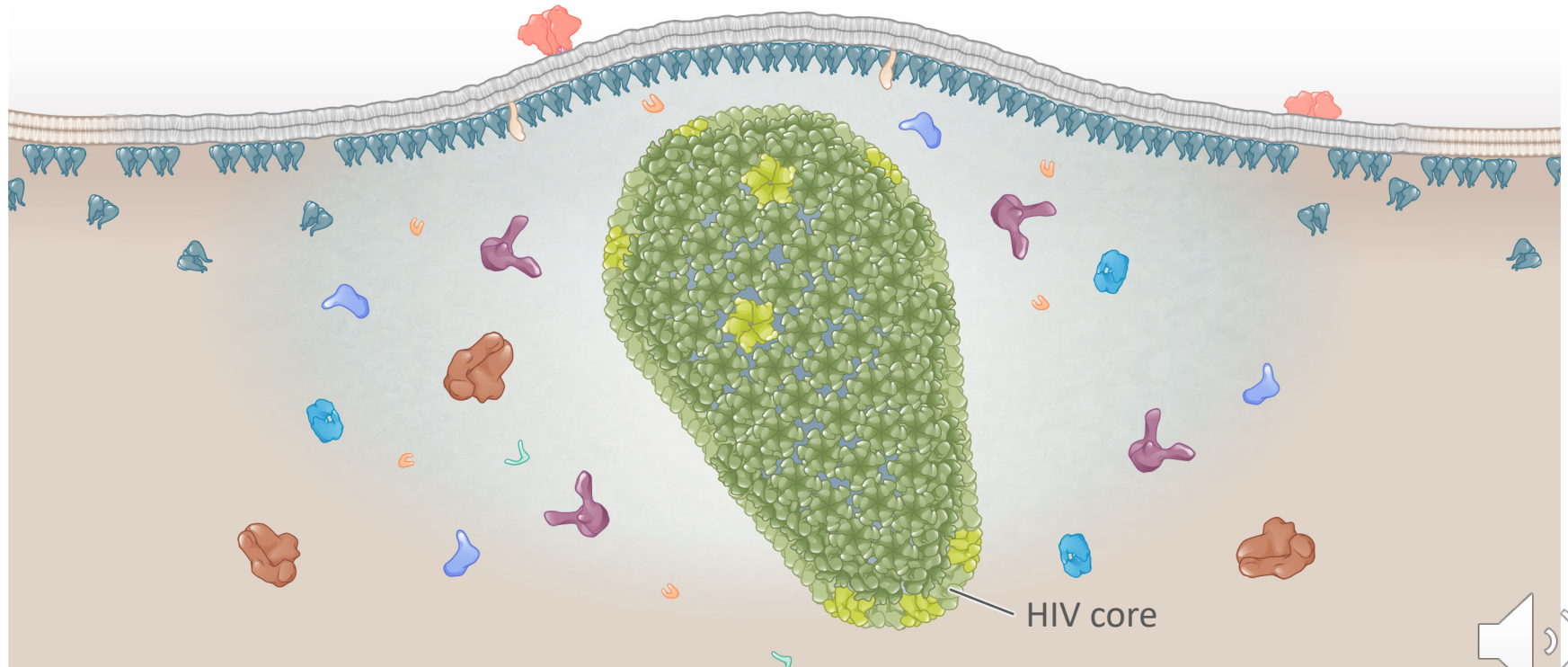
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Entry

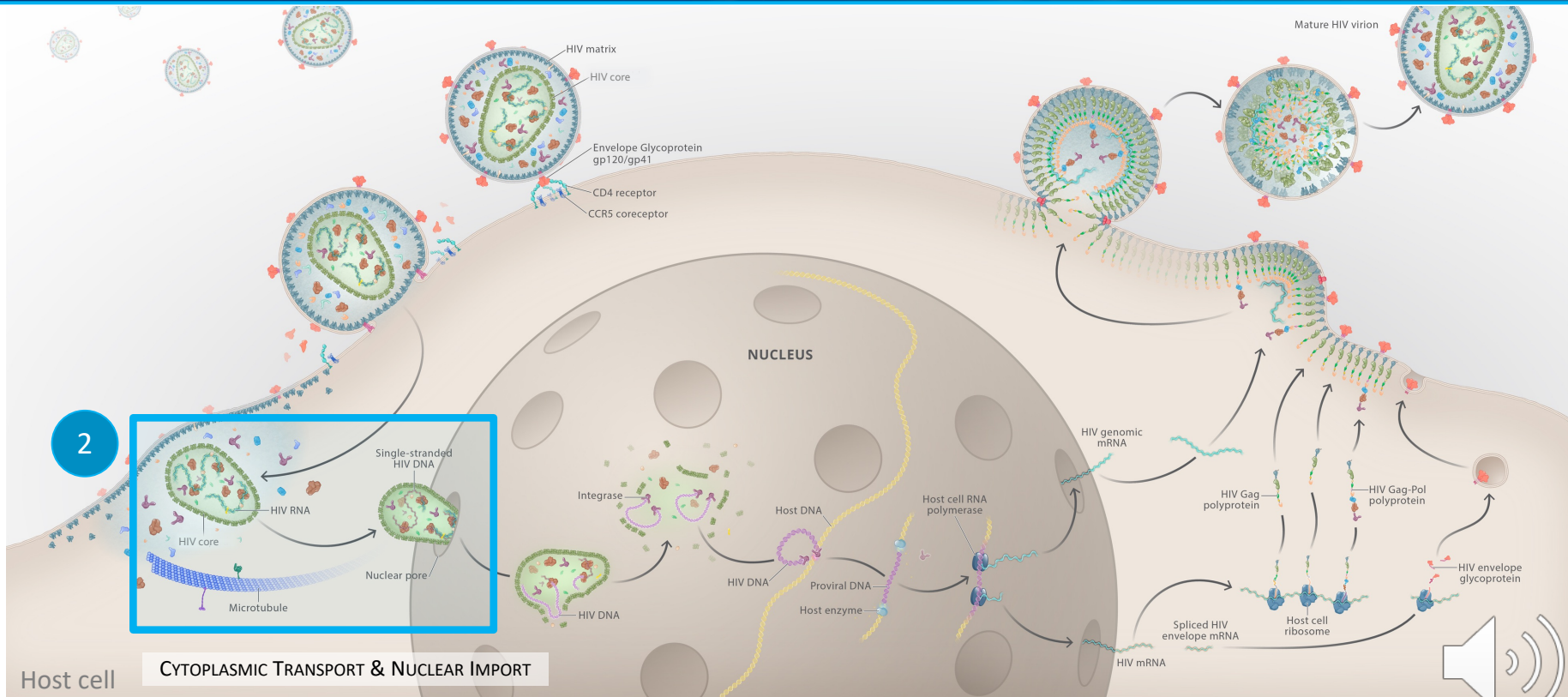


Entry: Fusion

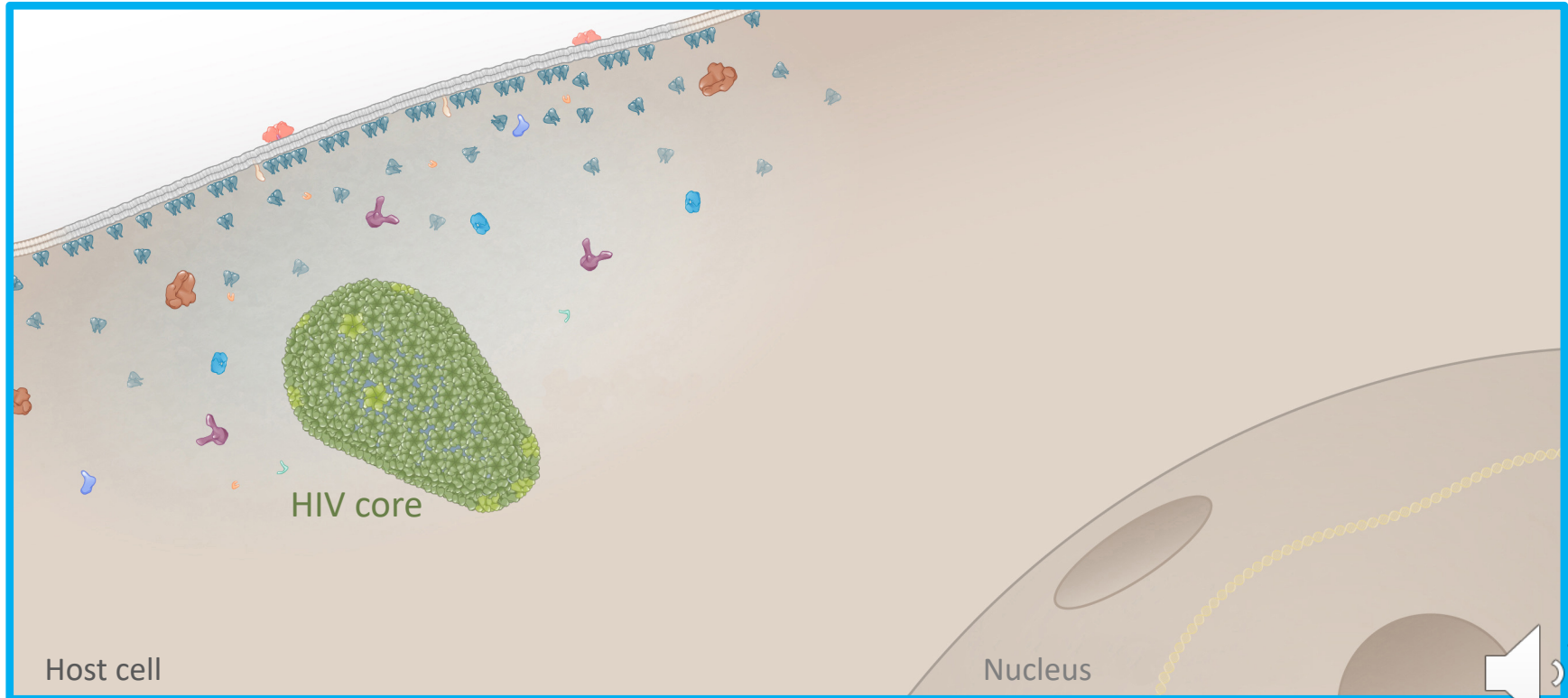


HIV Life Cycle

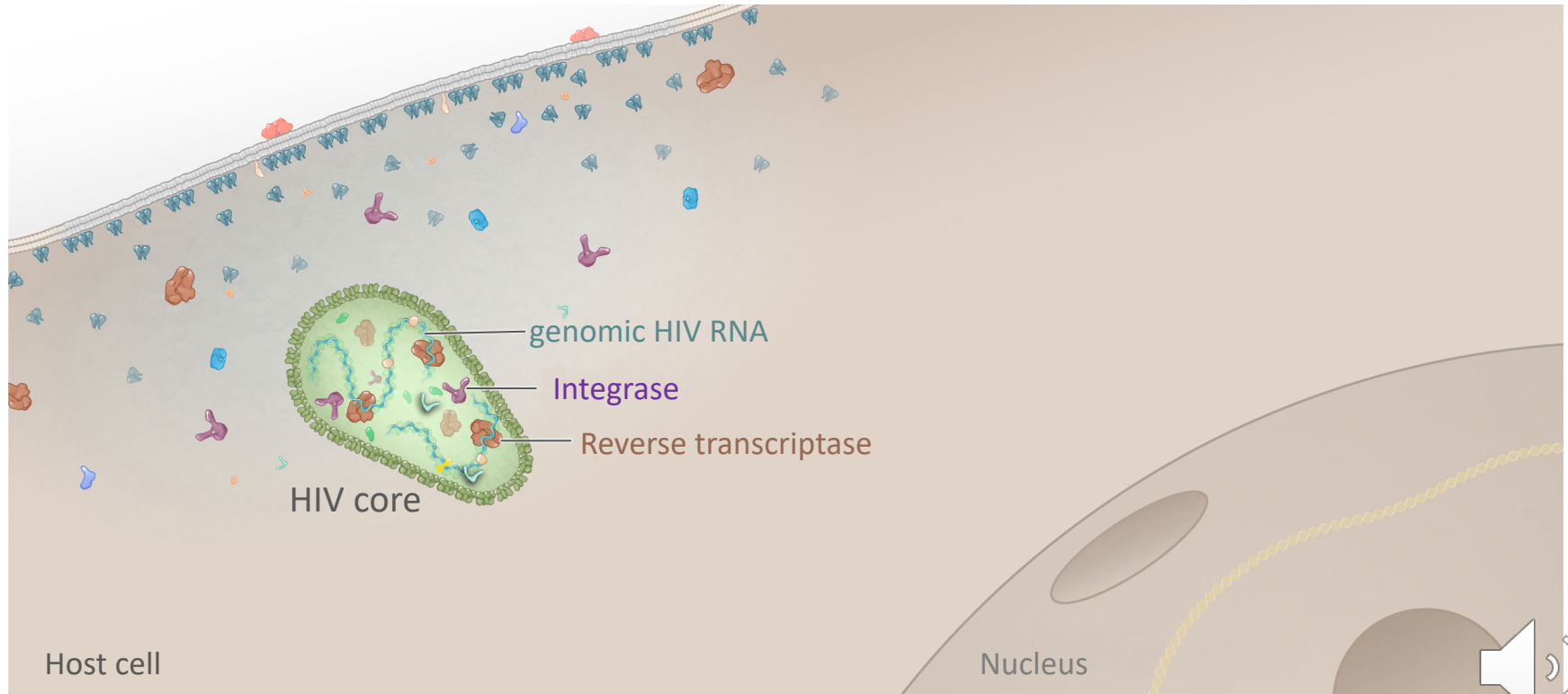
Cytoplasmic Transport and Nuclear Import



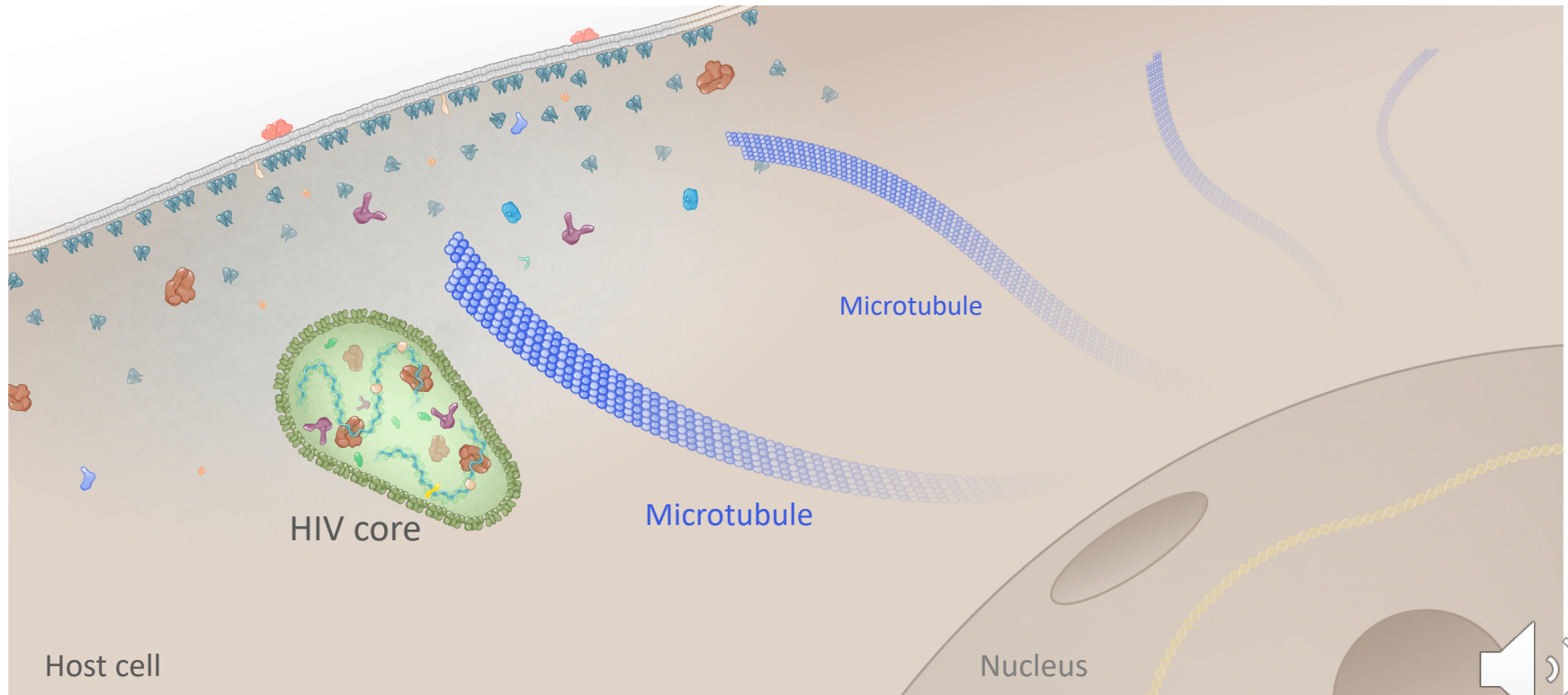
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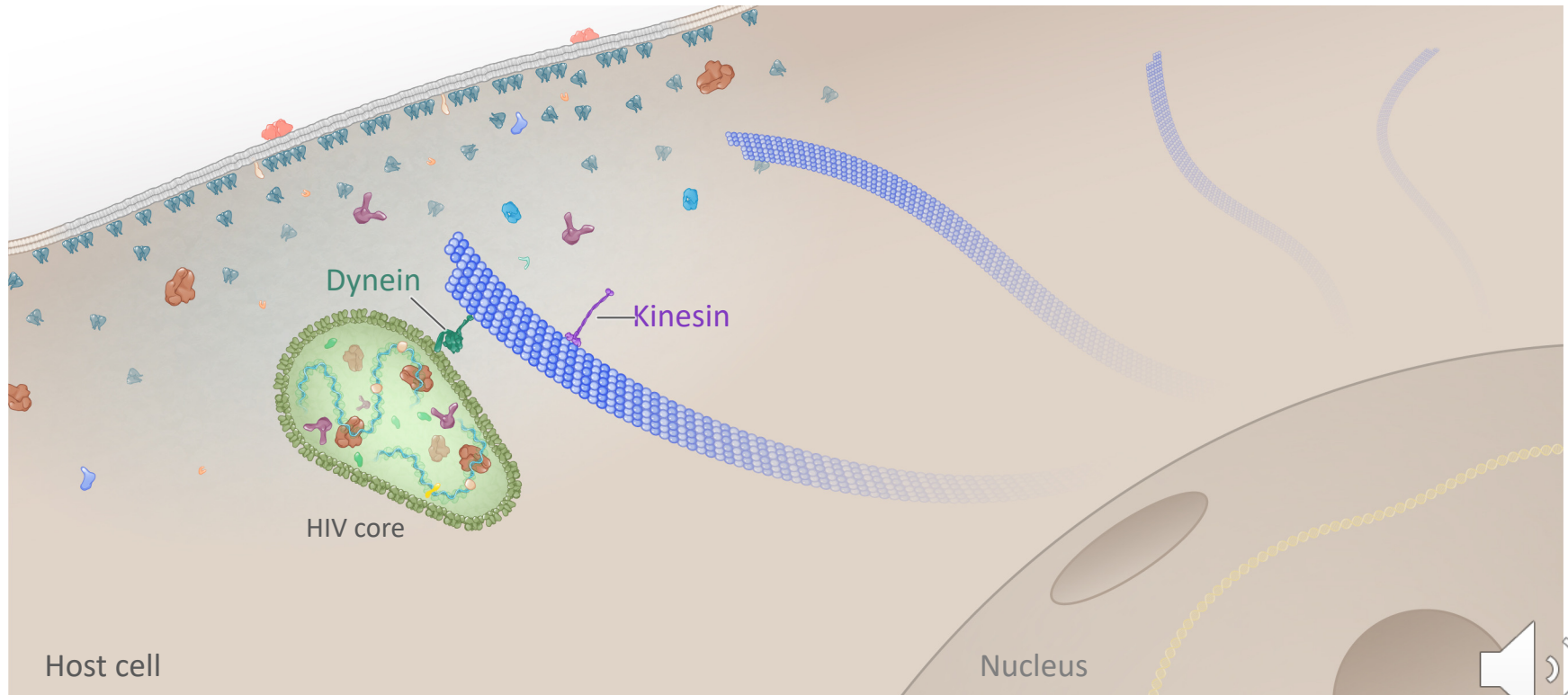
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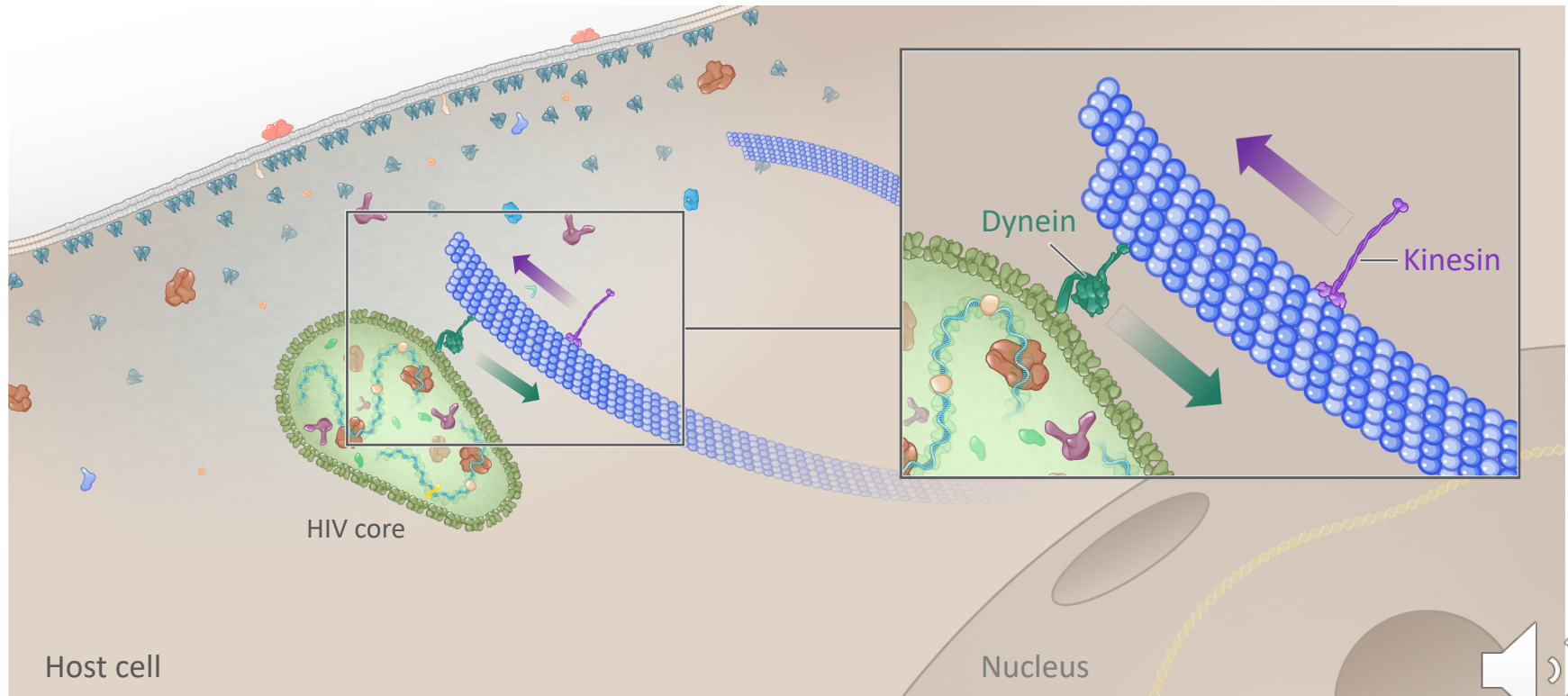
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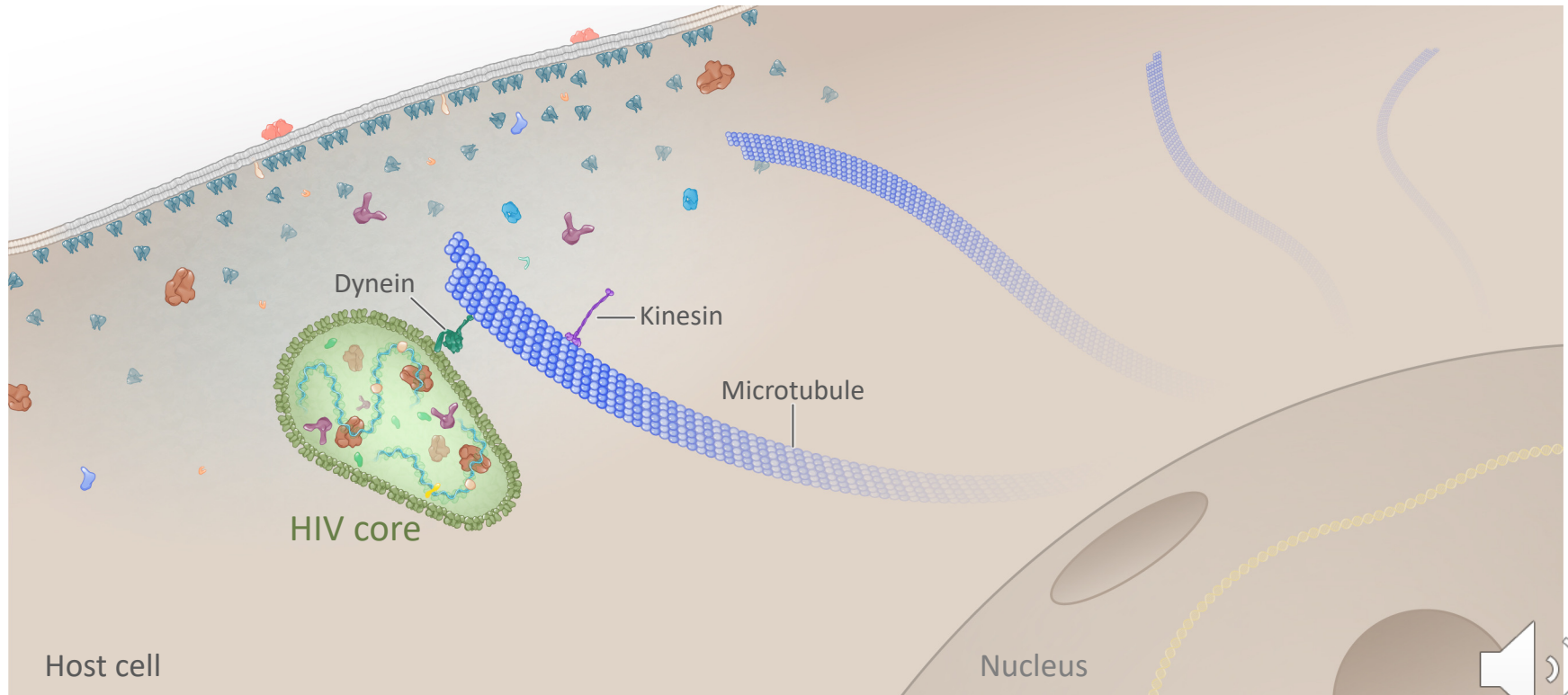
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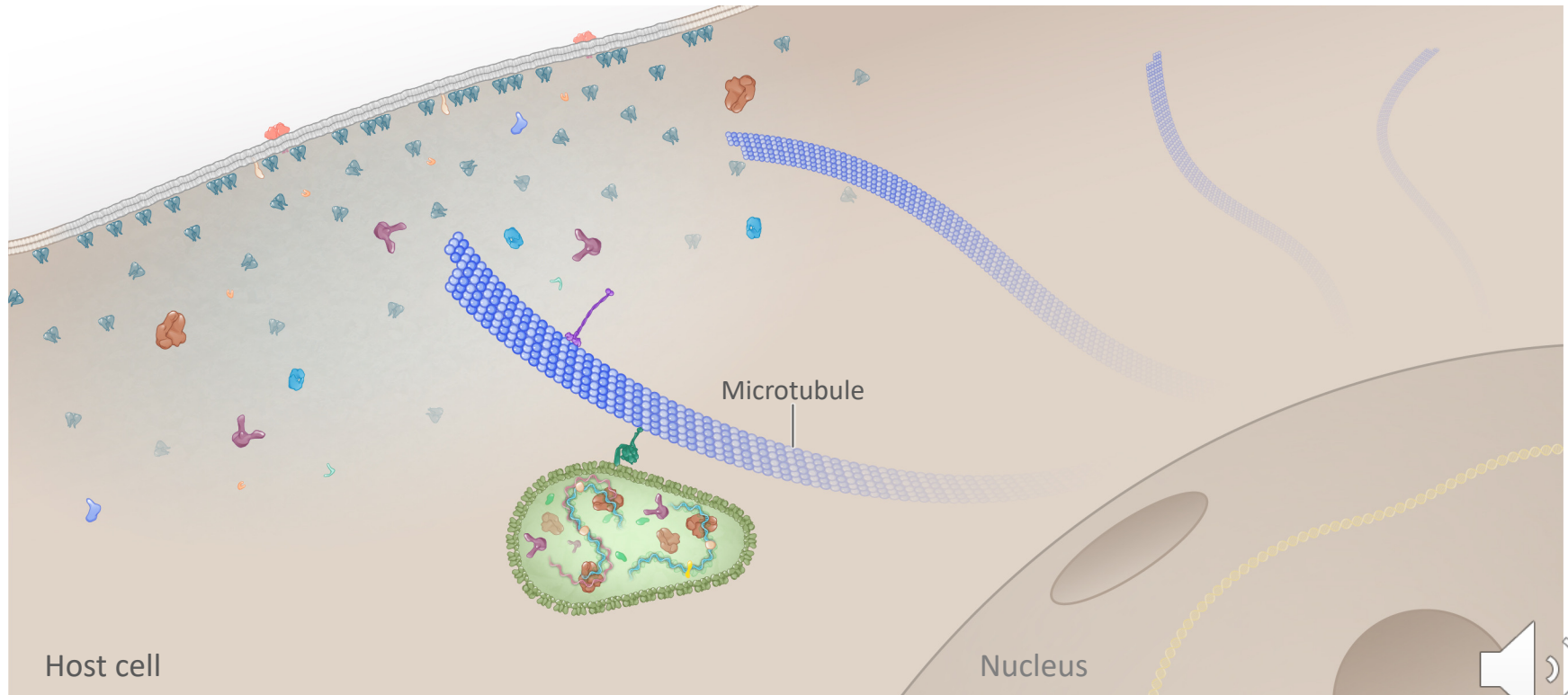
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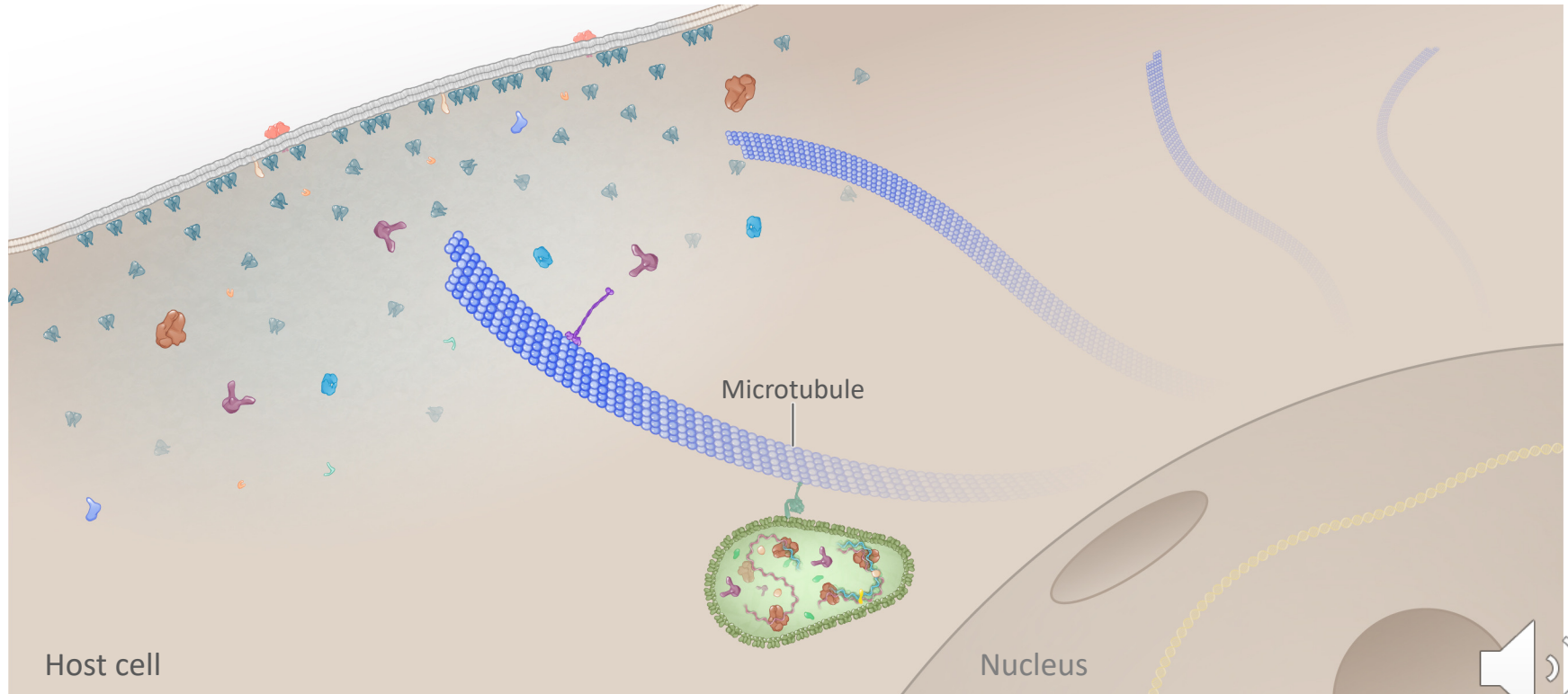
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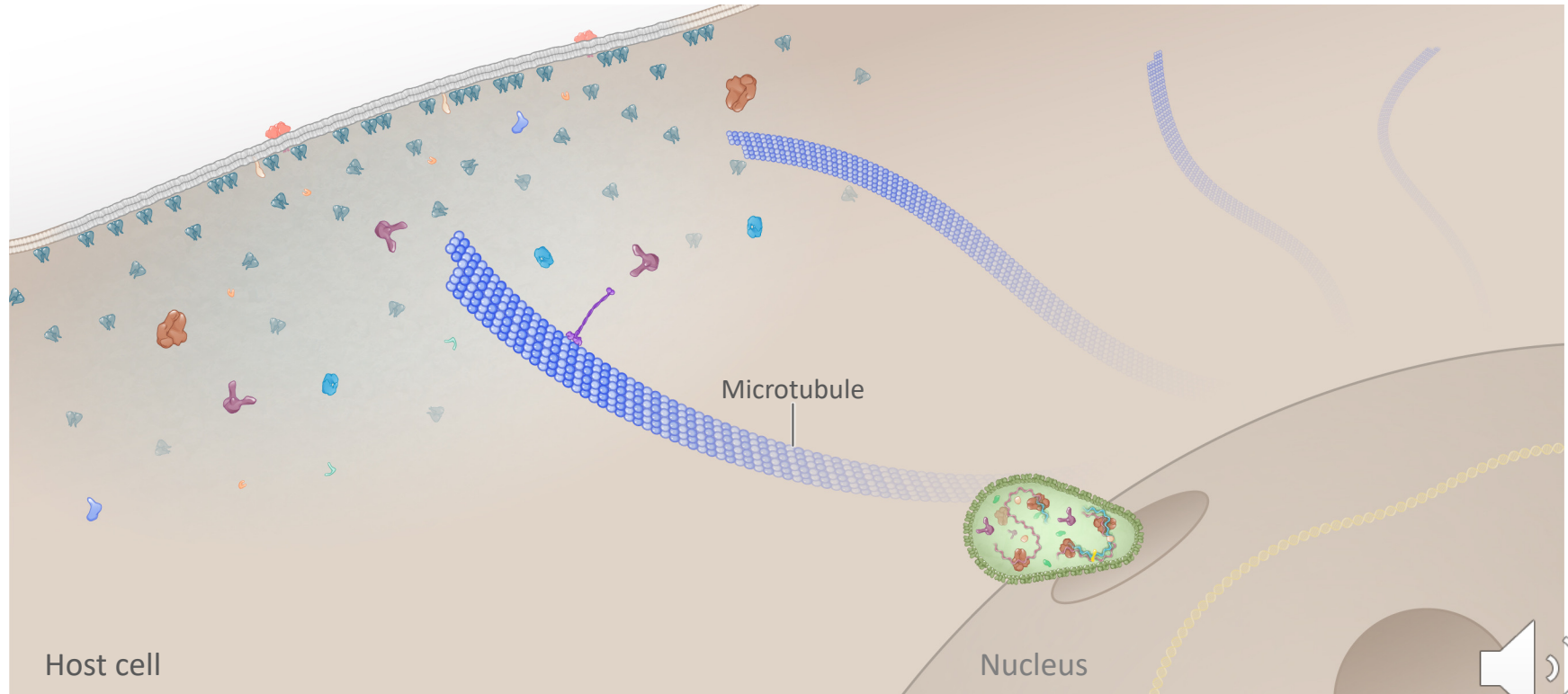
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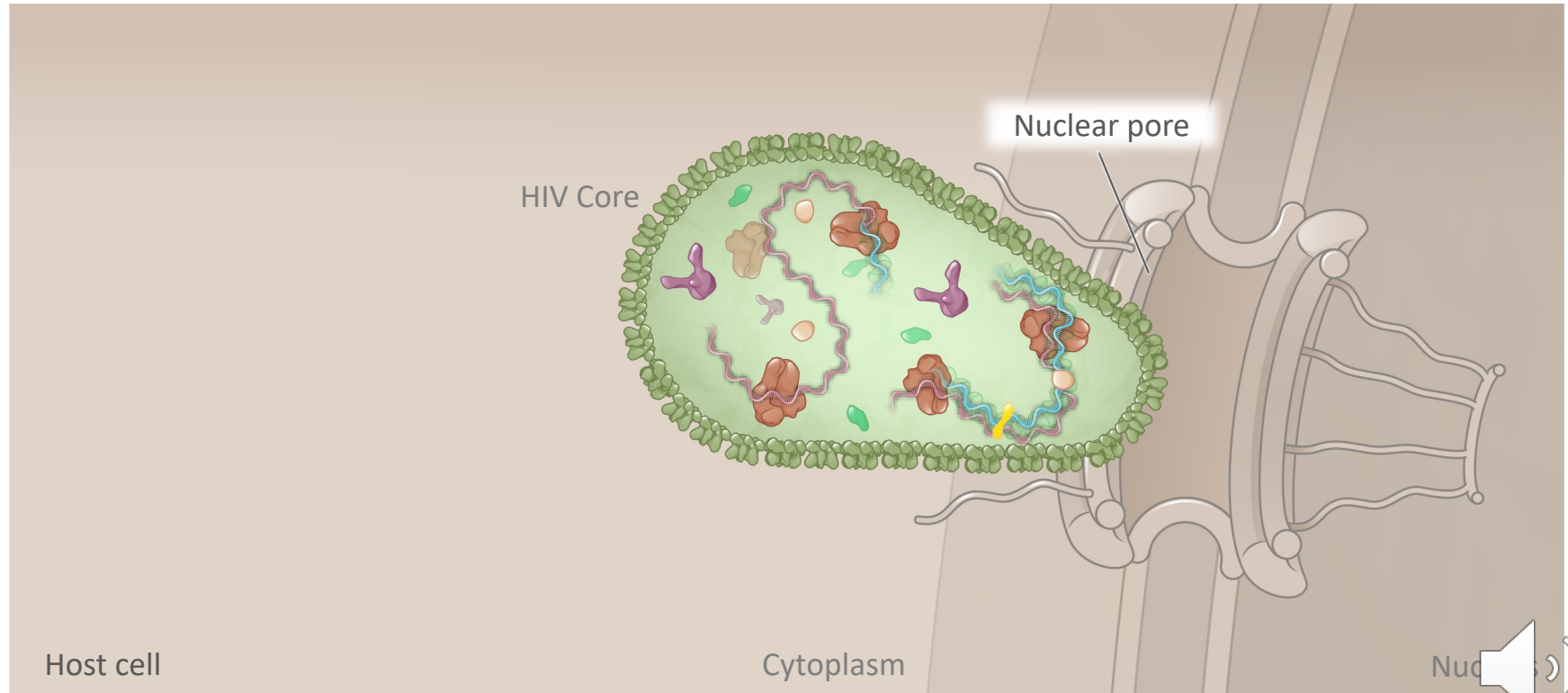
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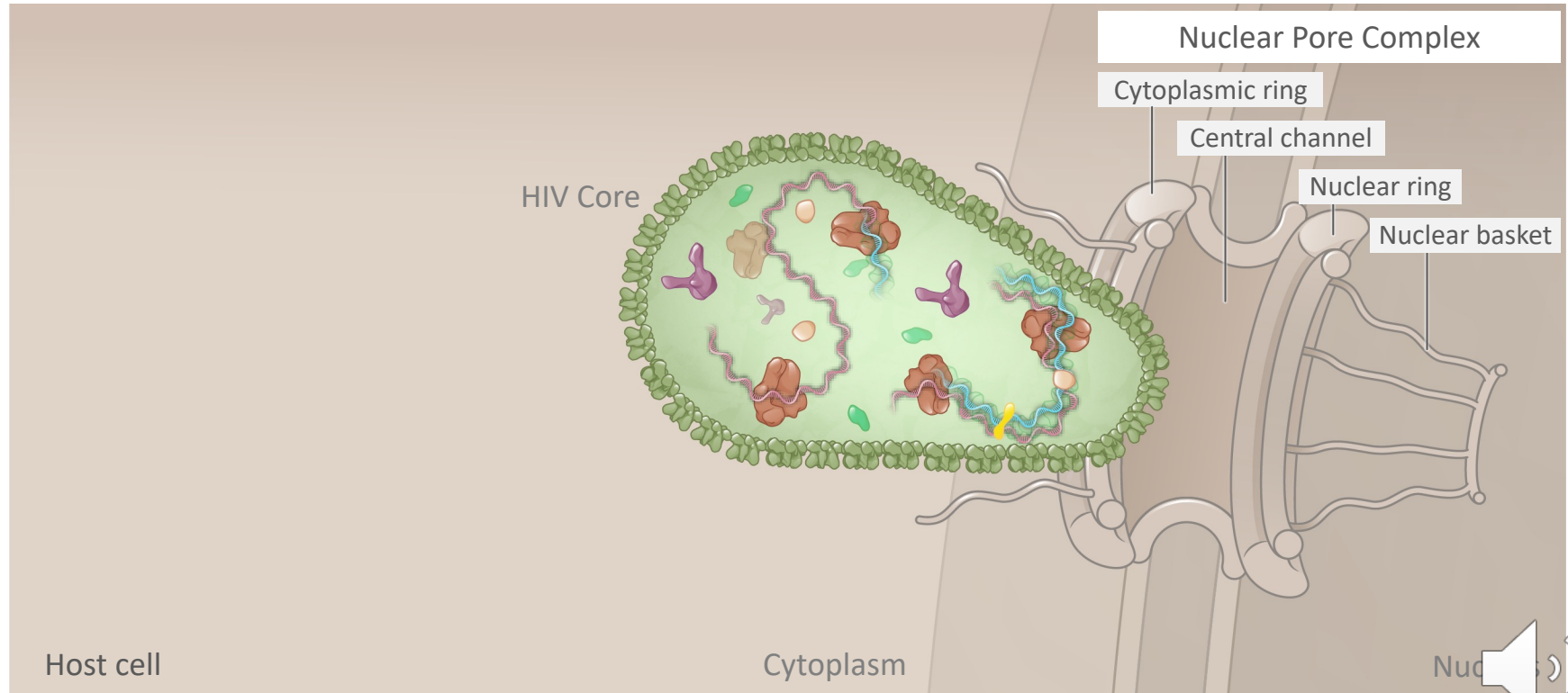
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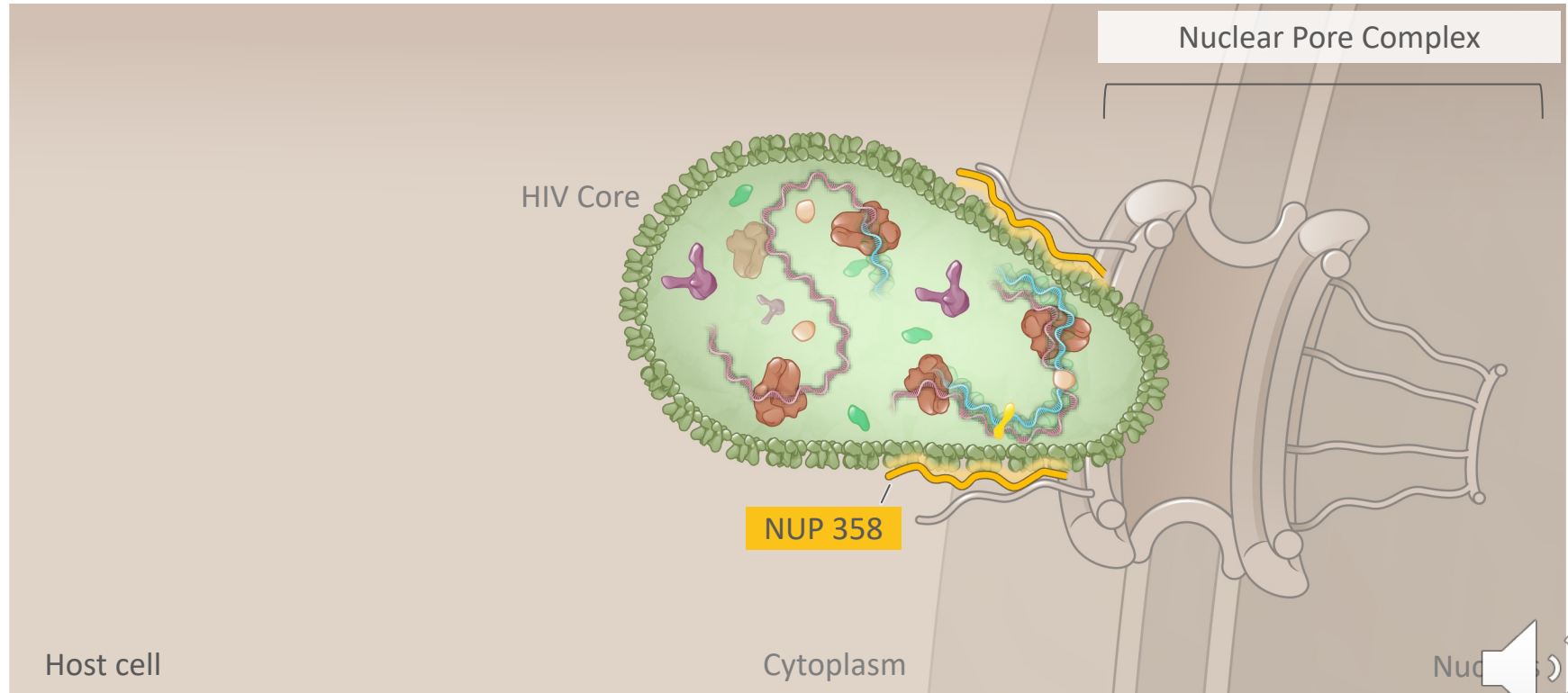
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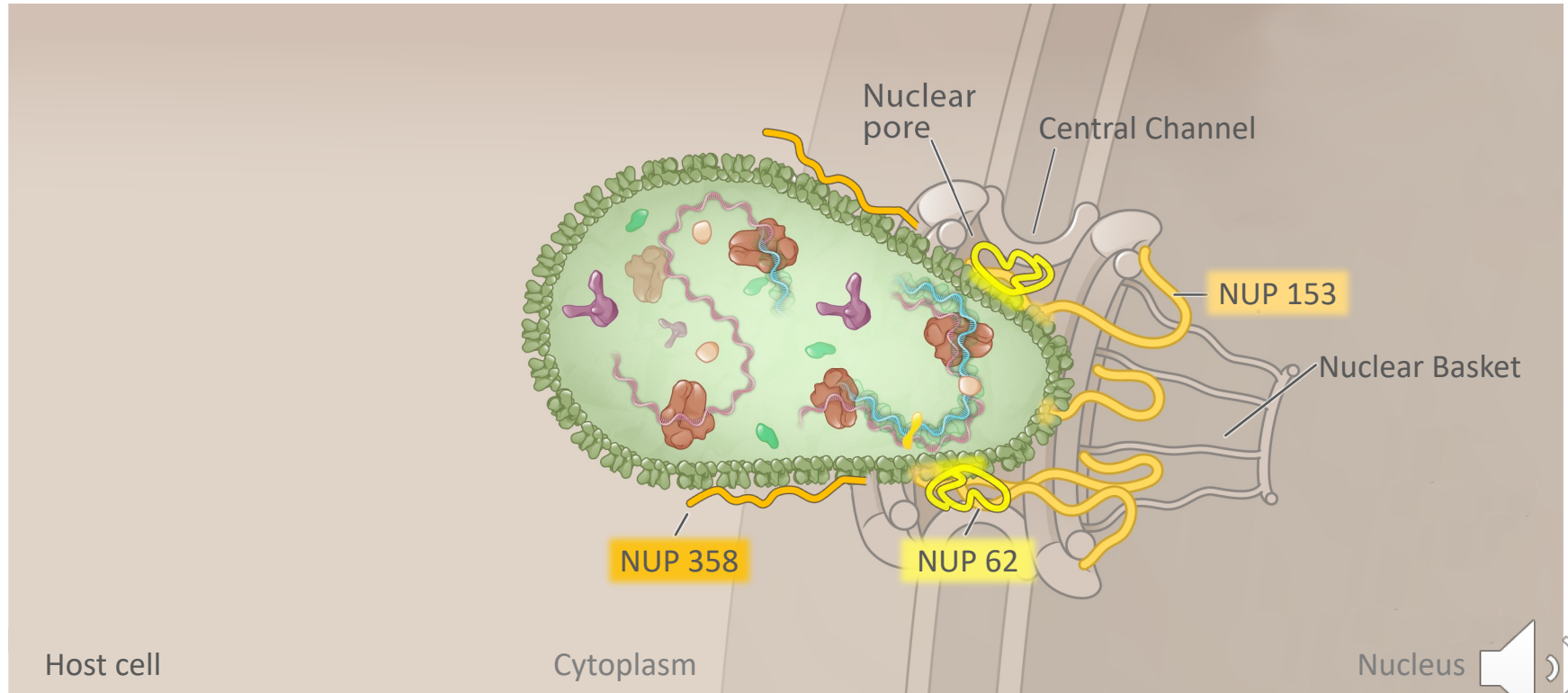
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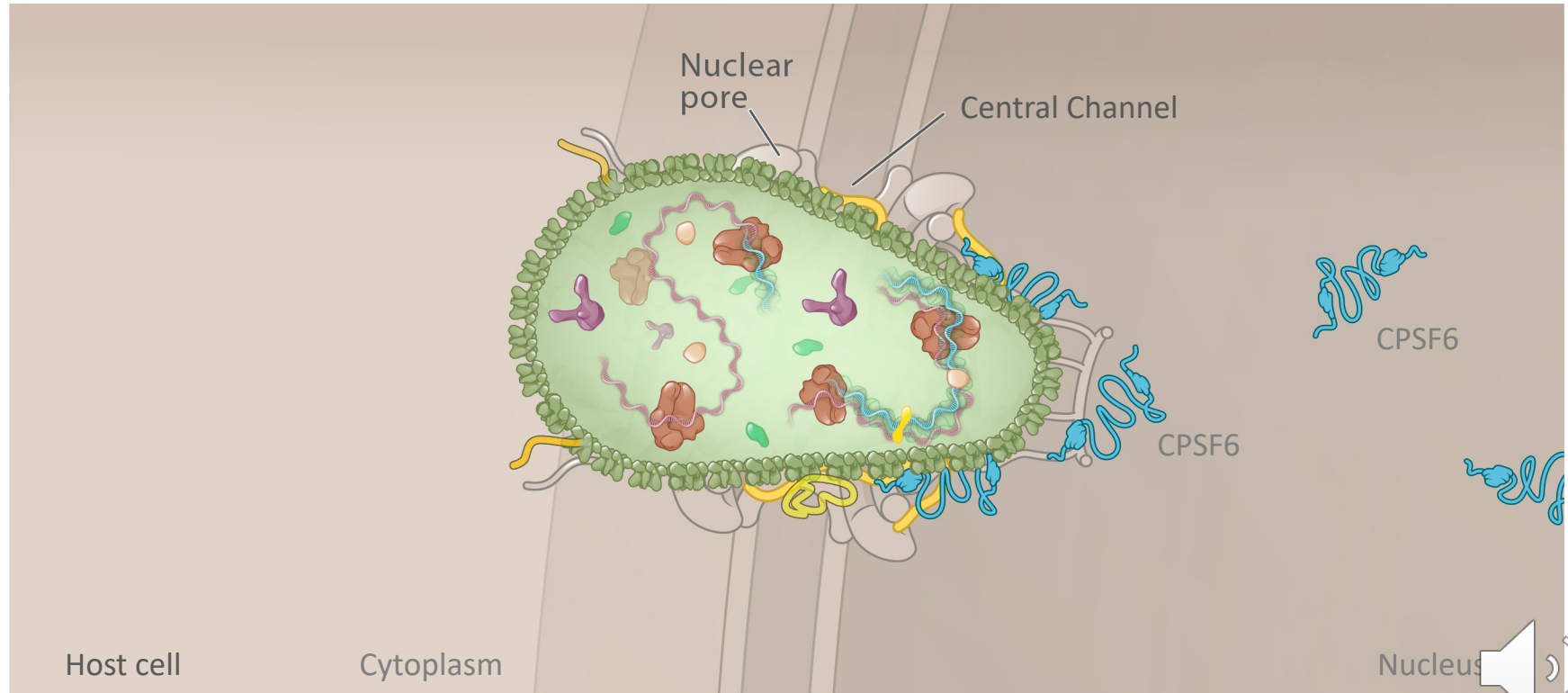
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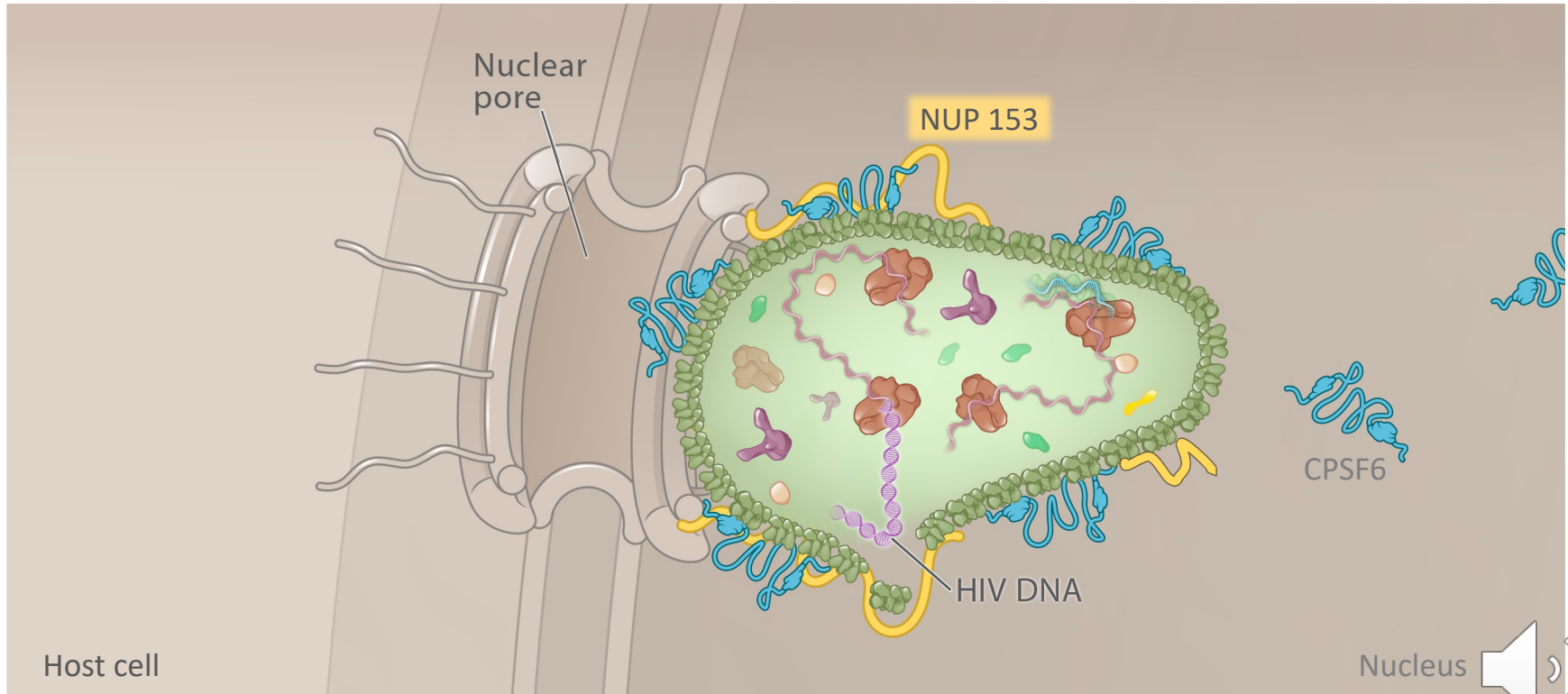
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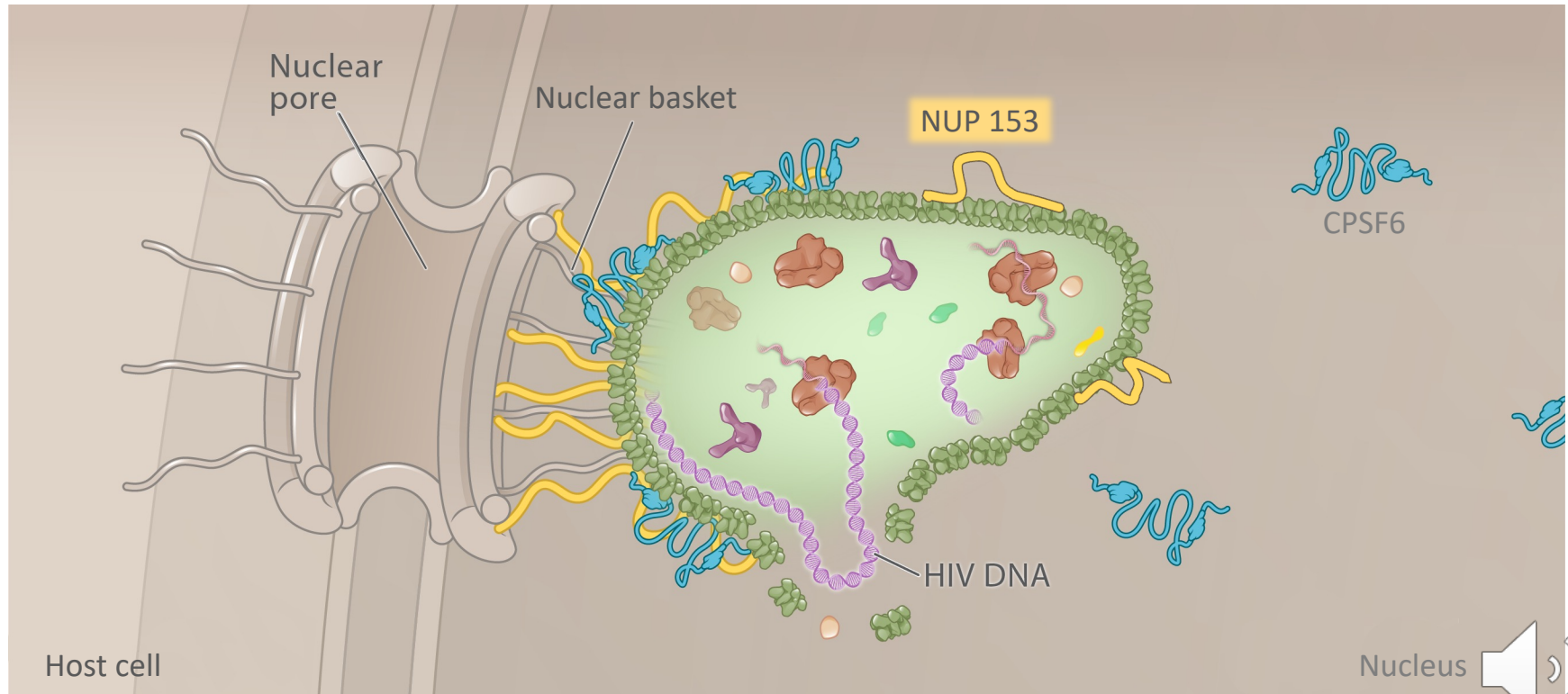
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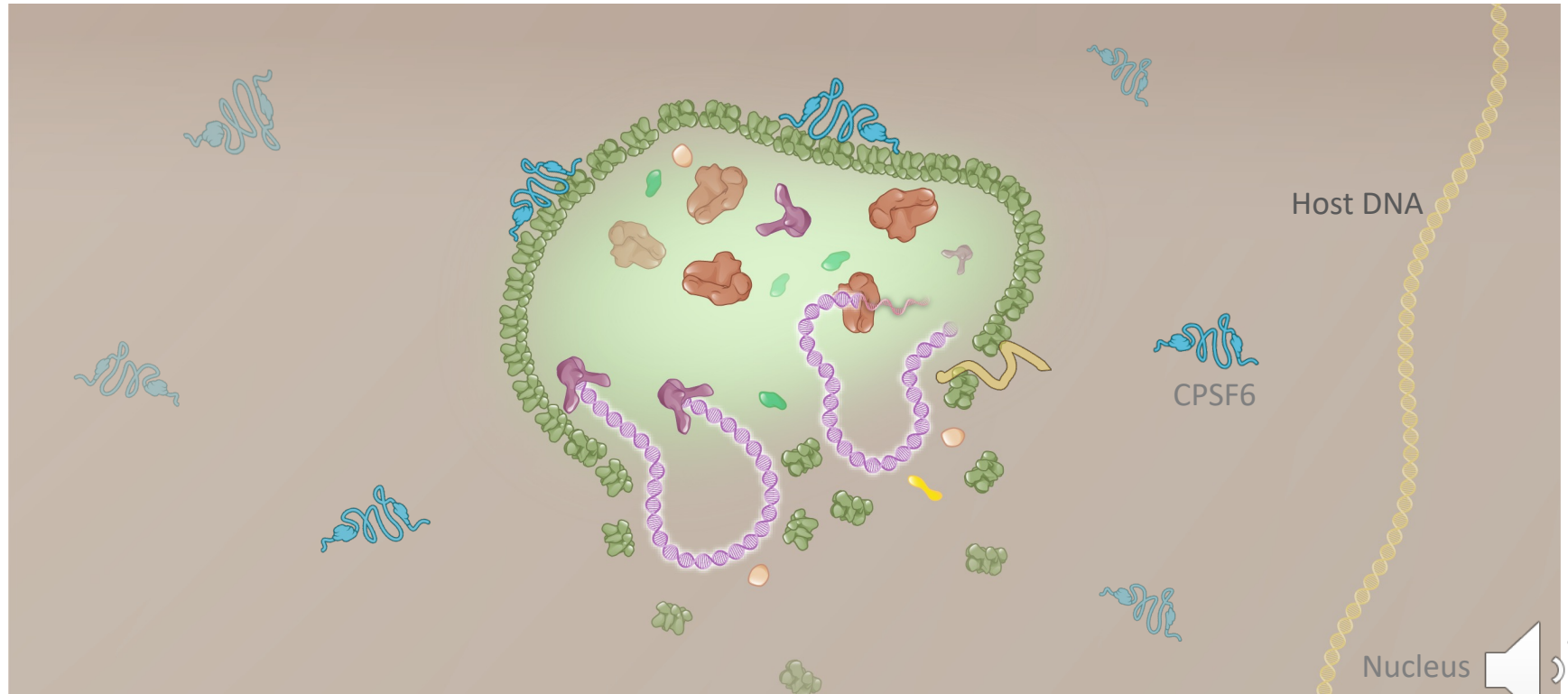
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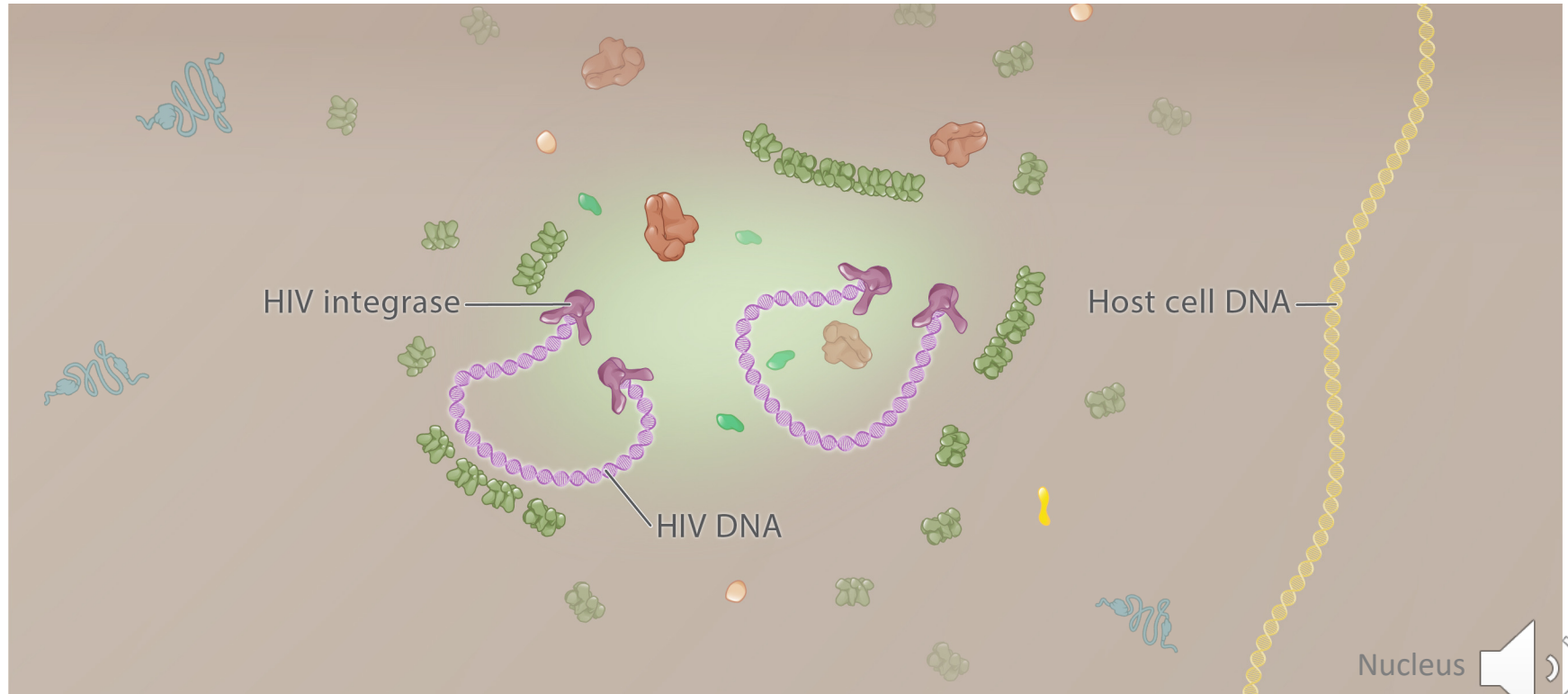
Cytoplasmic Transport and Nuclear Import



Cytoplasmic Transport and Nuclear Import

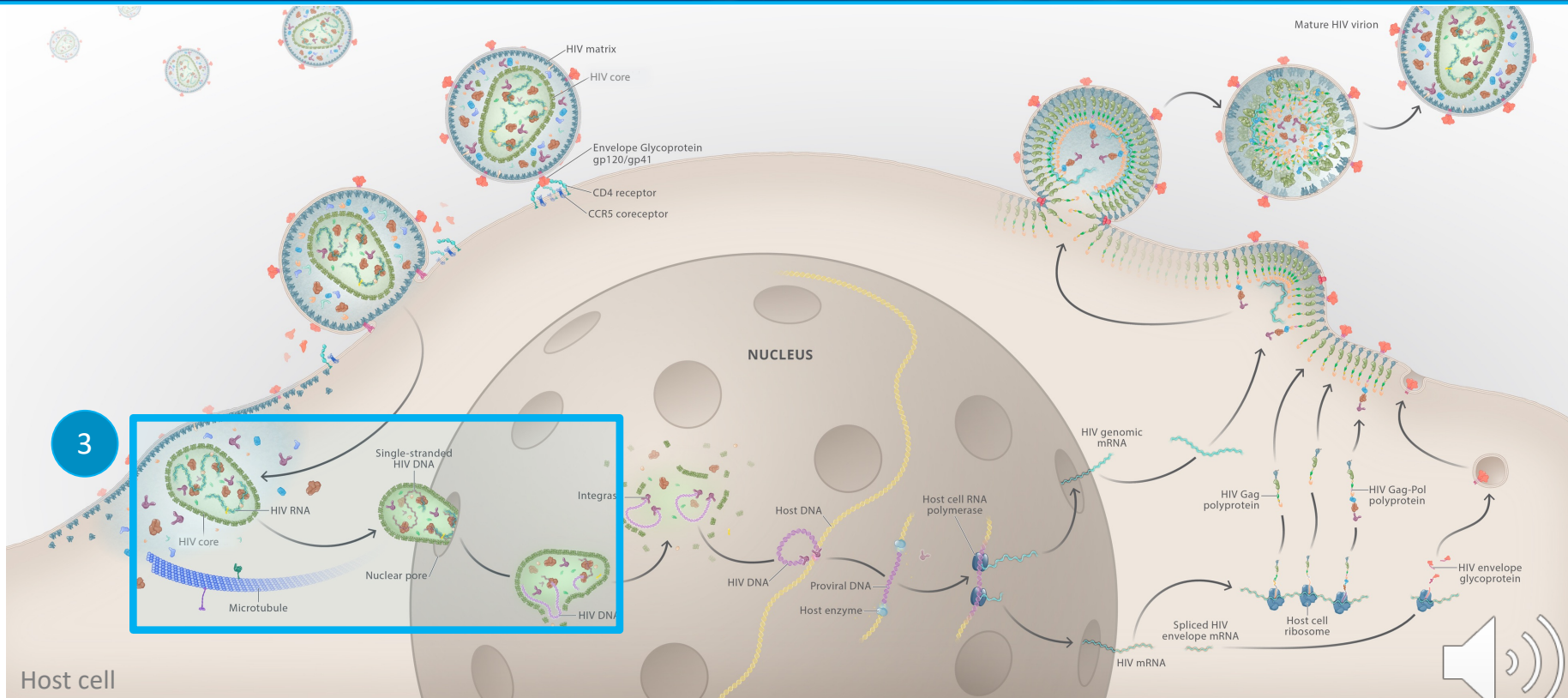


Cytoplasmic Transport and Nuclear Import

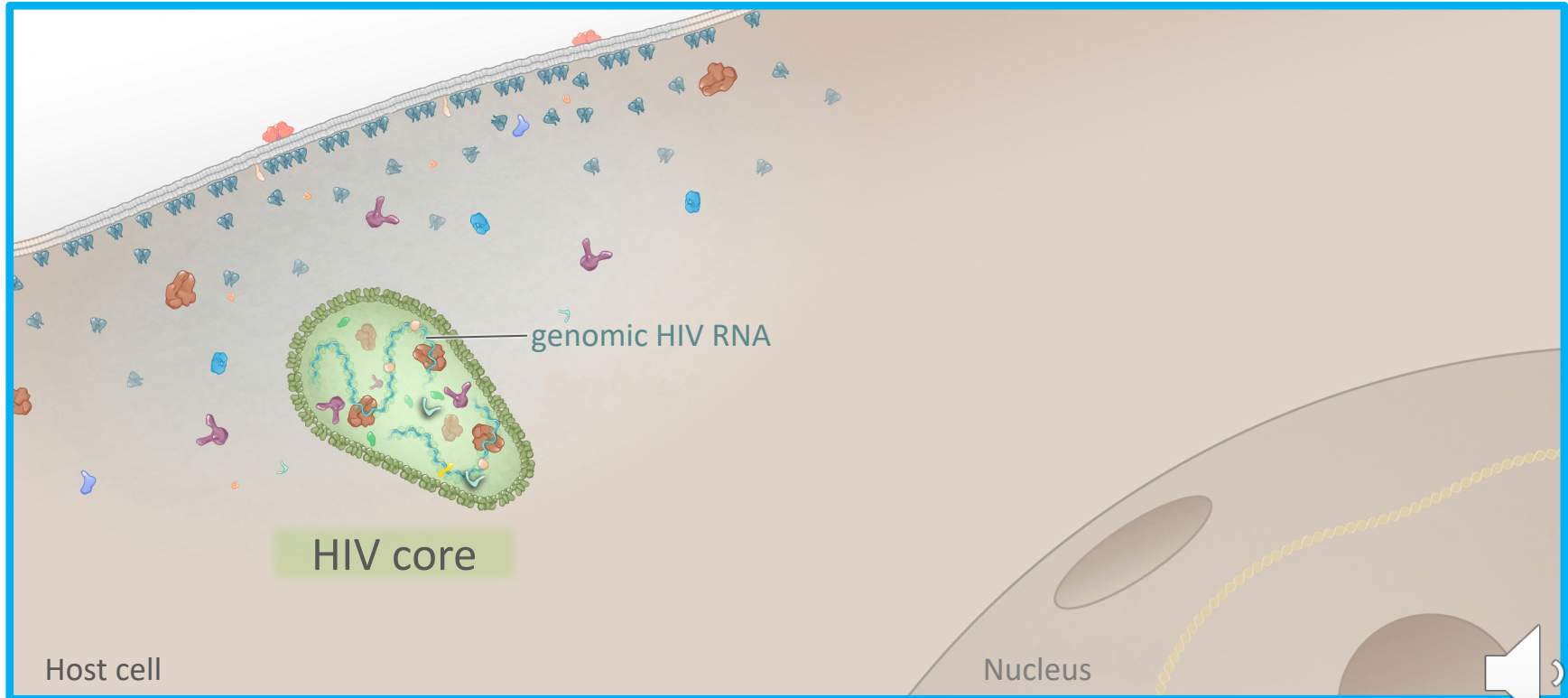


HIV Life Cycle

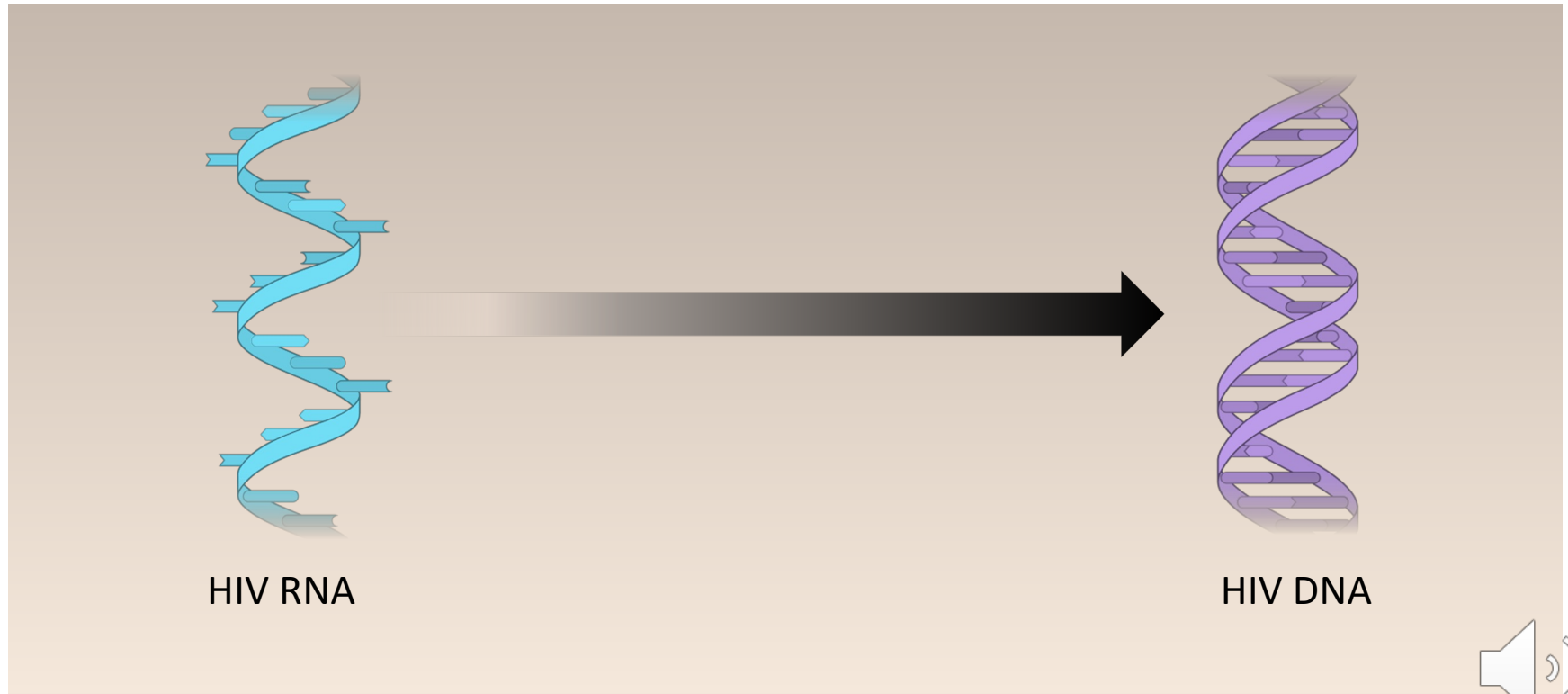
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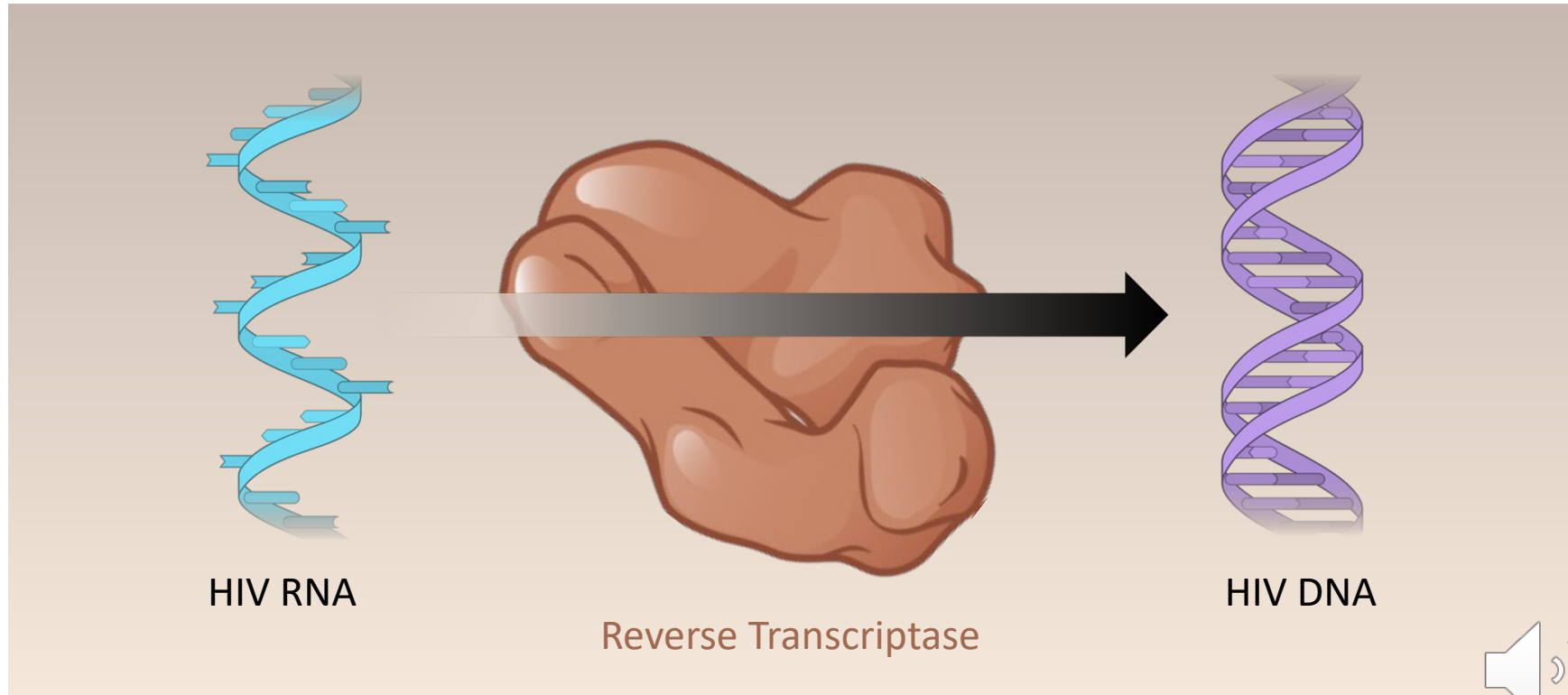
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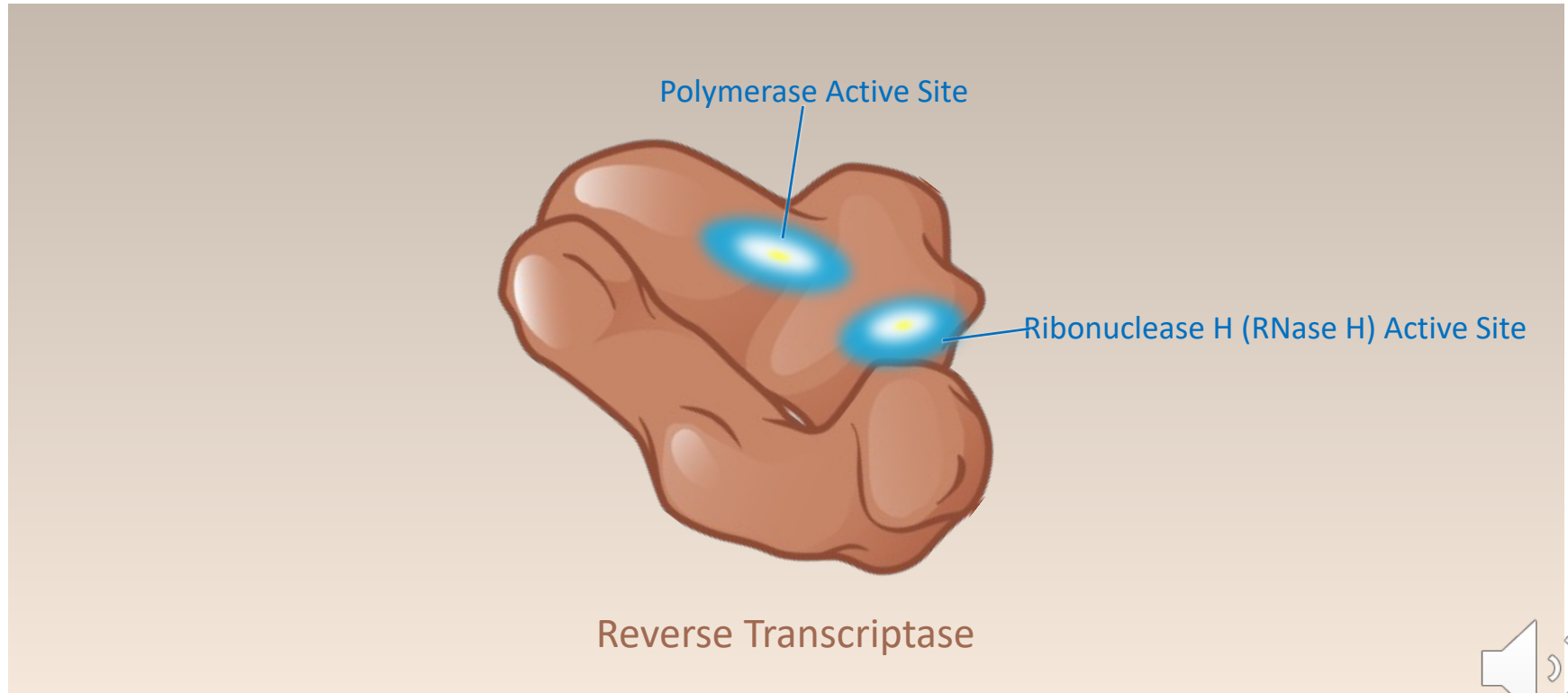
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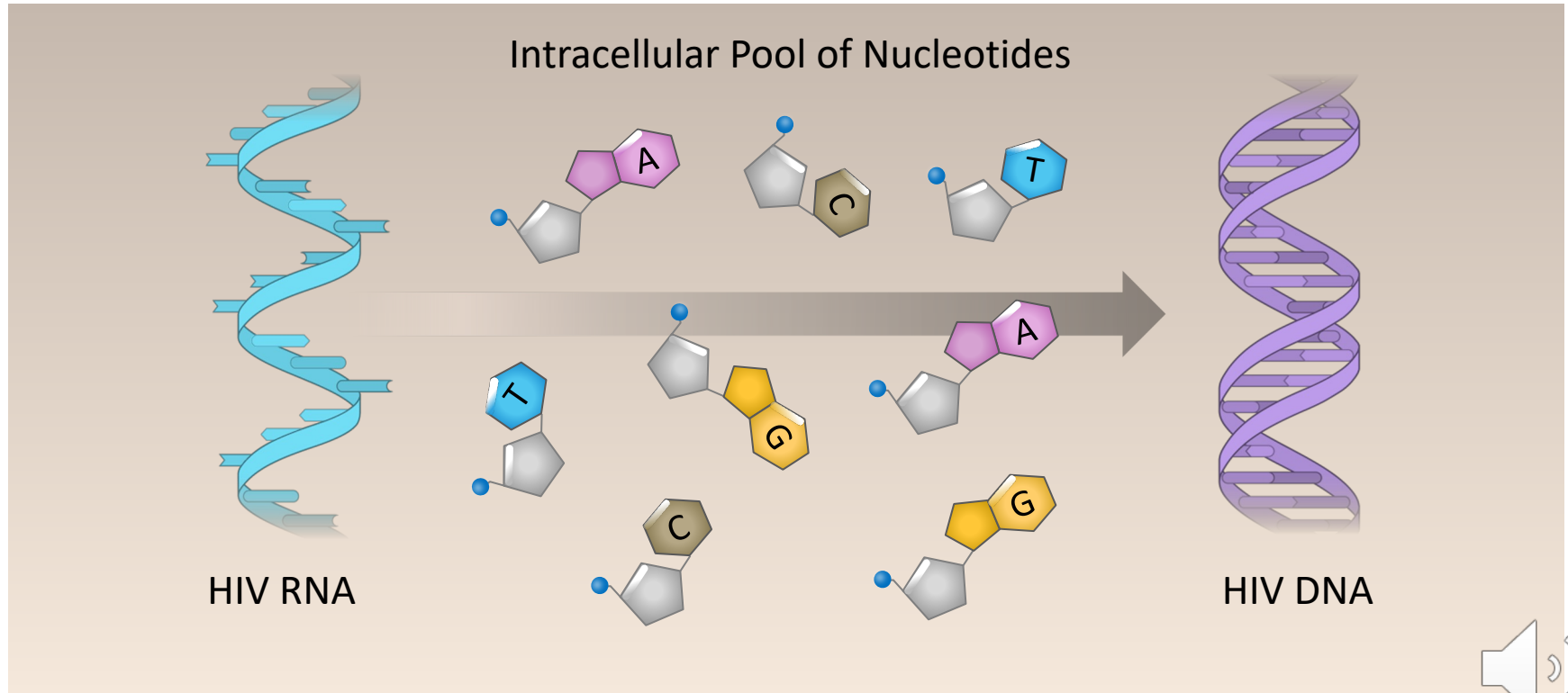
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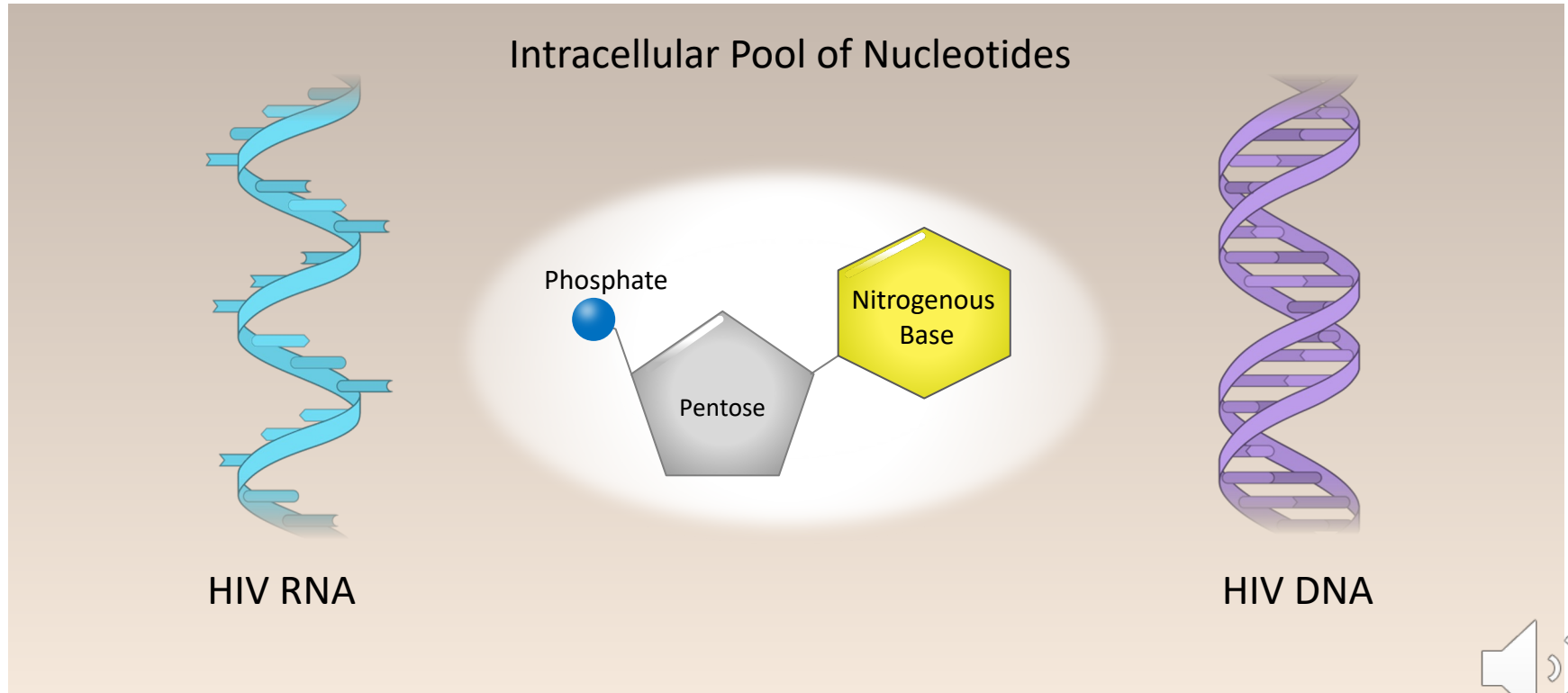
Reverse Transcription



Reverse Transcription



Reverse Transcription



Reverse Transcription

Human Nucleotides

DNA and RNA

DNA Only

RNA Only

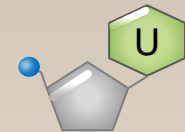
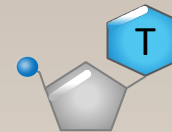
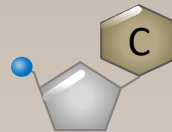
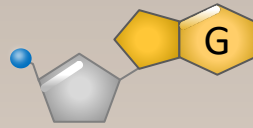
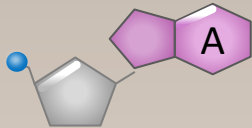
Adenine

Guanine

Cytosine

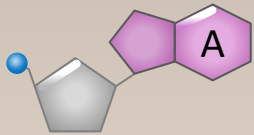
Thymidine

Uracil

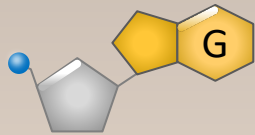


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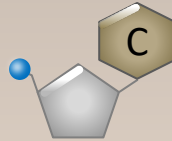
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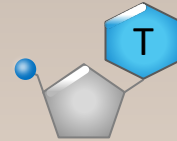
Guanine



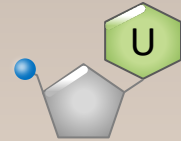
Cytosine



Thymidine



Uracil



Adenine



Guanine



Cytosine



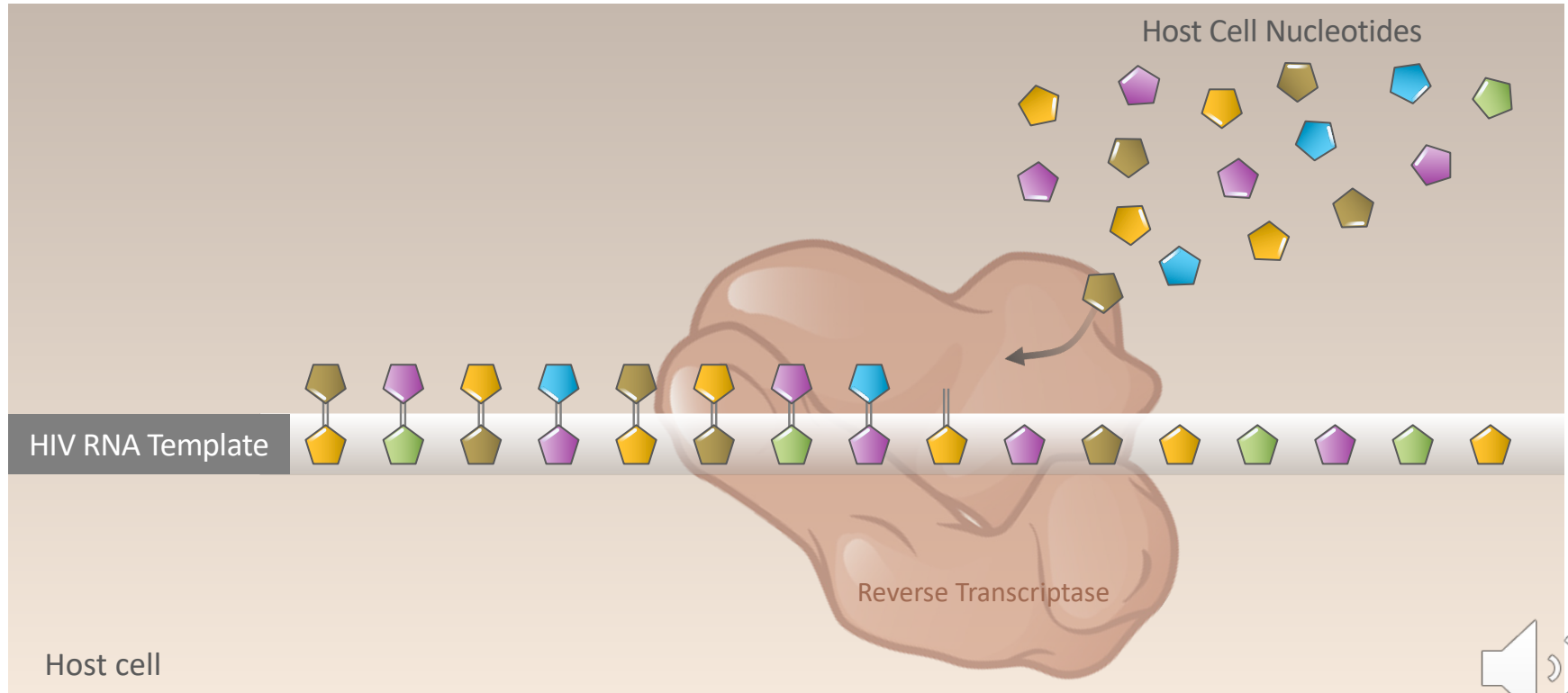
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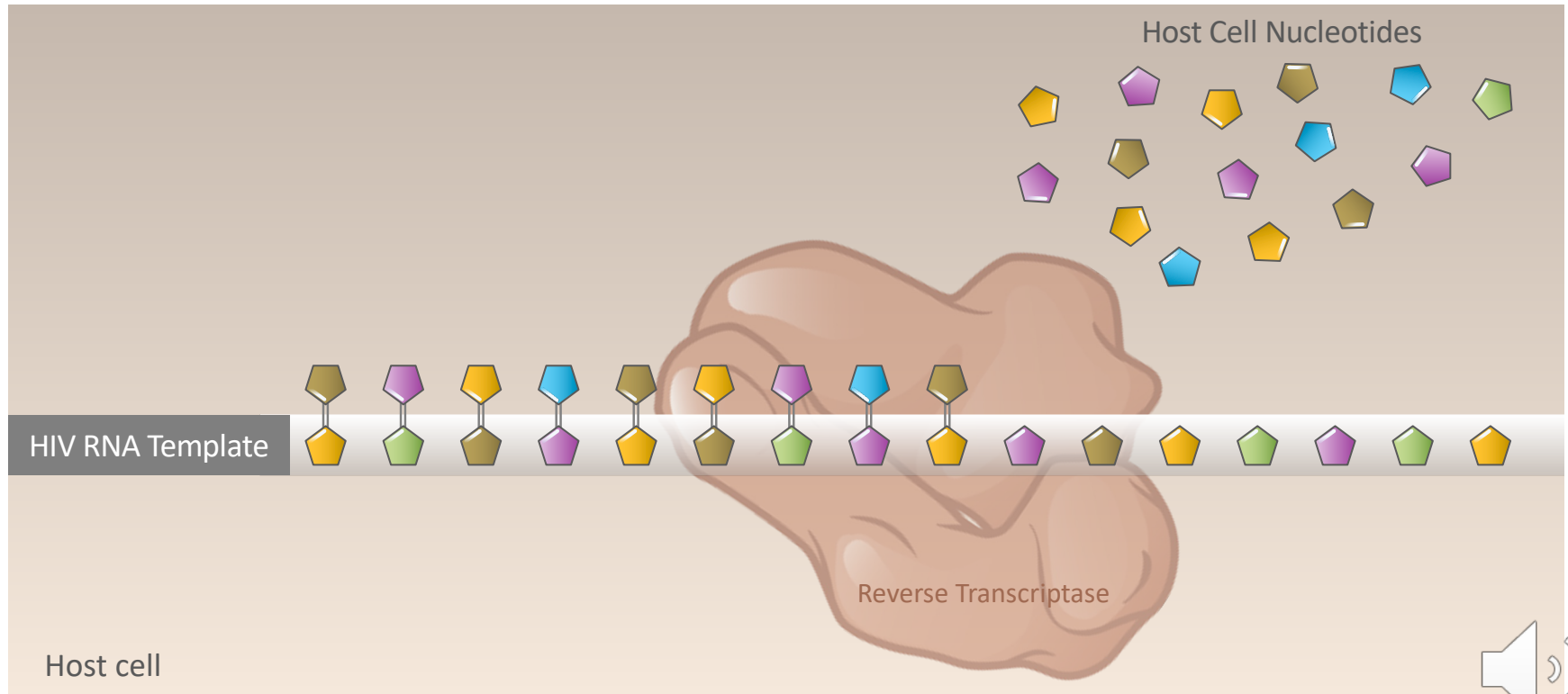
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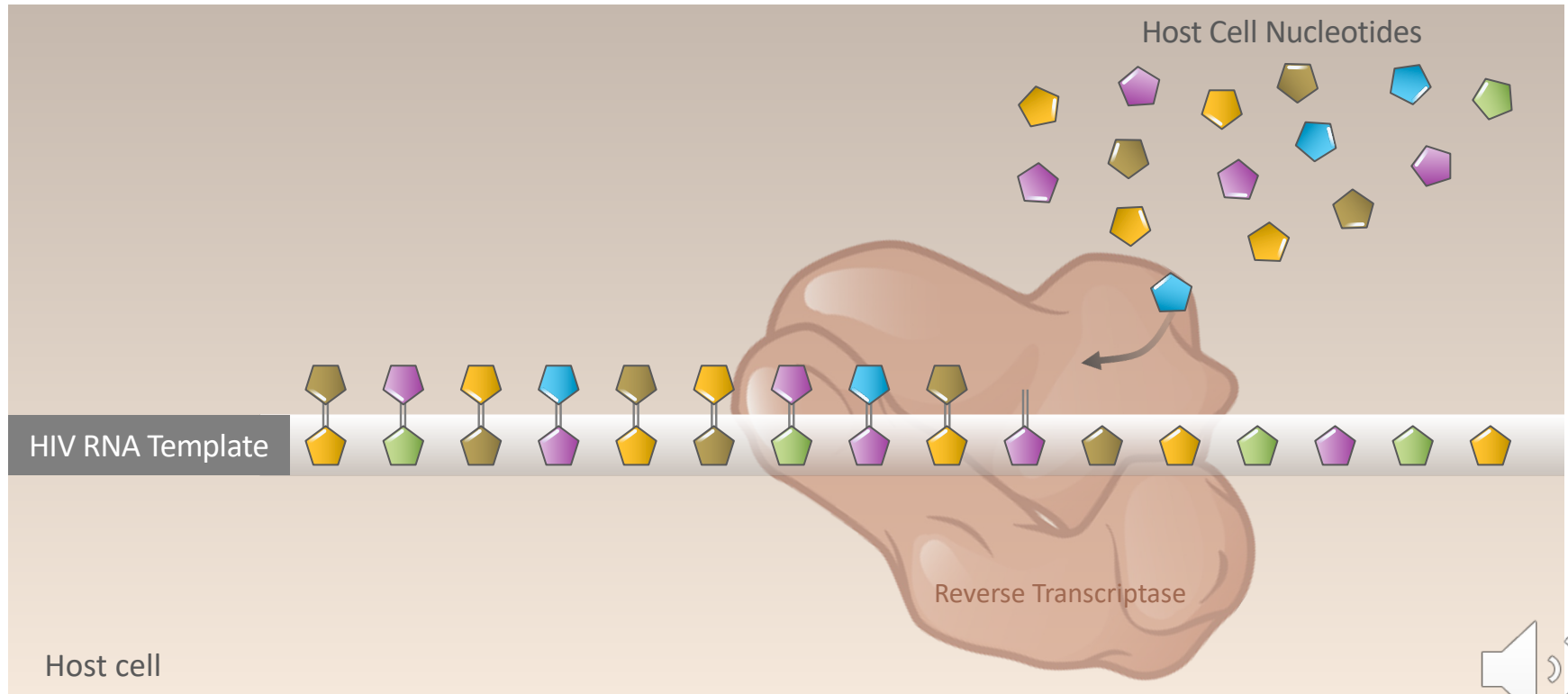
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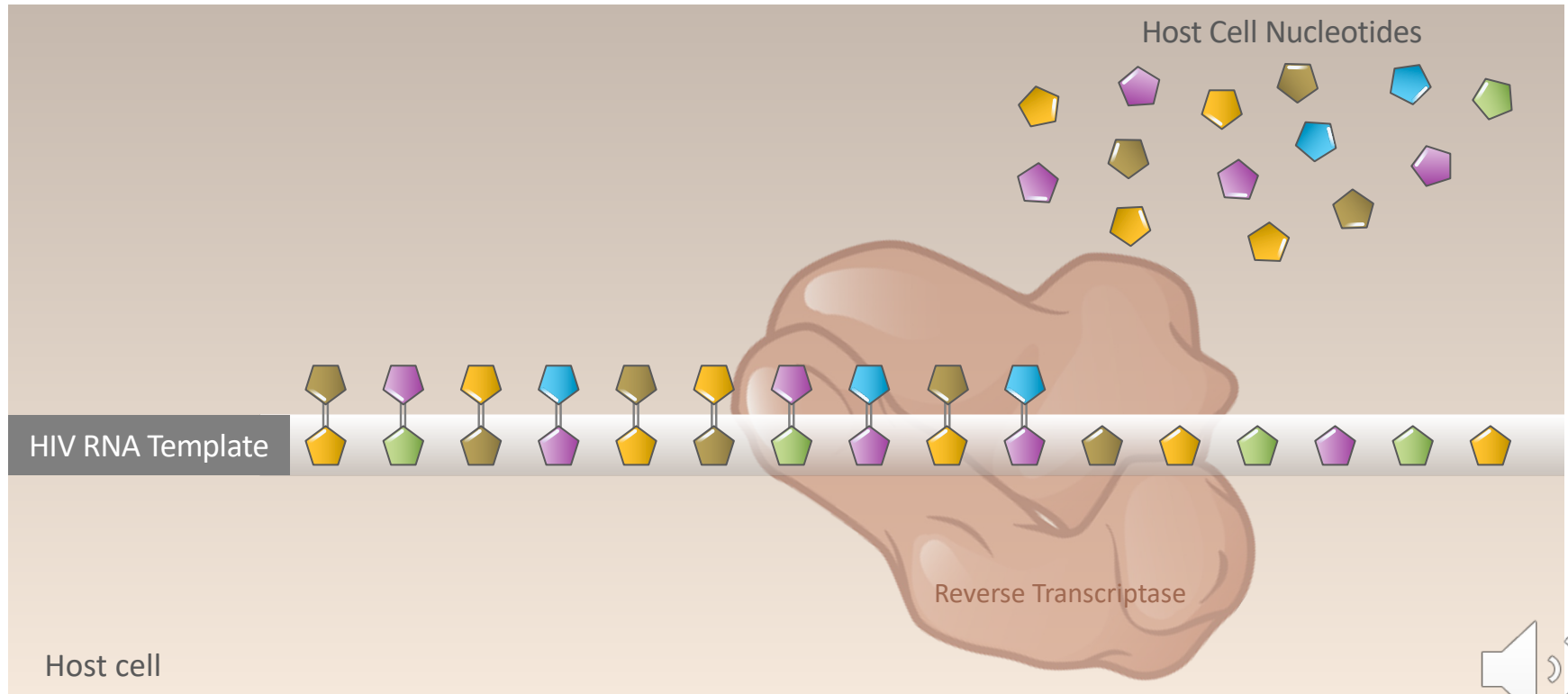
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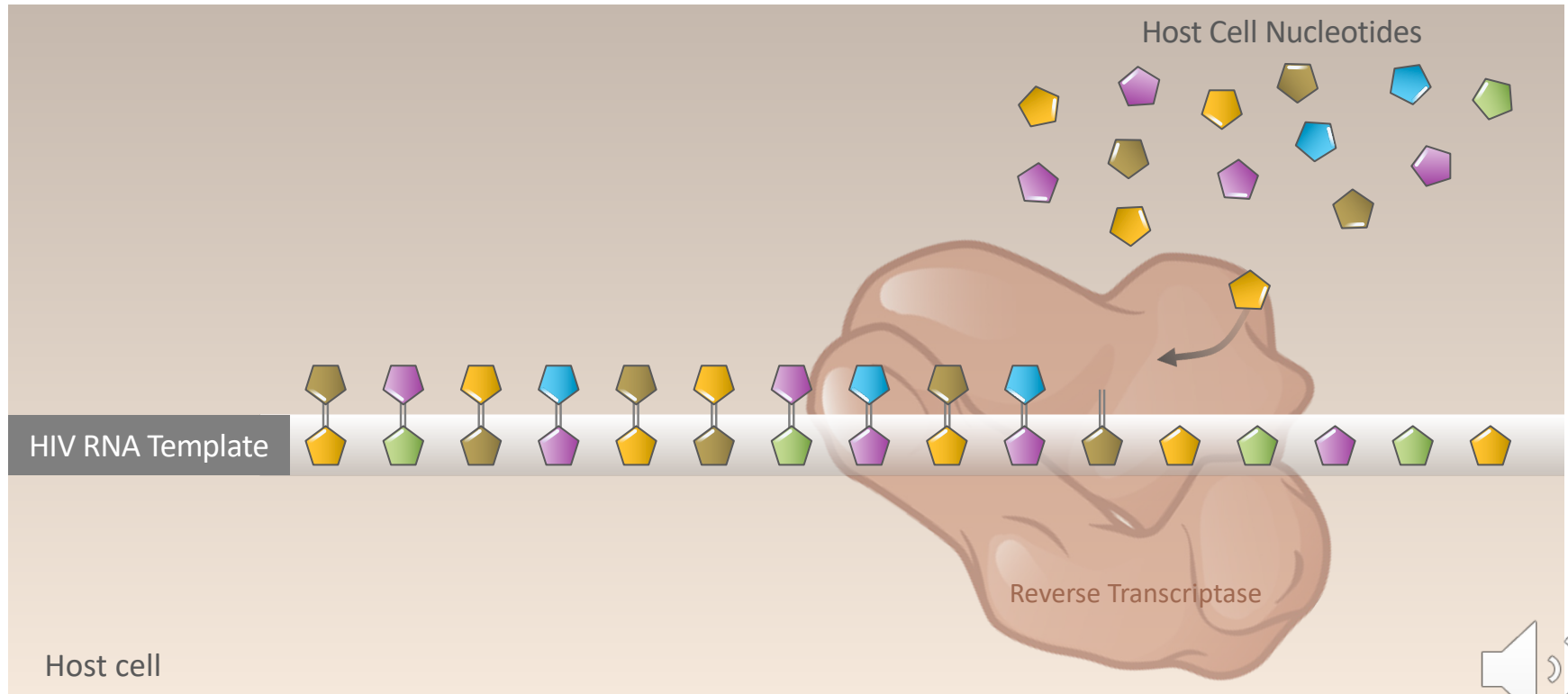
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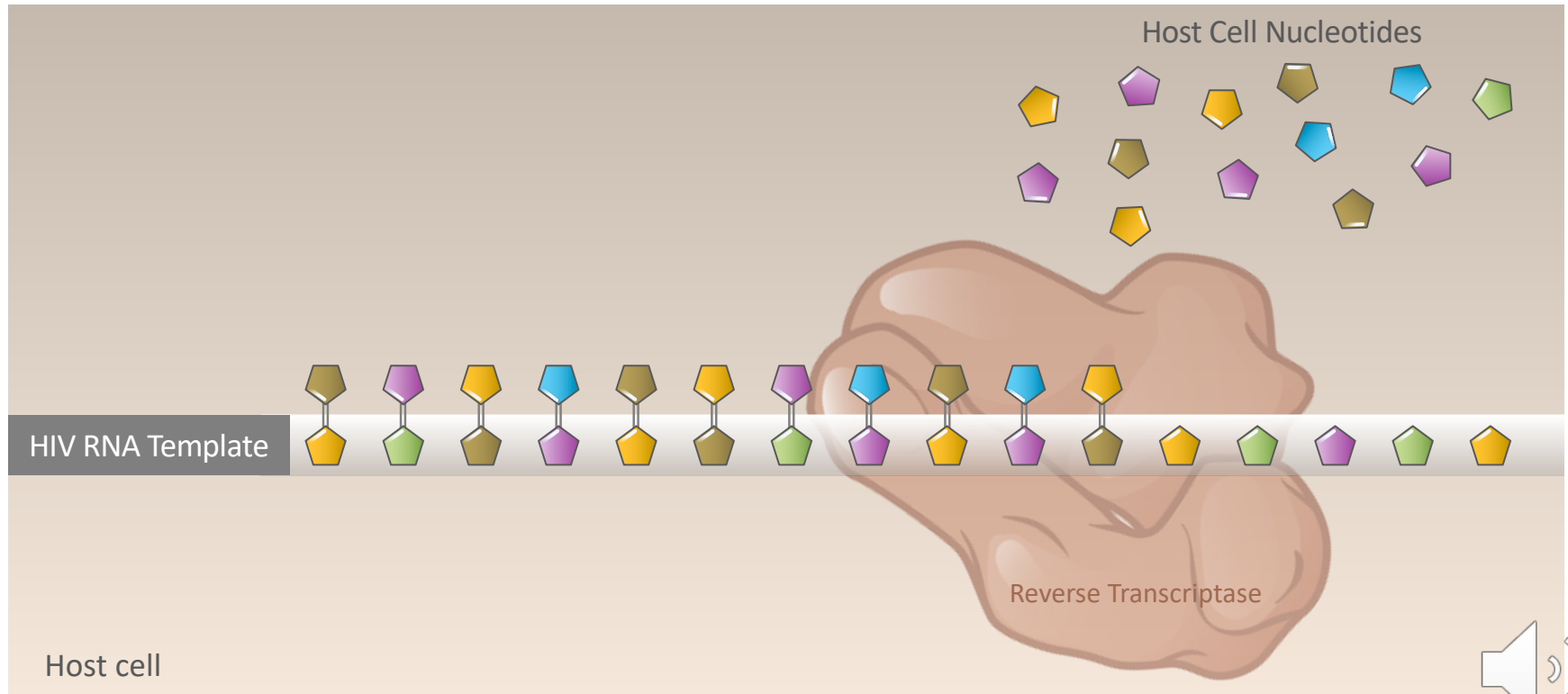
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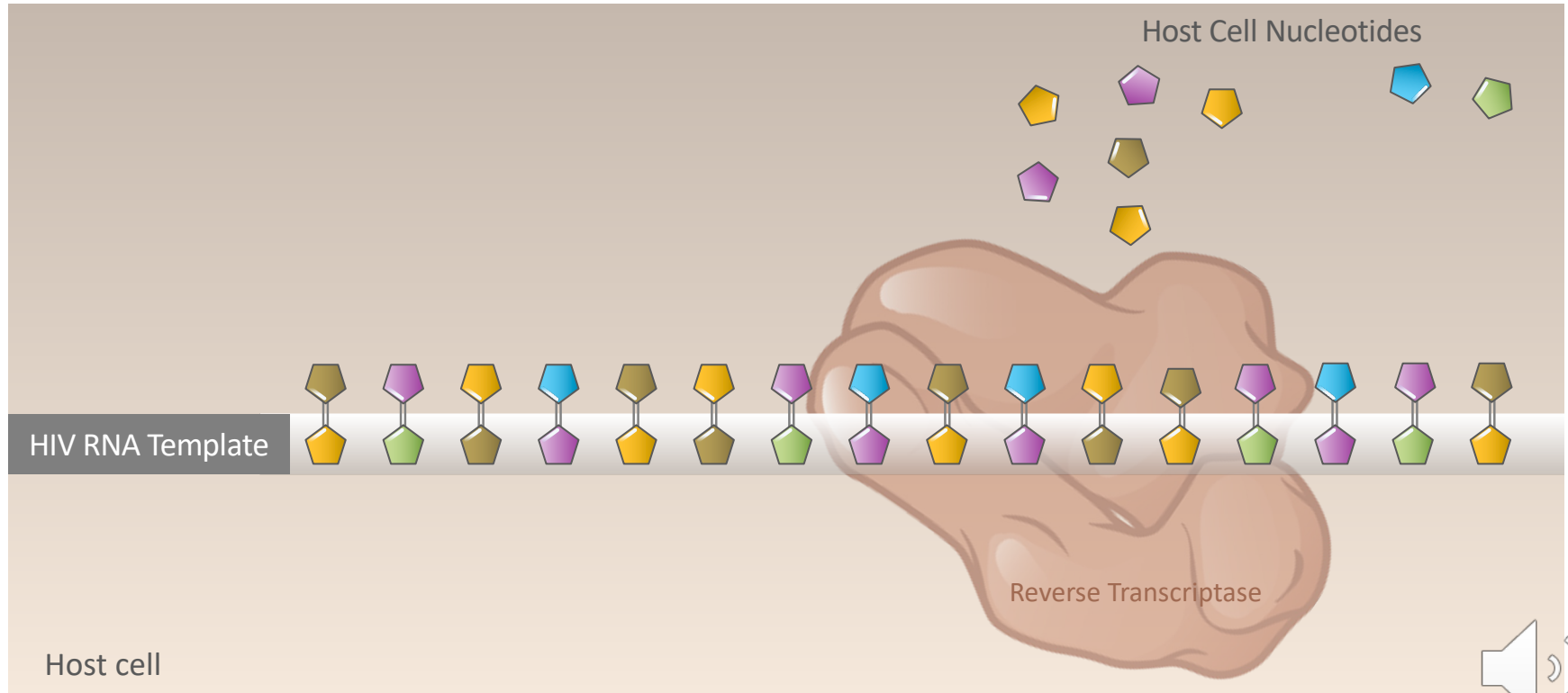
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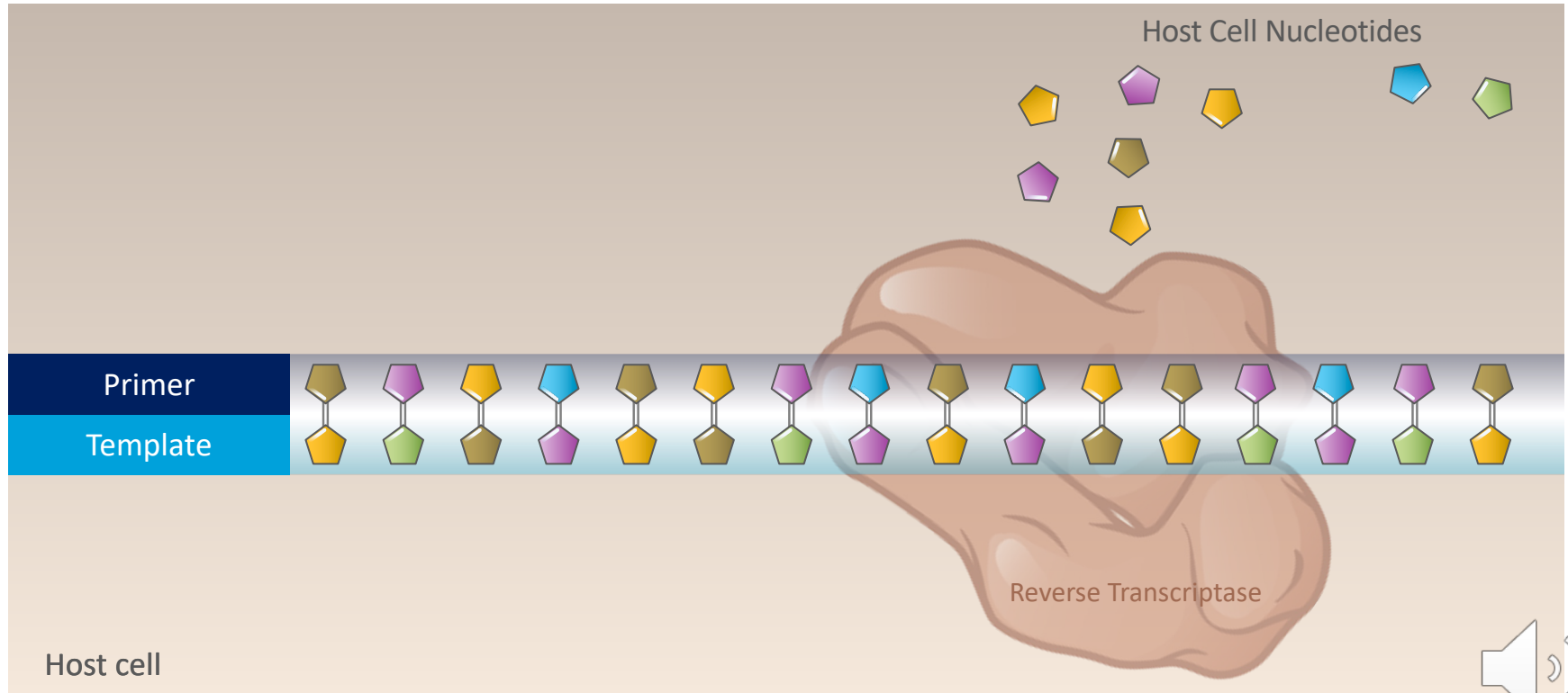
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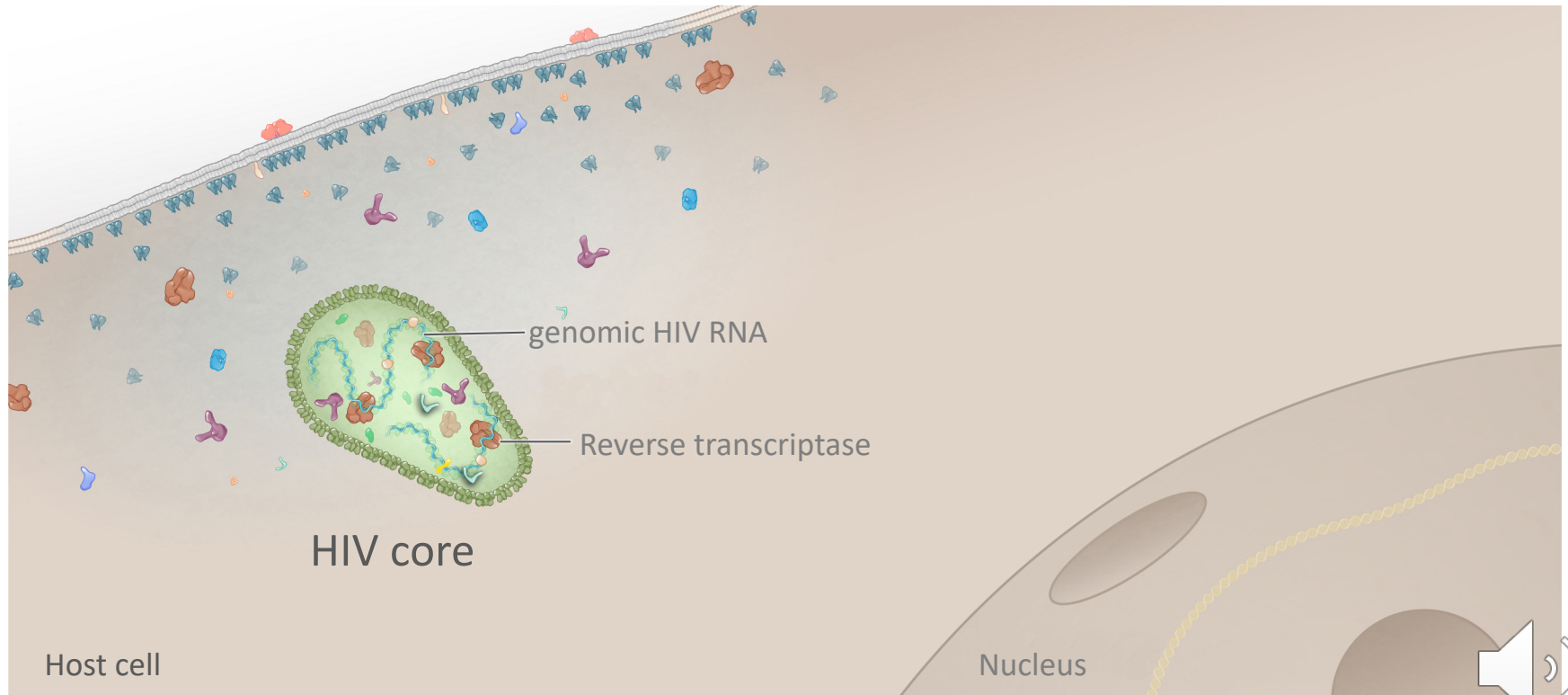
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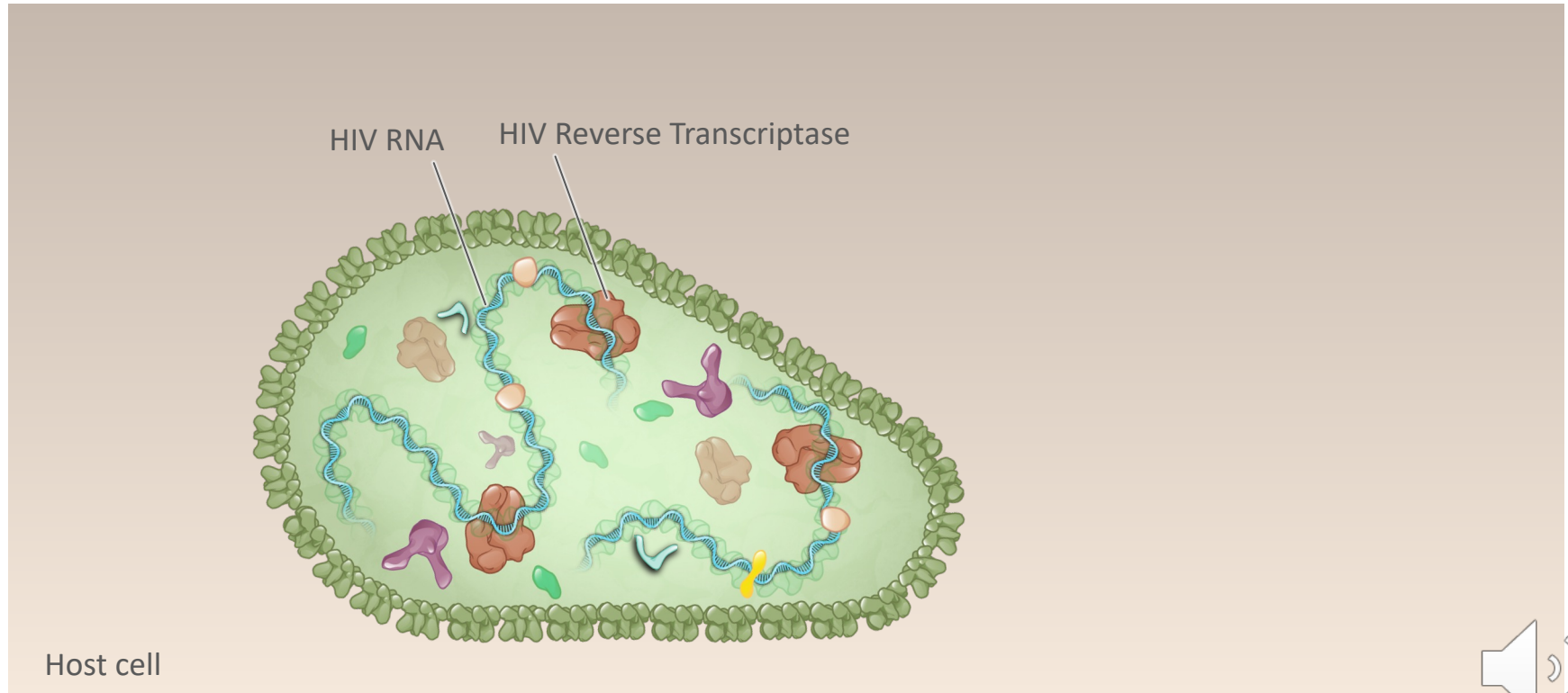
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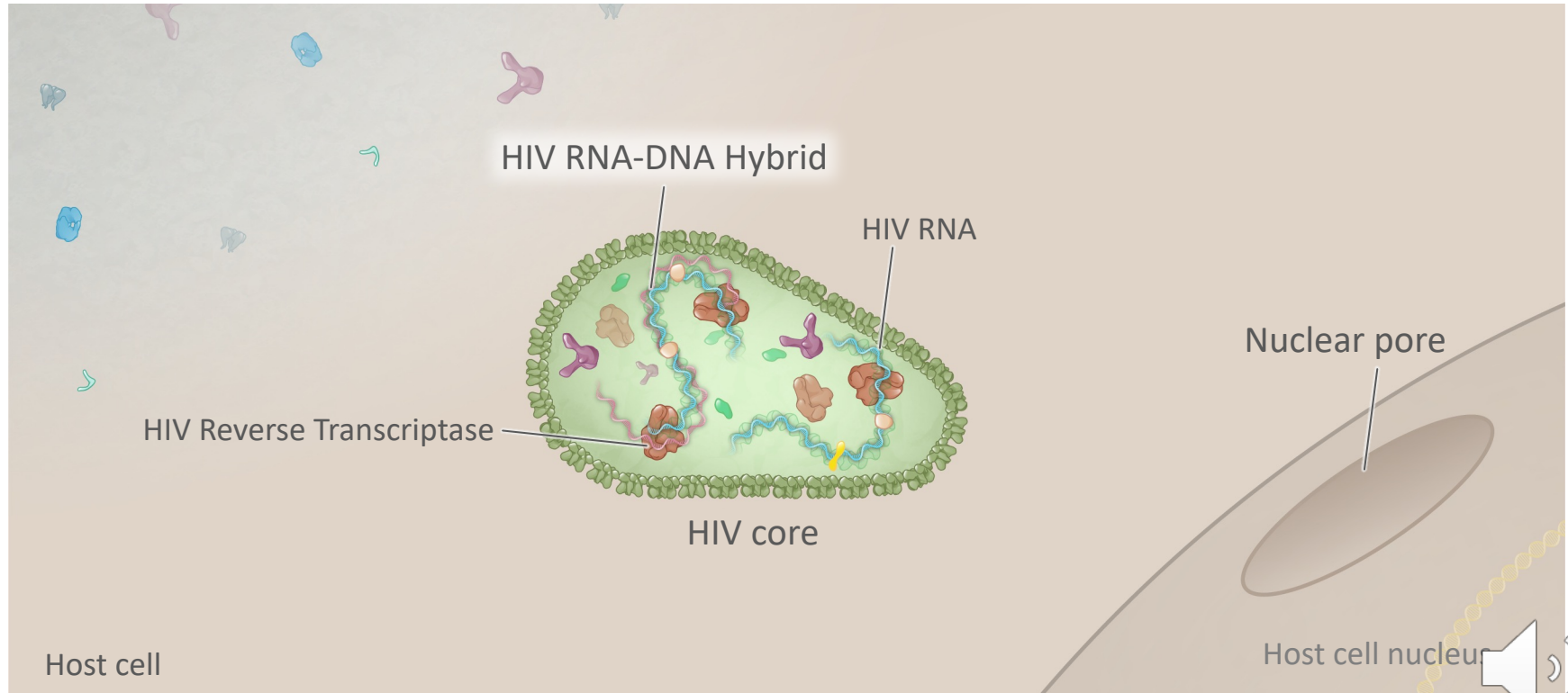
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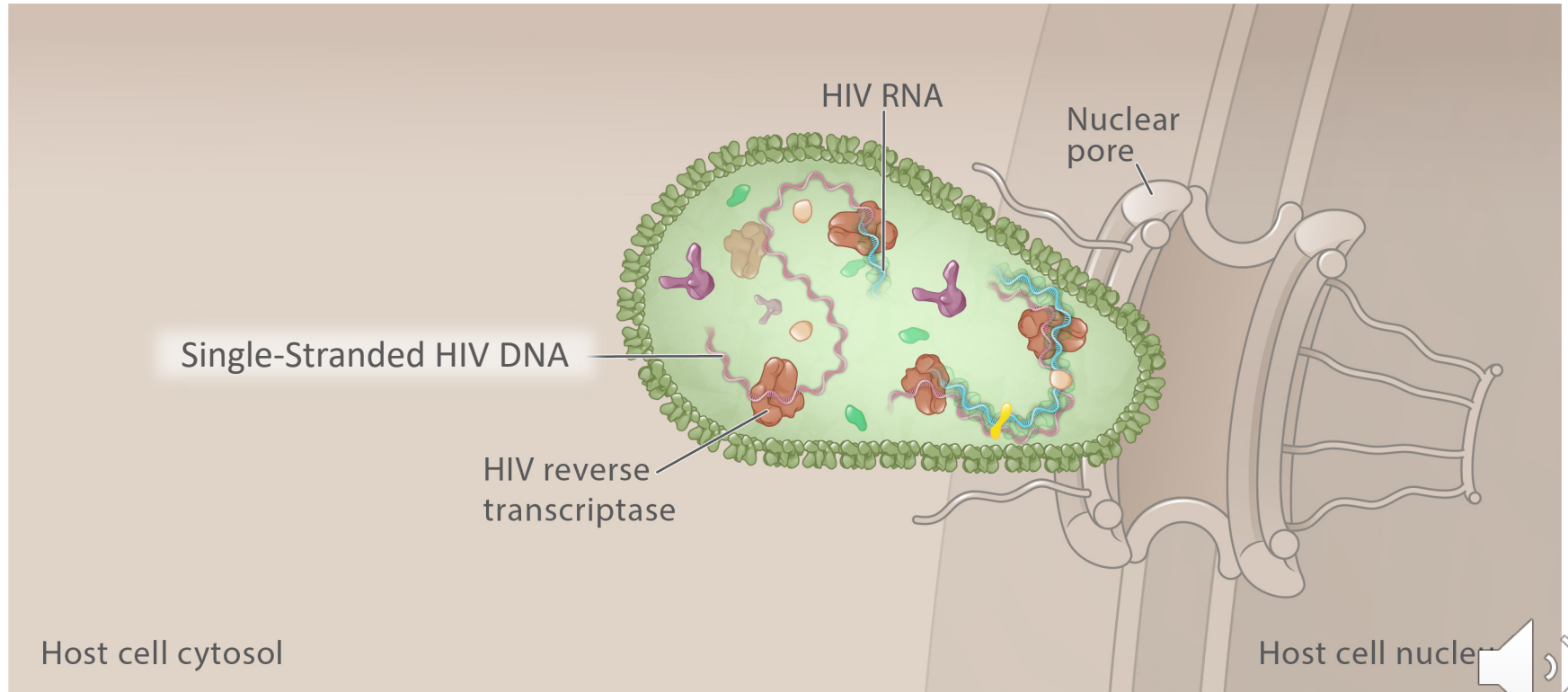
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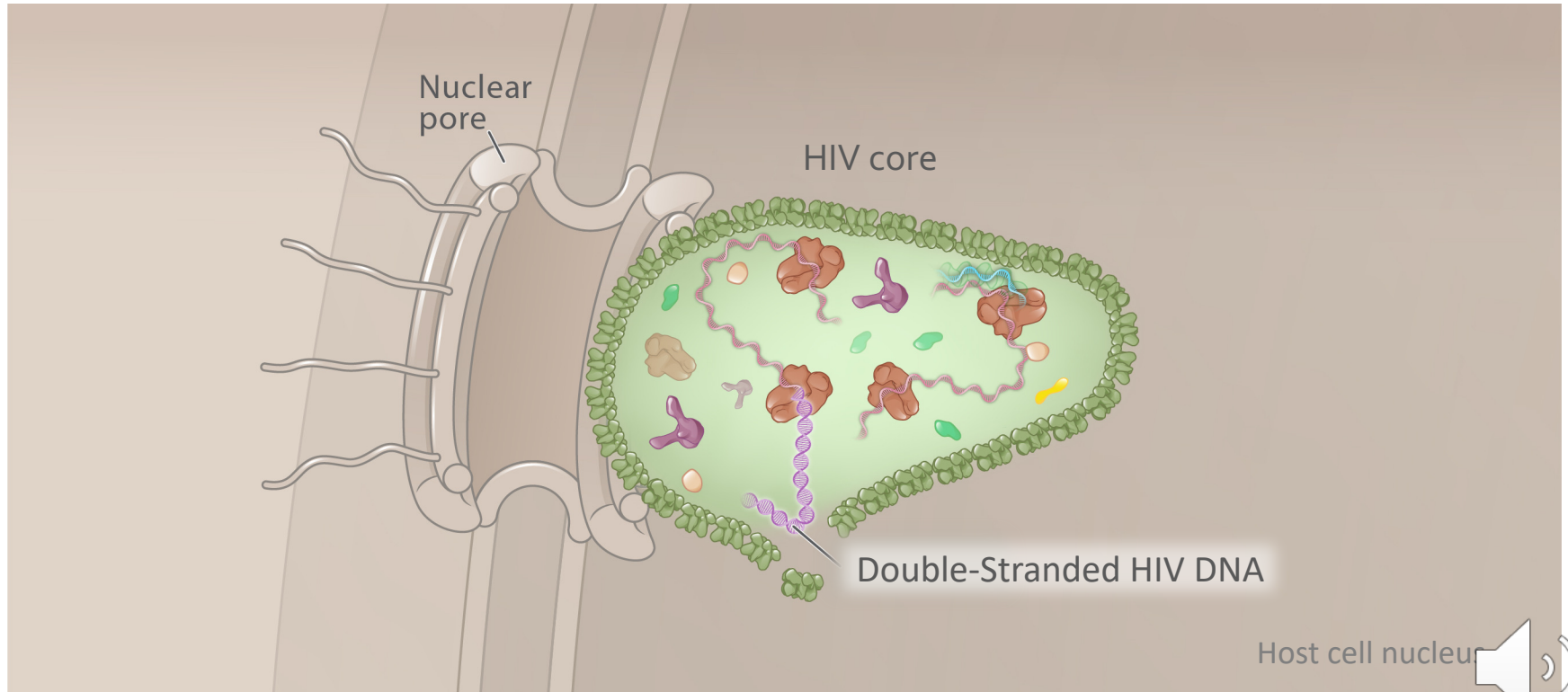
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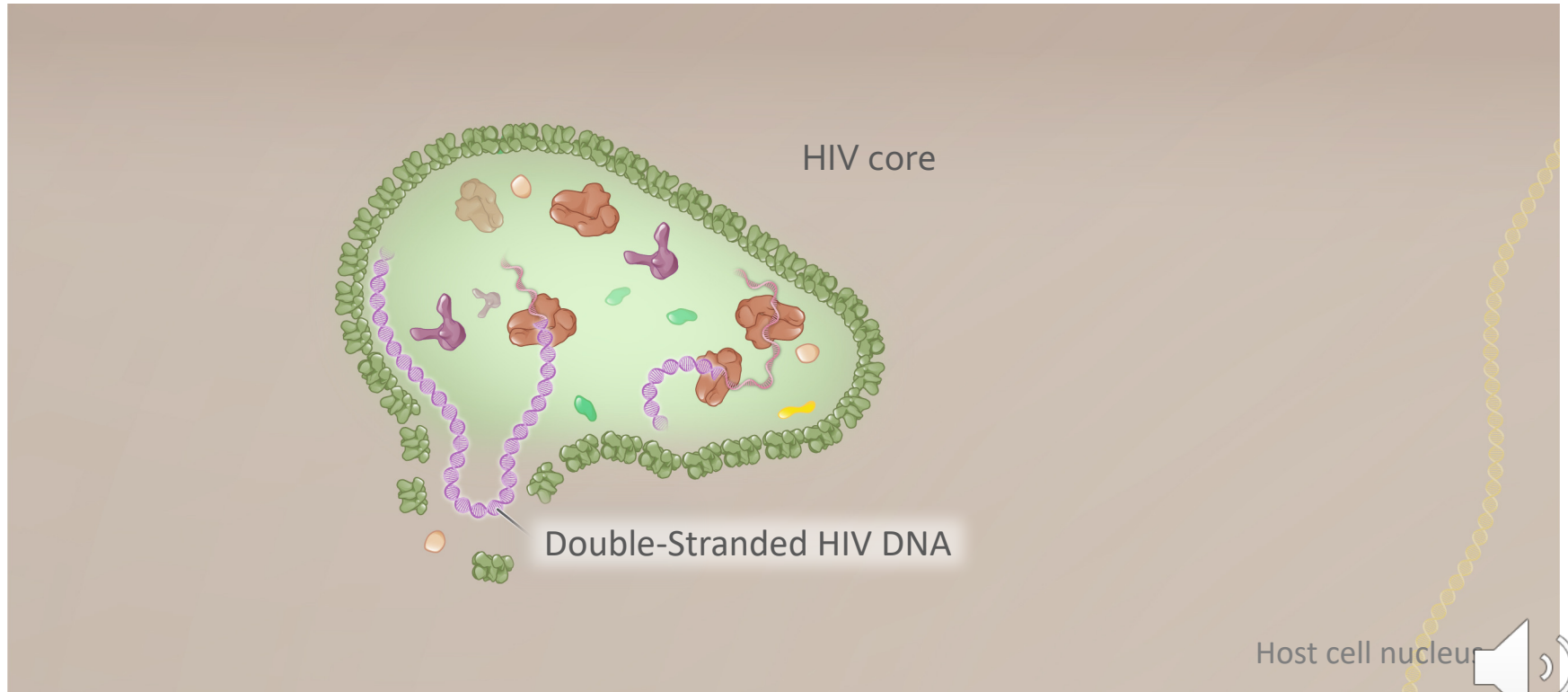
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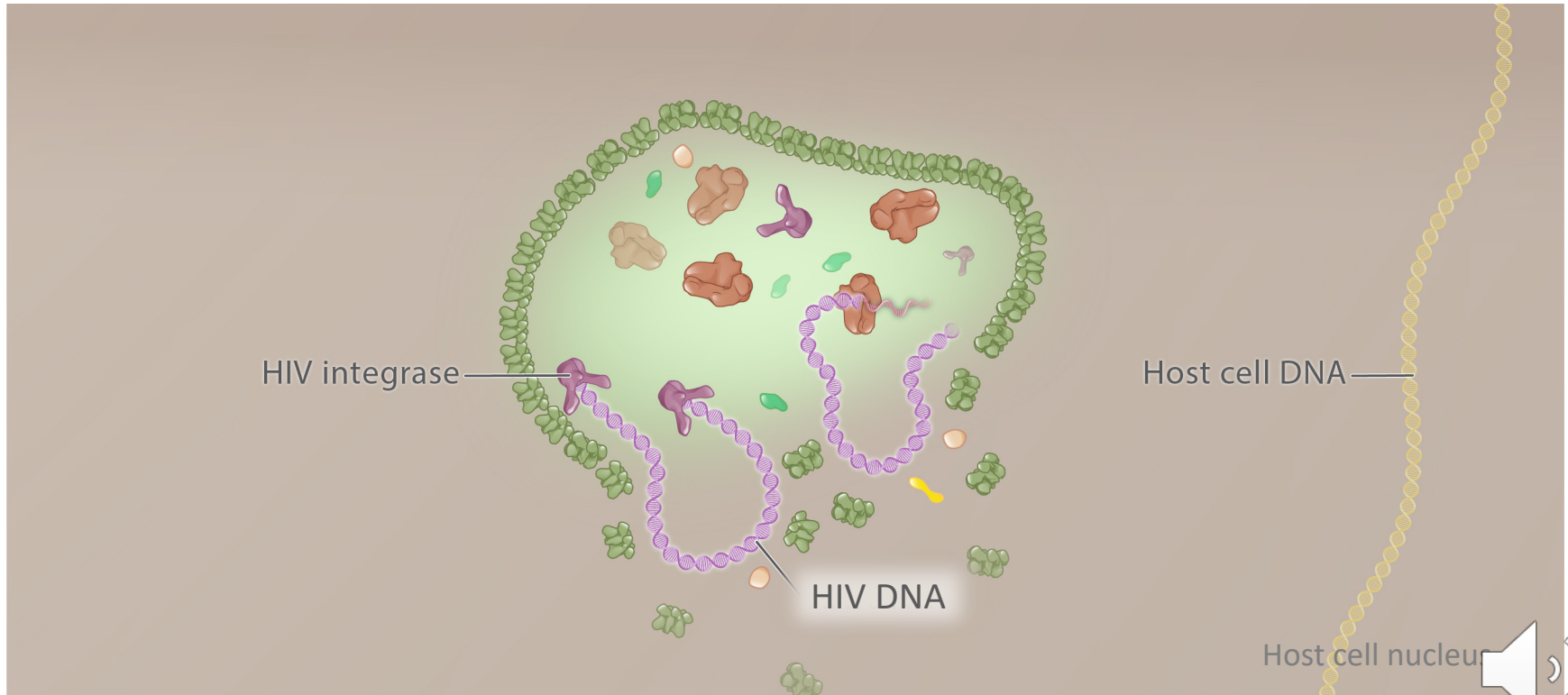
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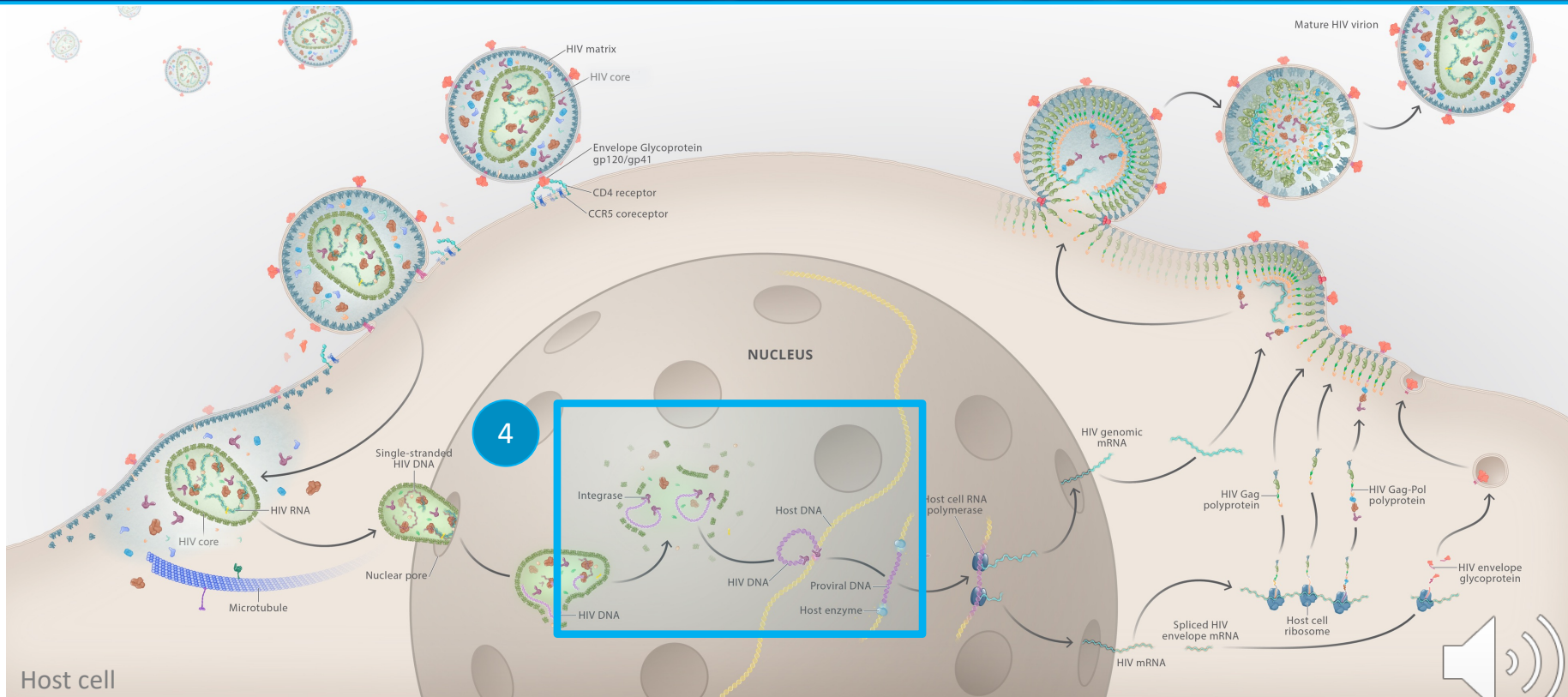
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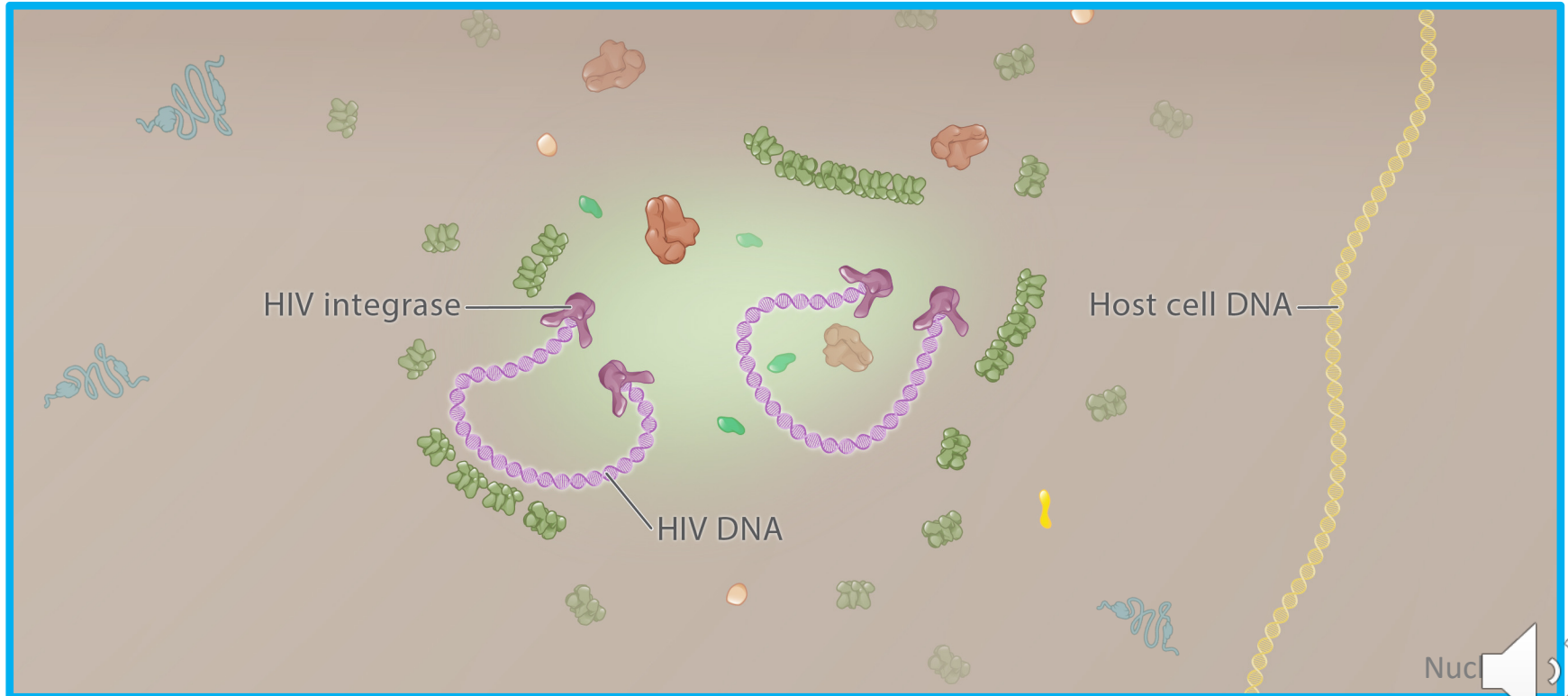
Nuclear Transport and Reverse Transcription



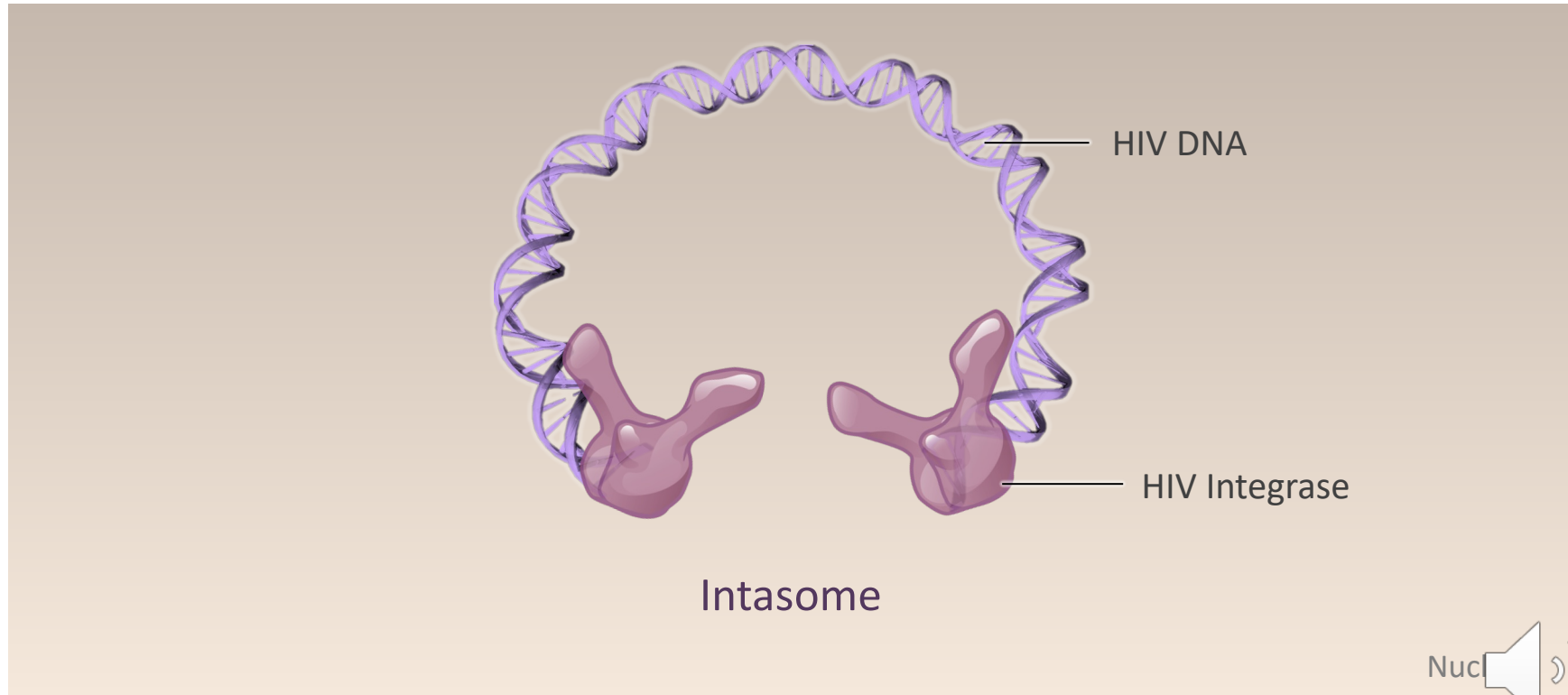
HIV Life Cycle Integration



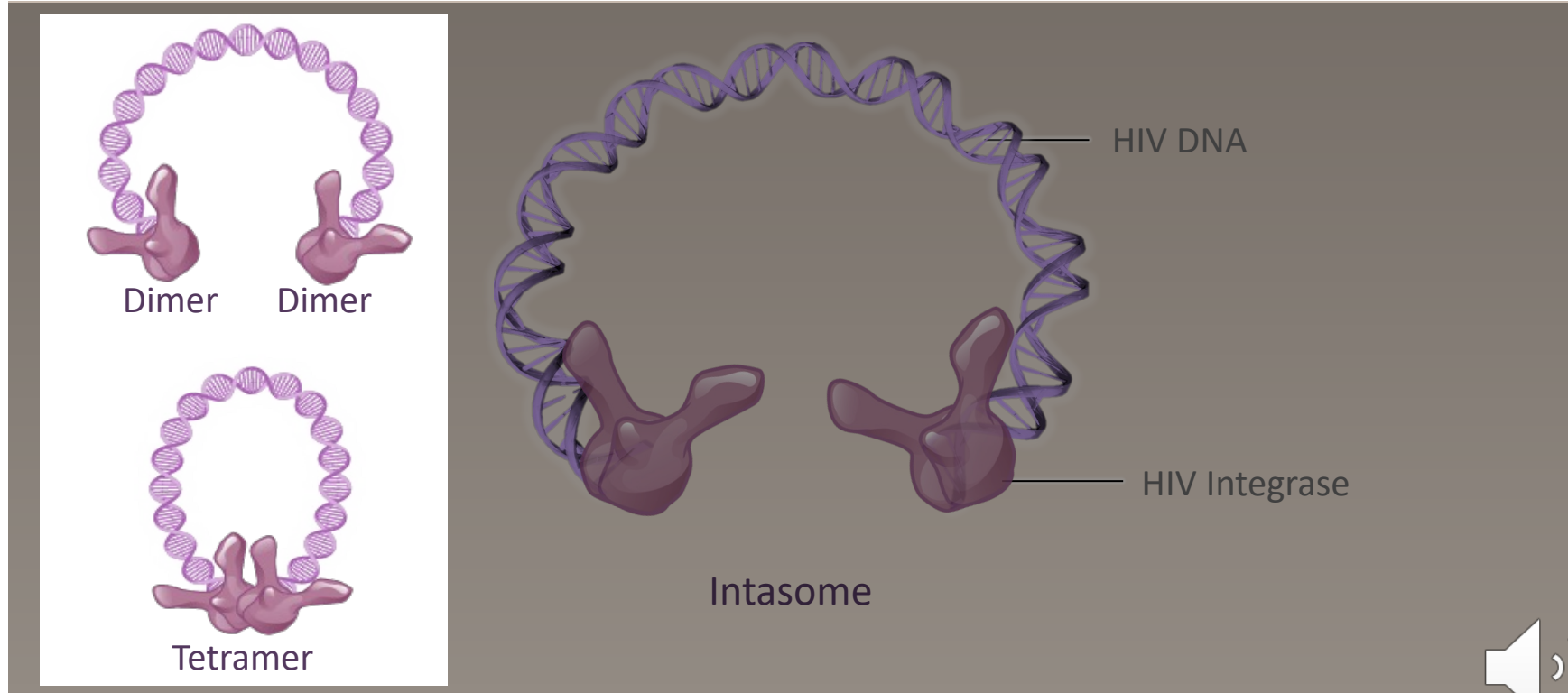
Integration



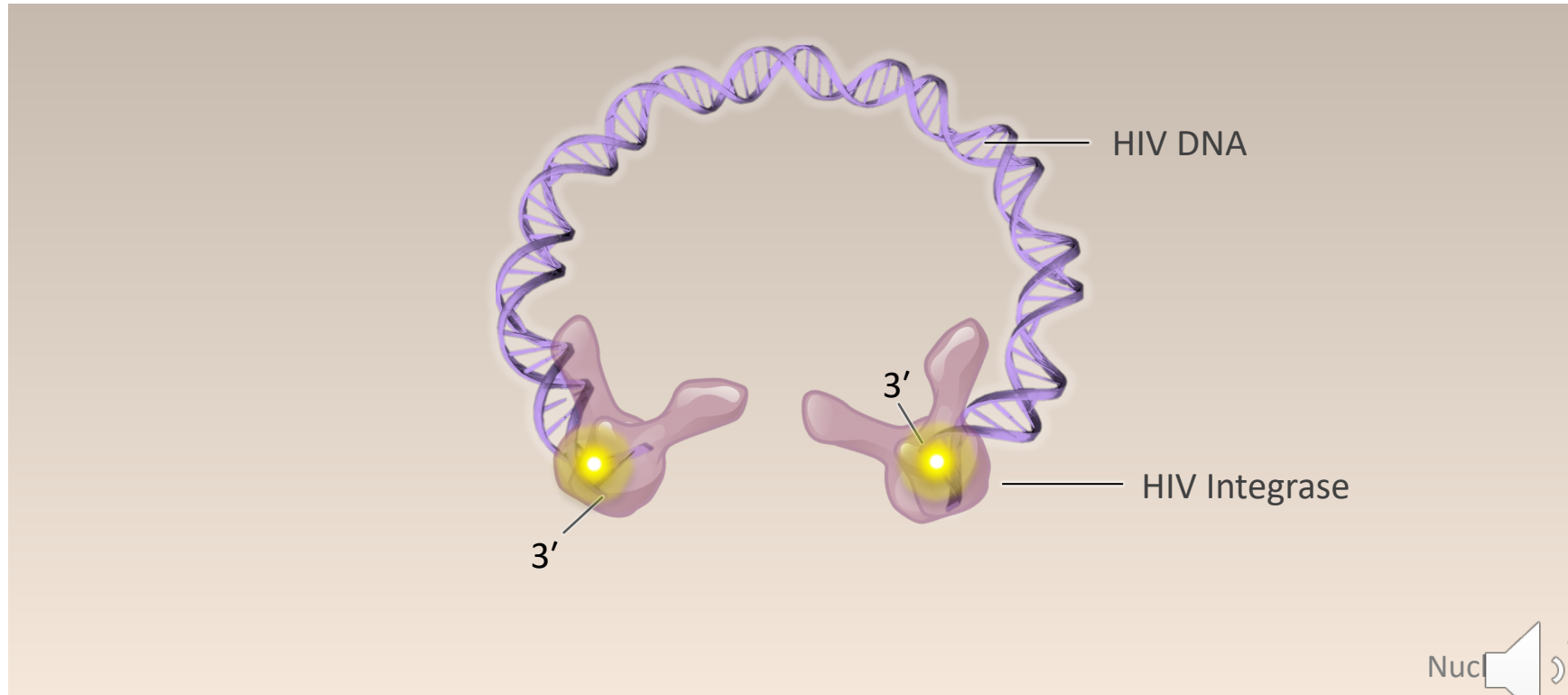
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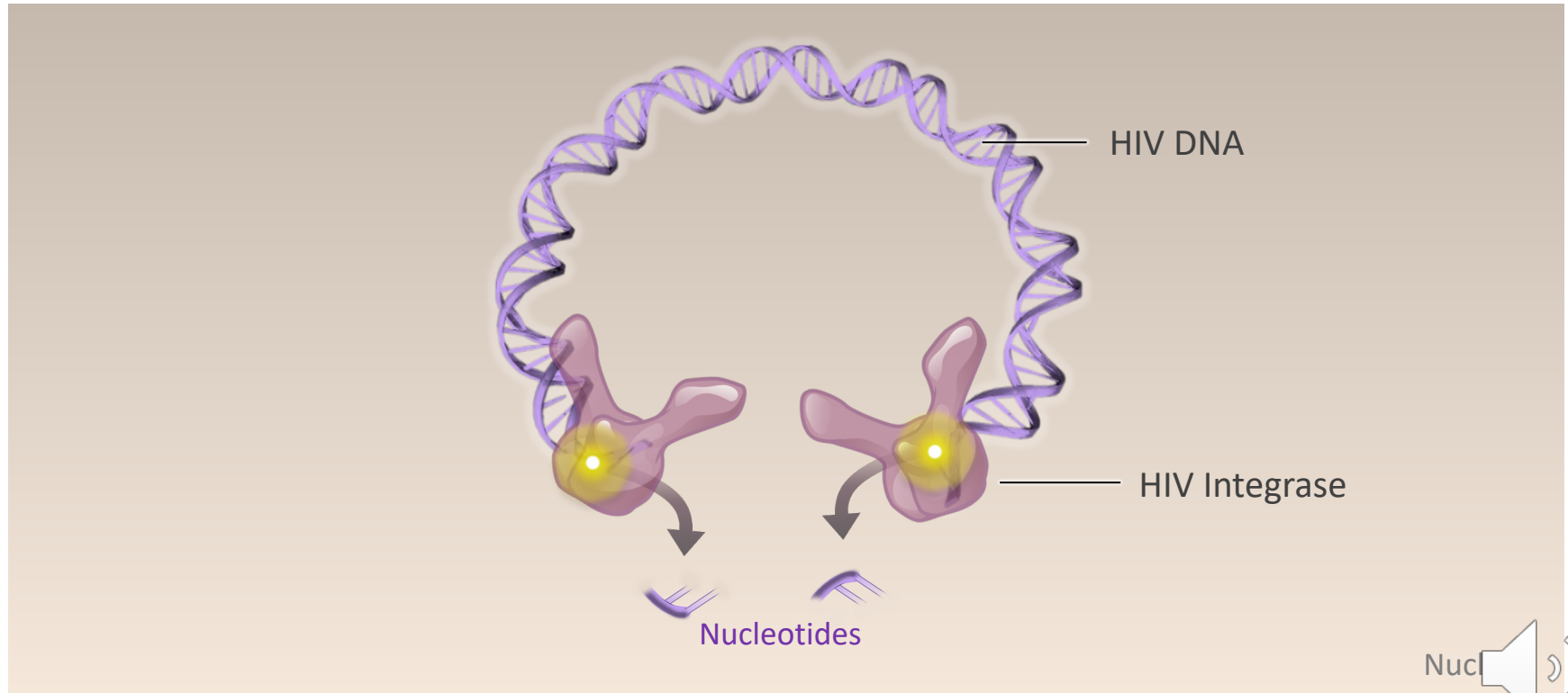
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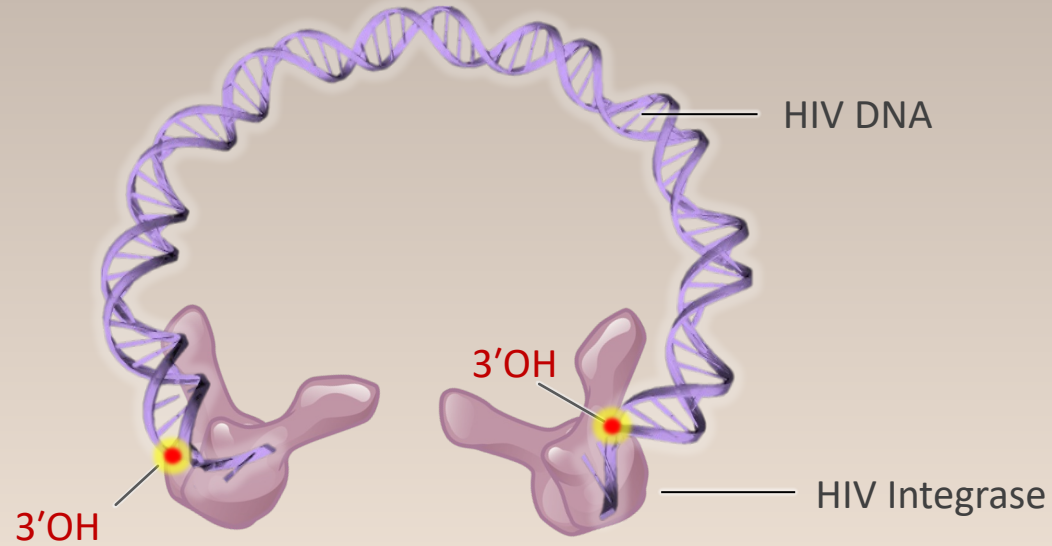
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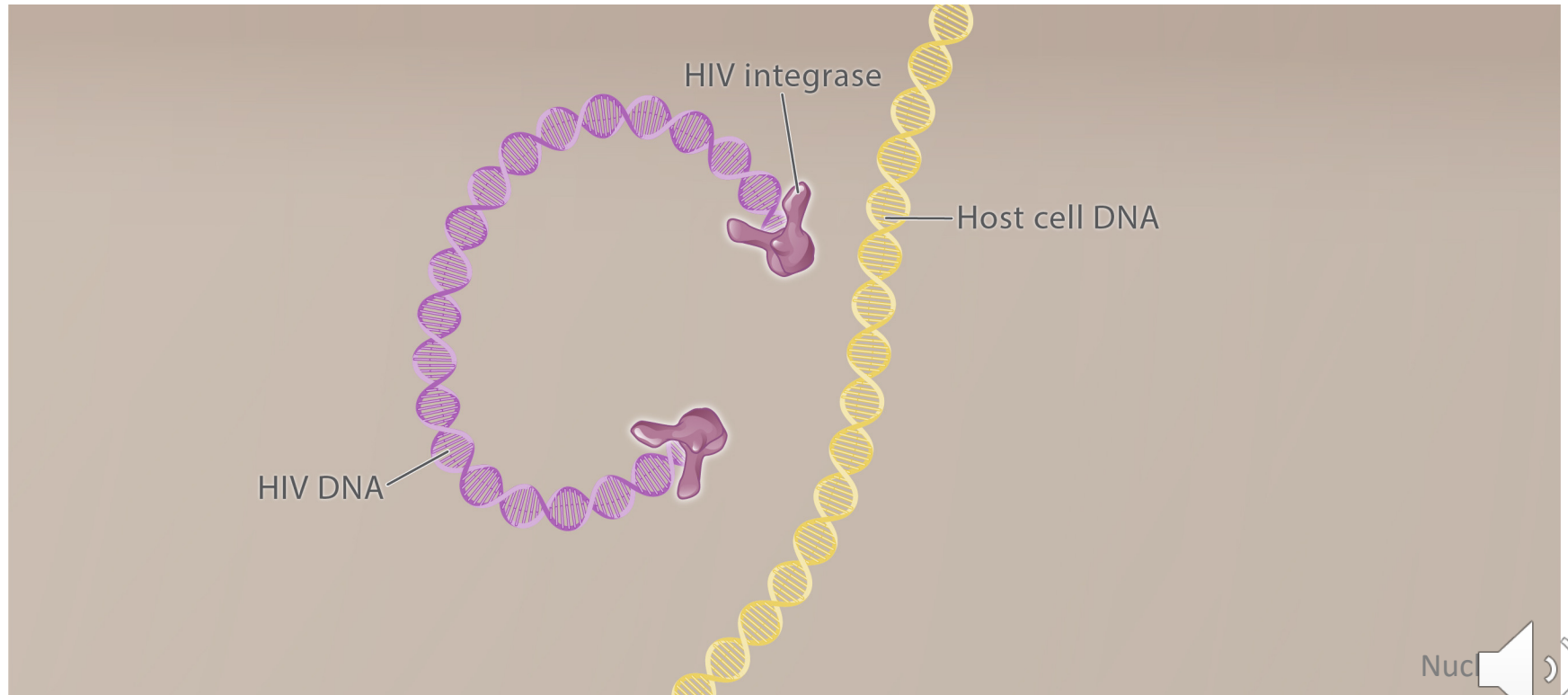
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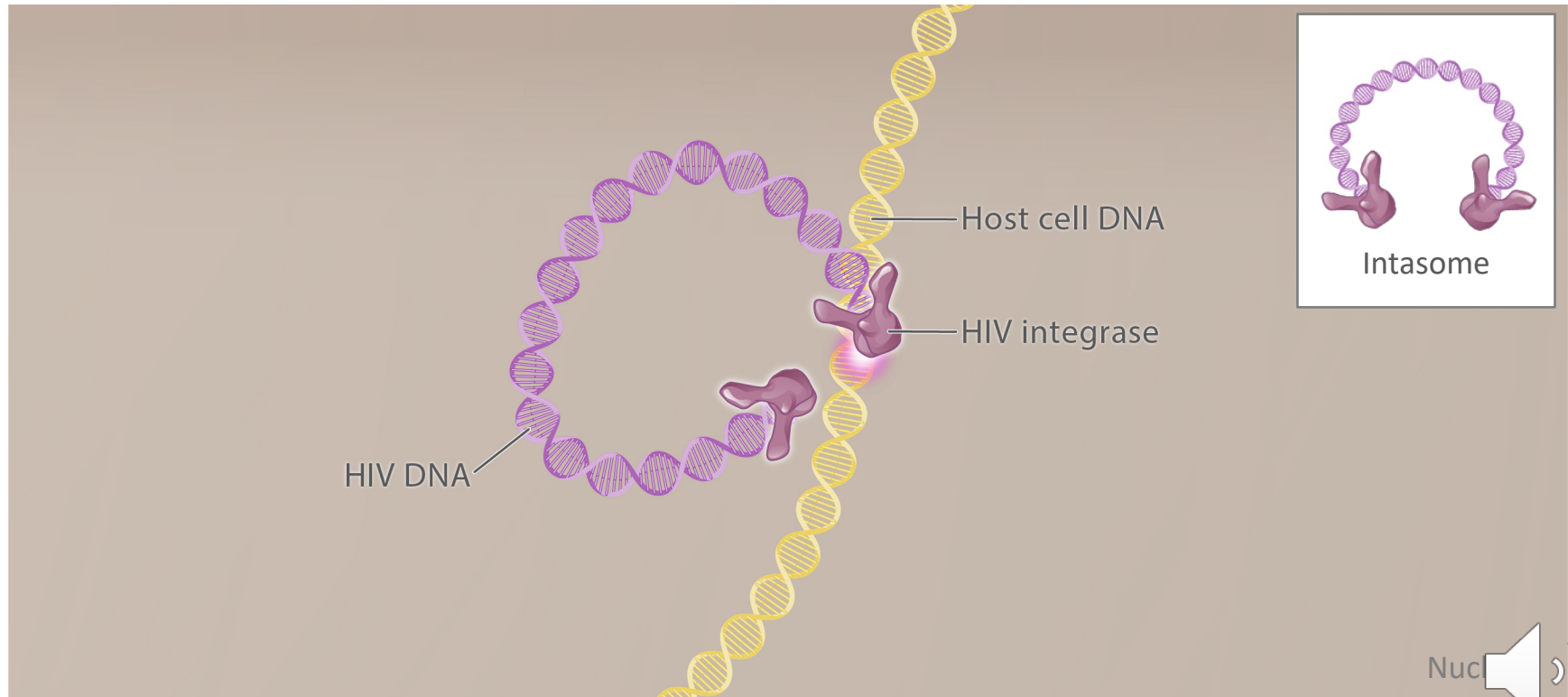
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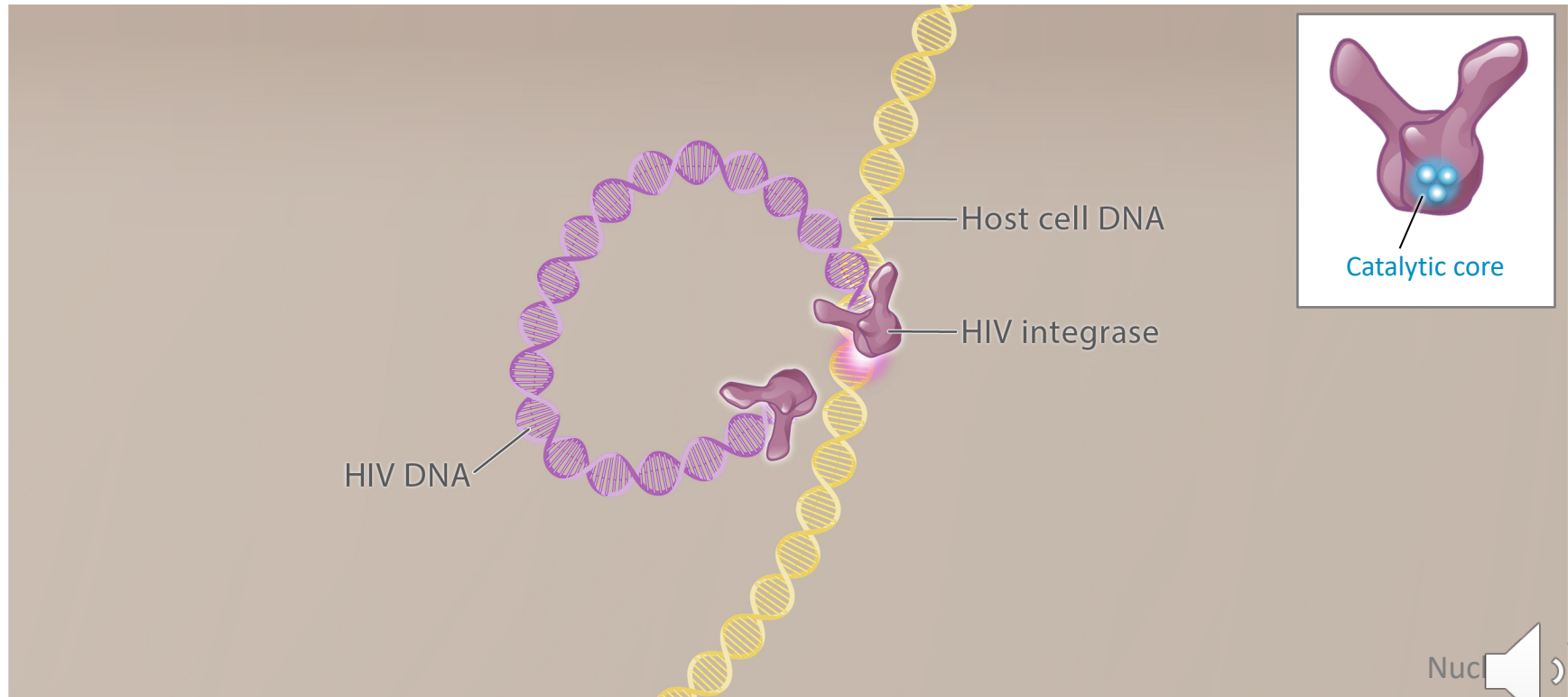
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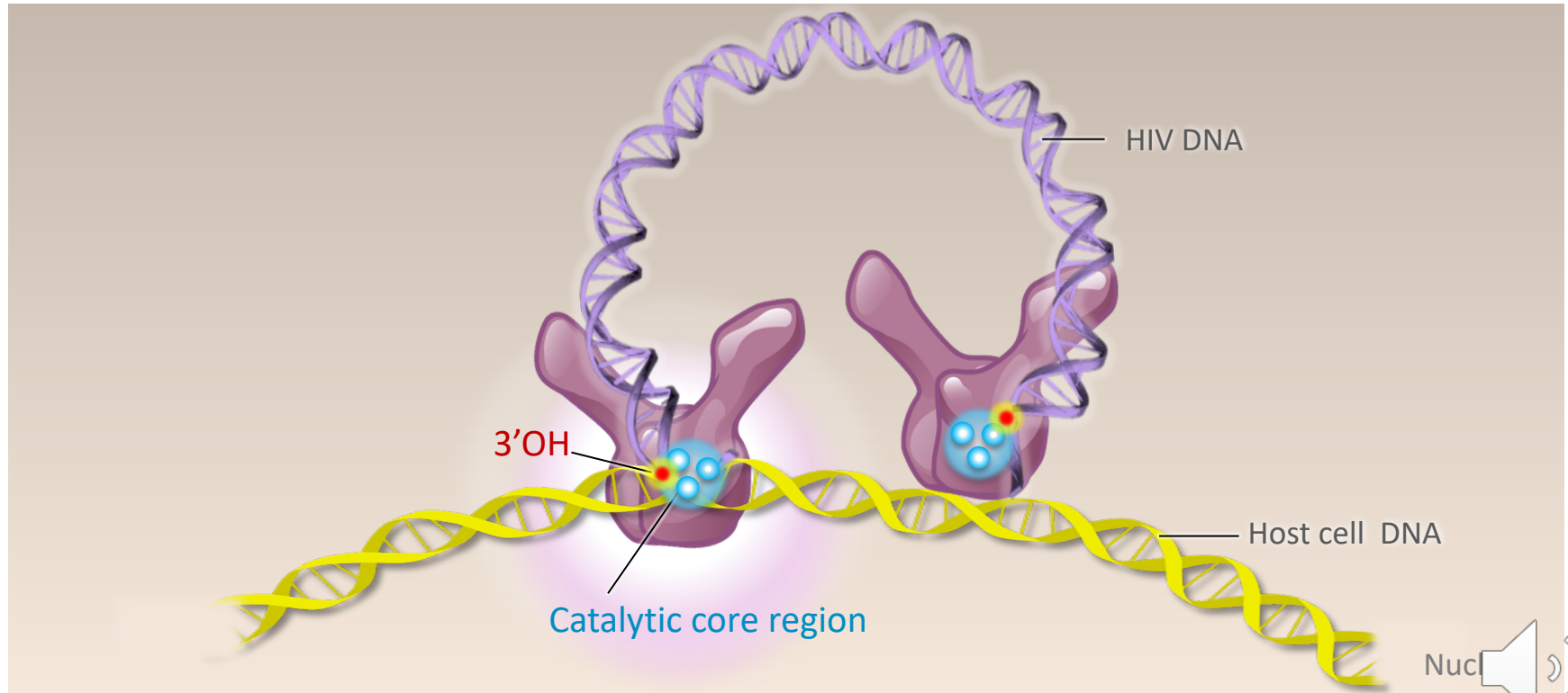
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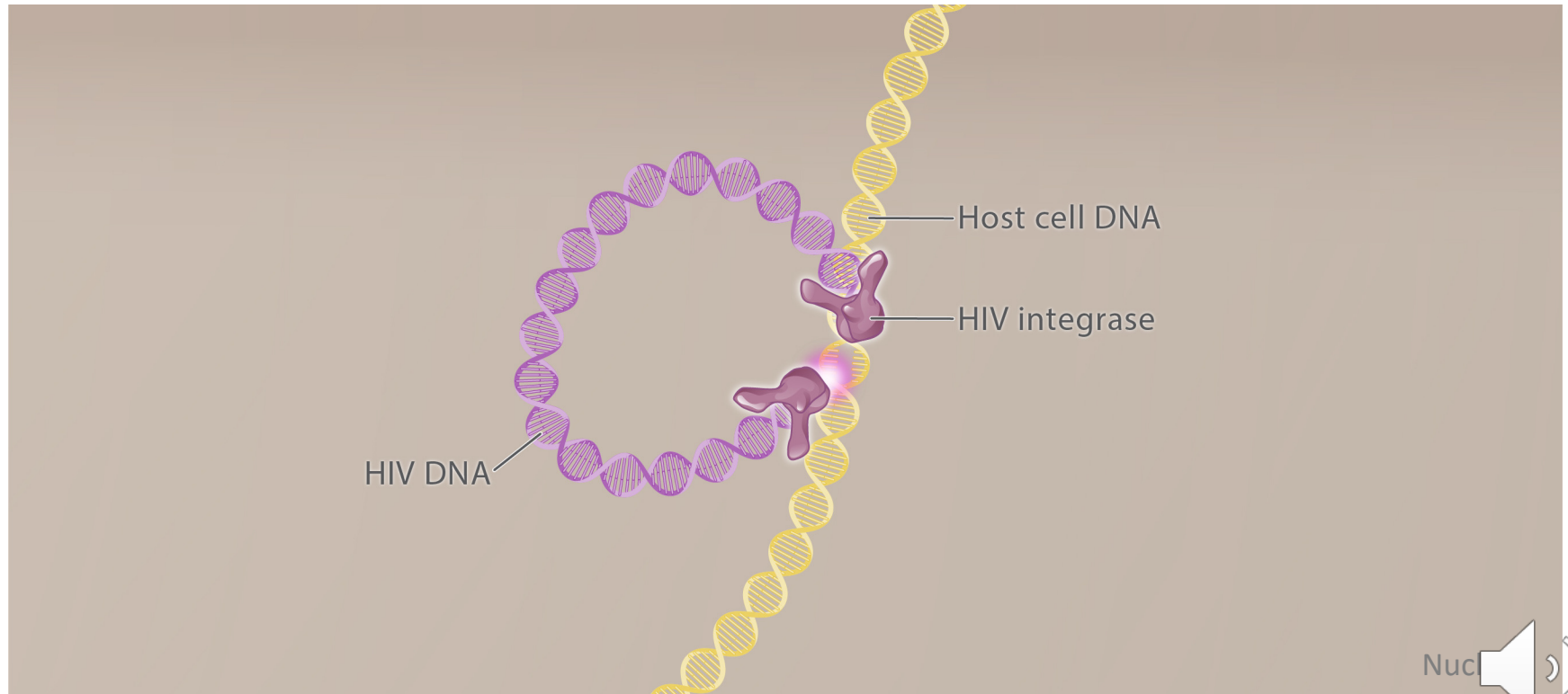
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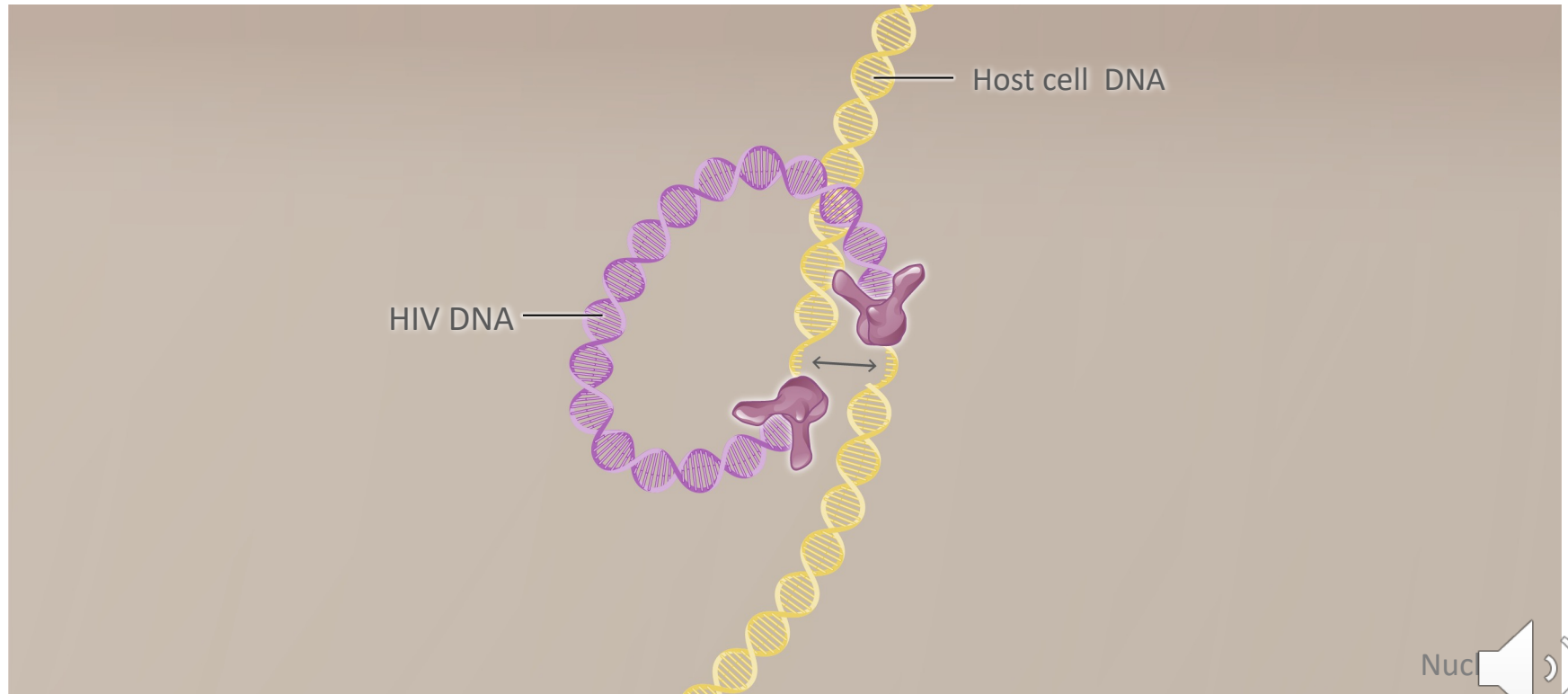
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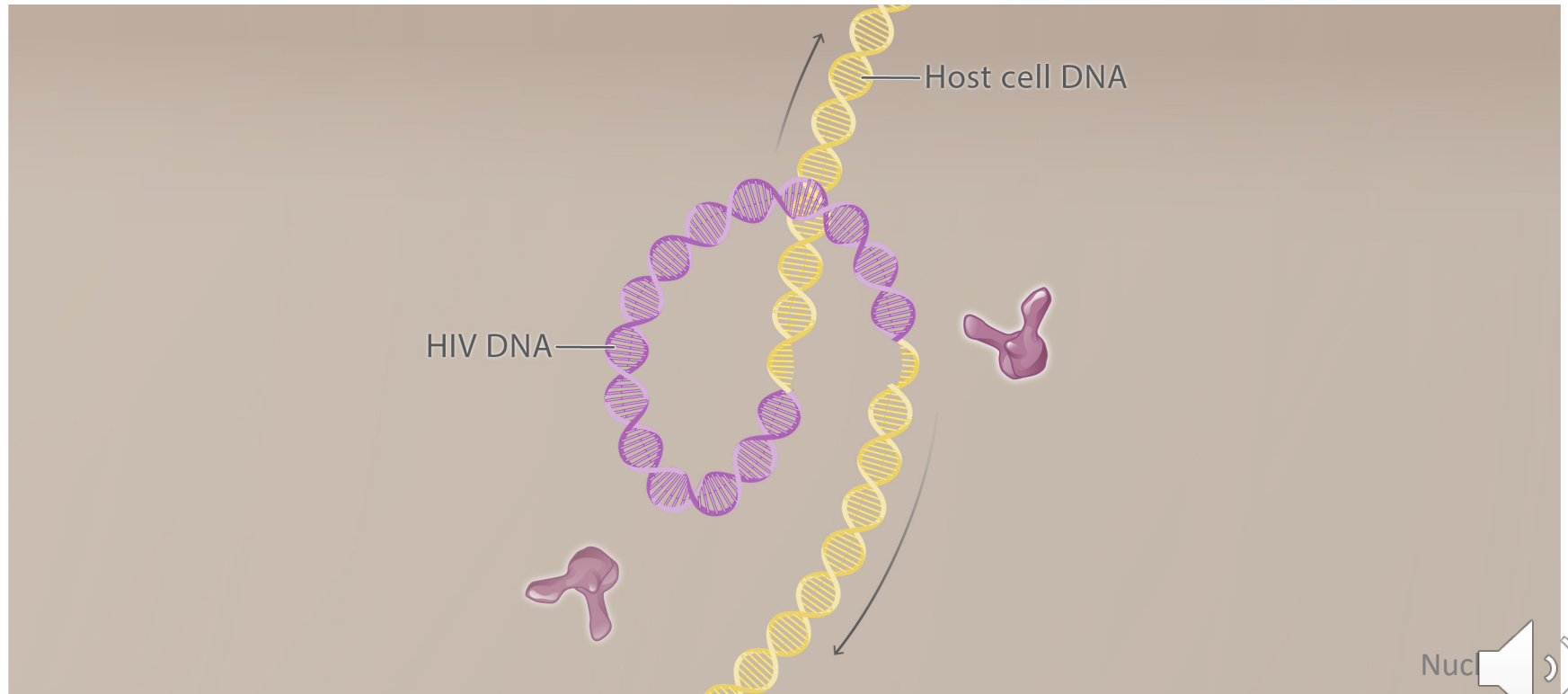
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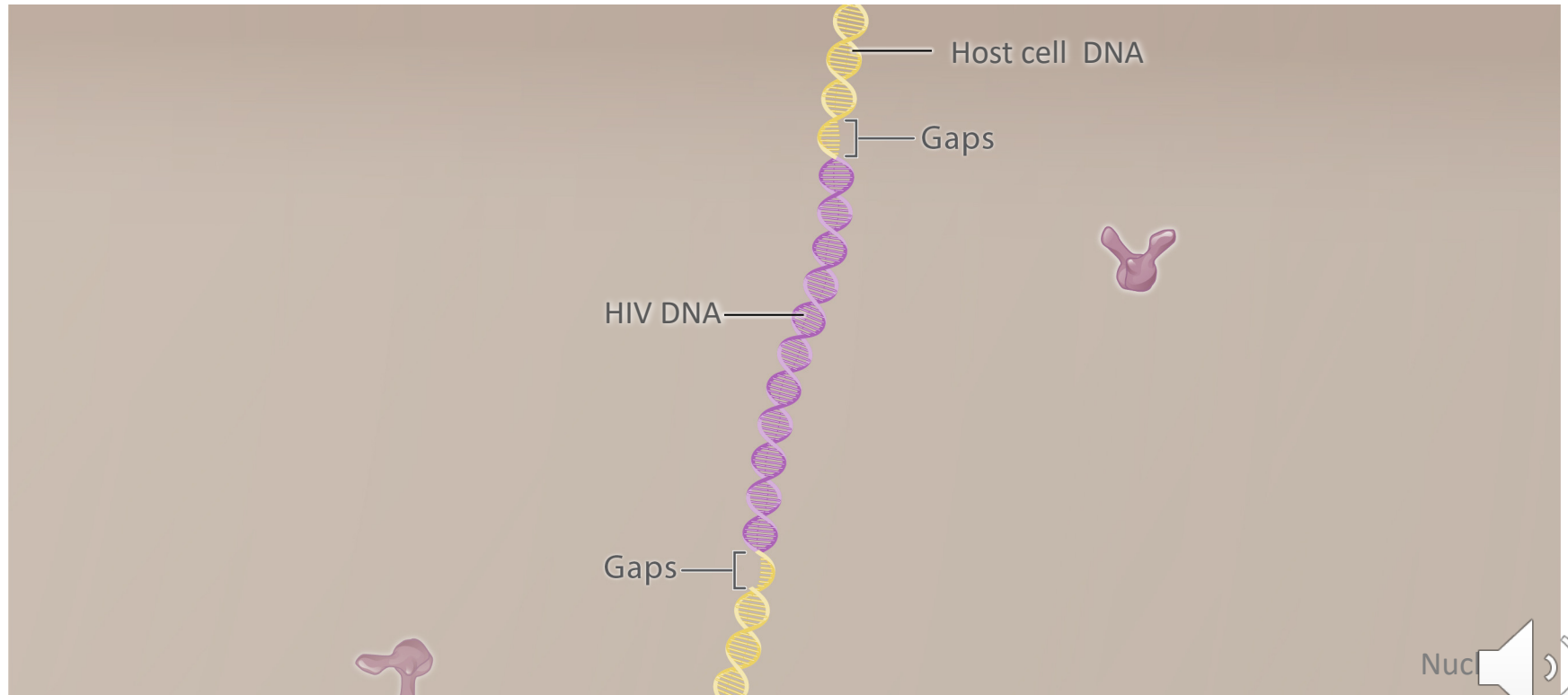
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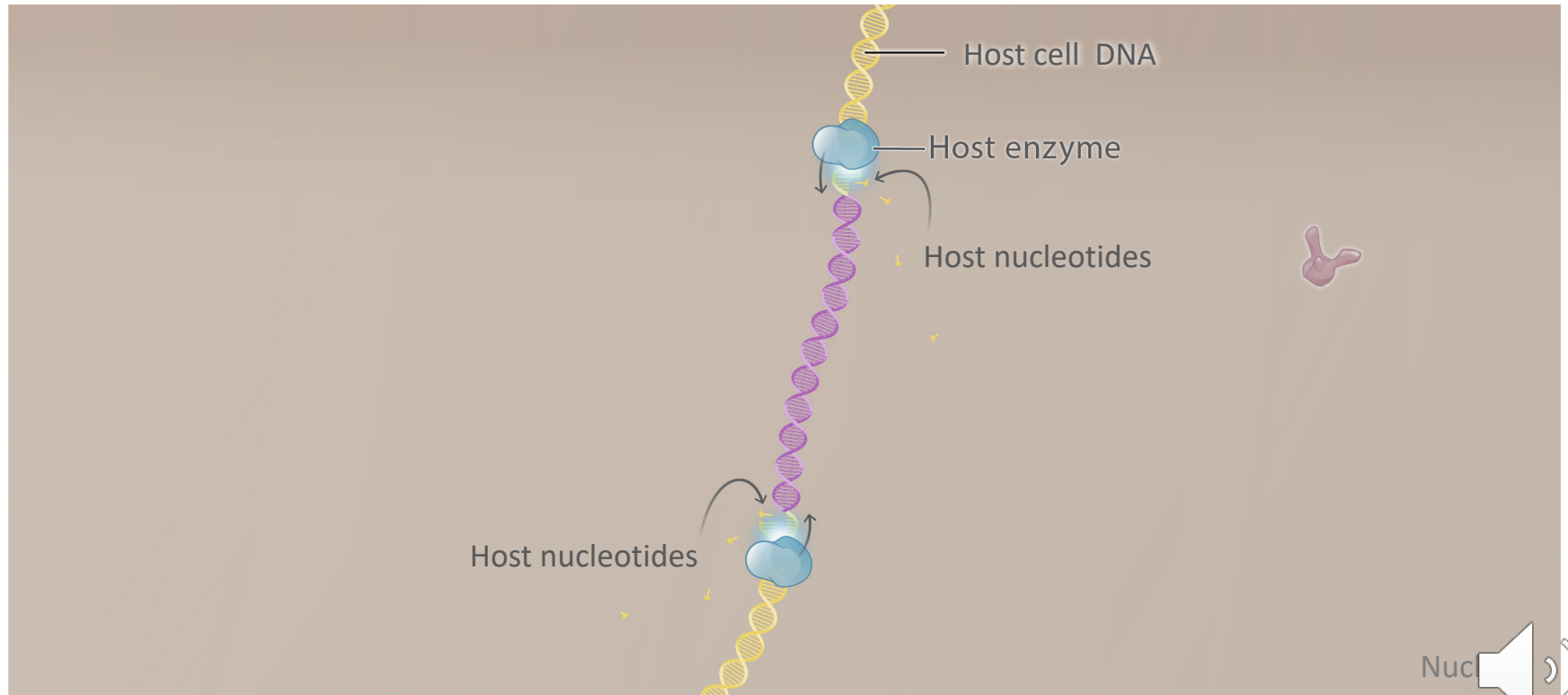
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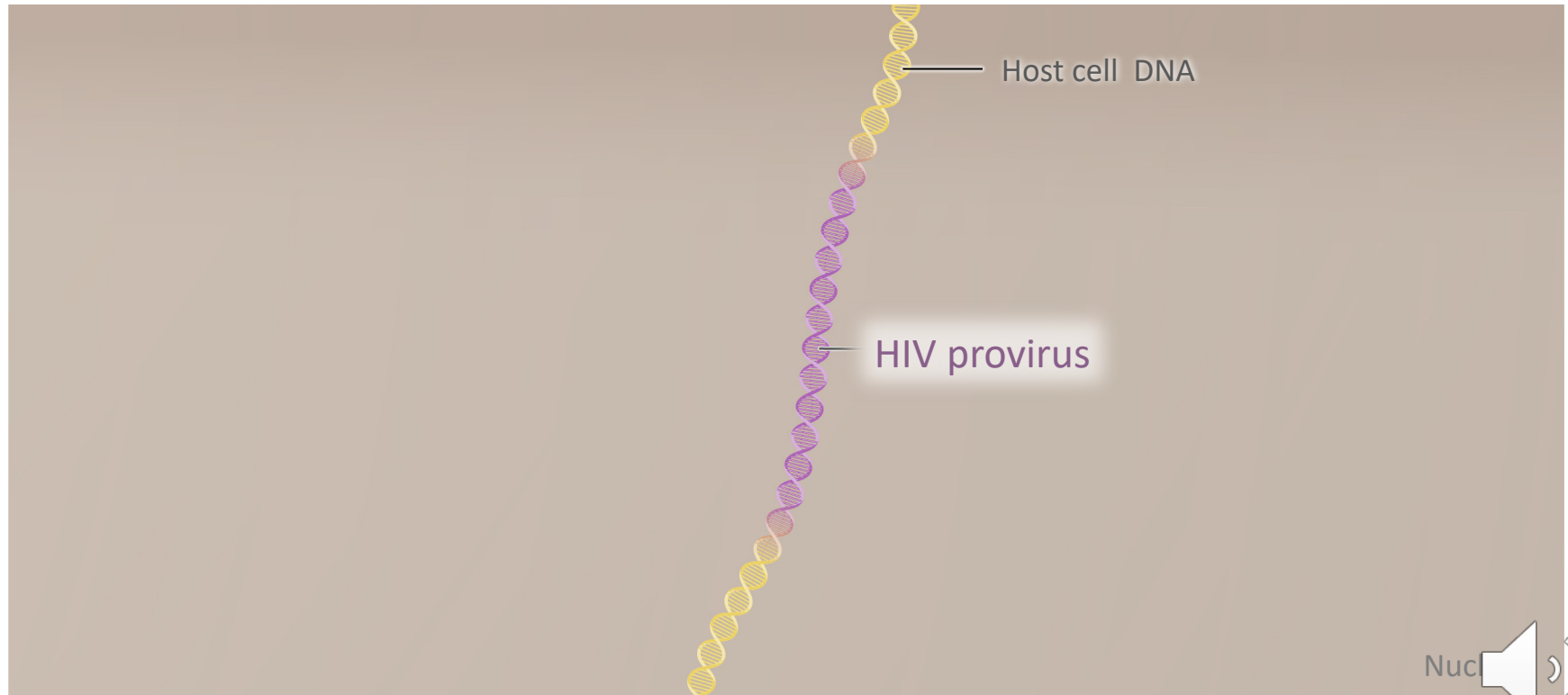
Integration



Integration

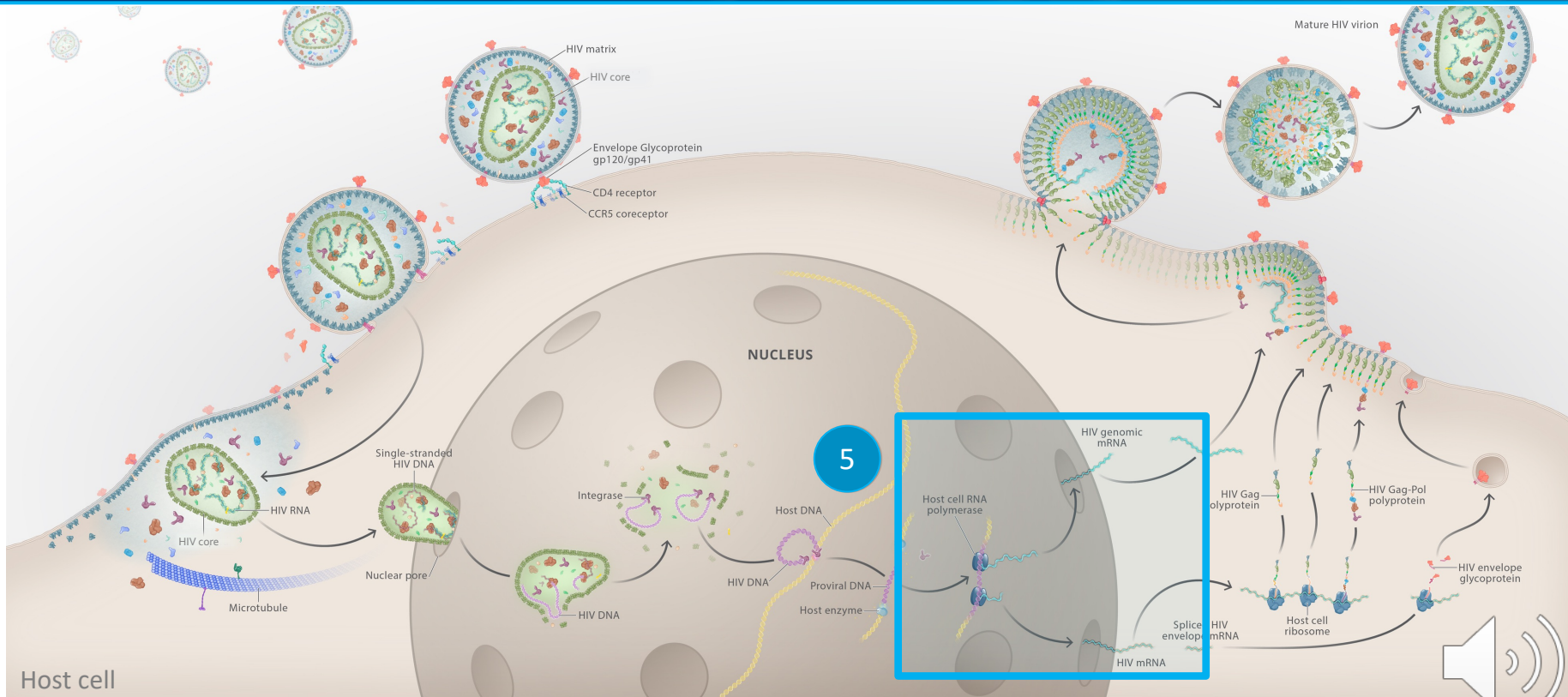


Integration

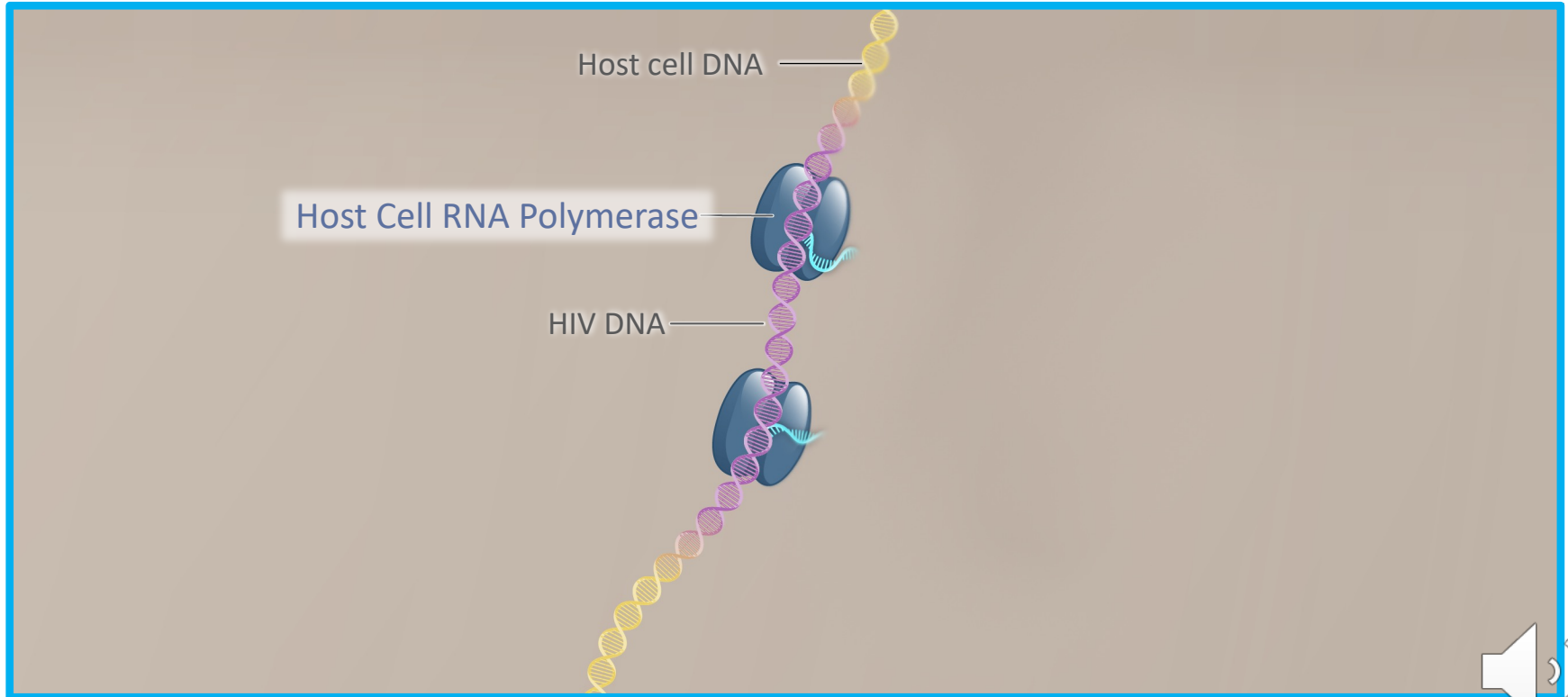


HIV Life Cycle

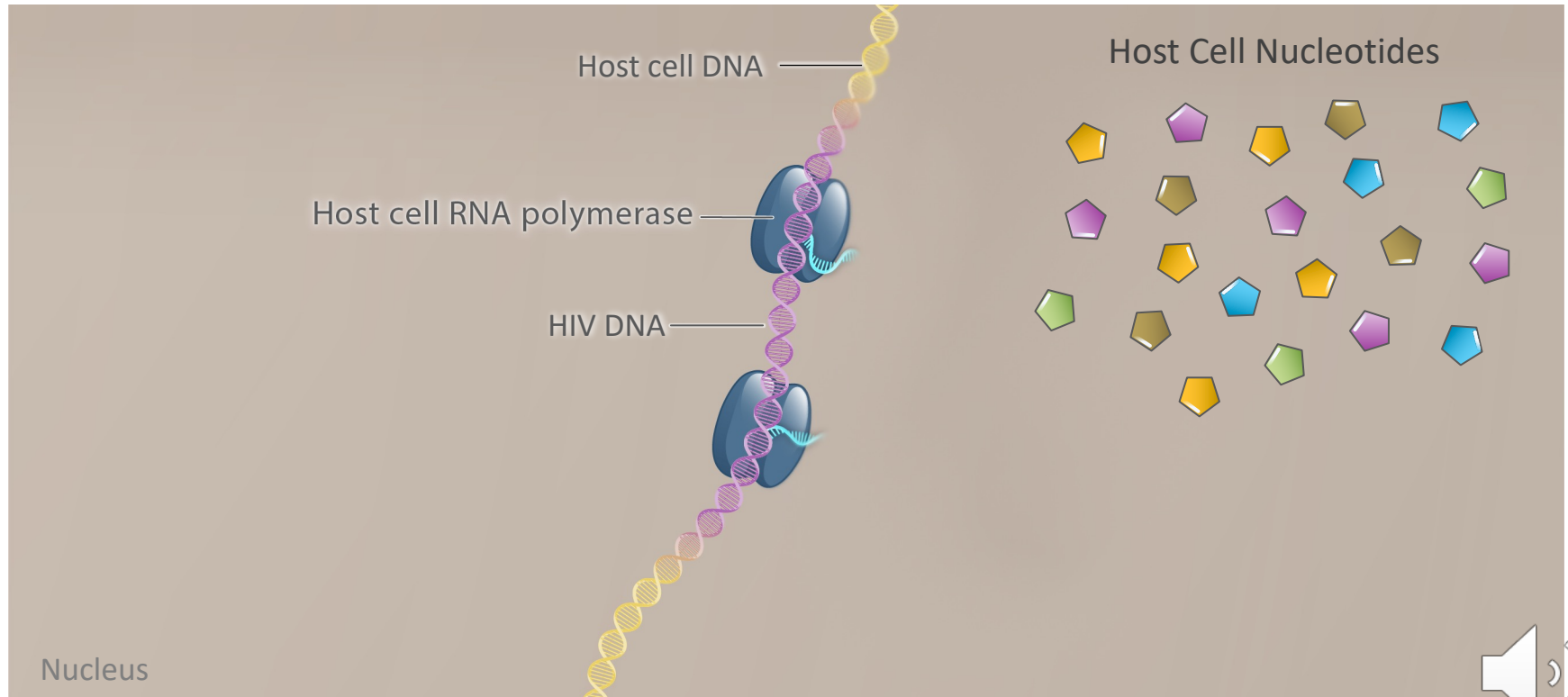
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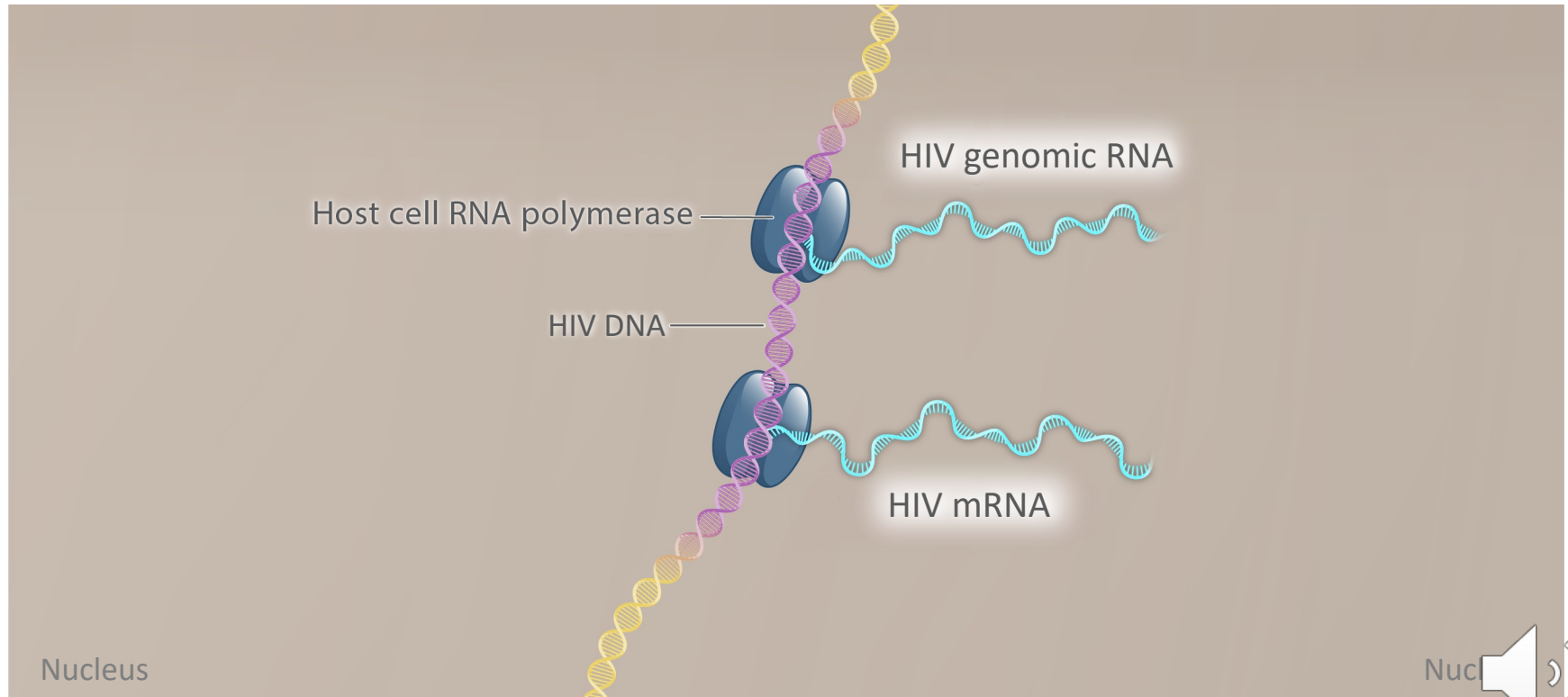
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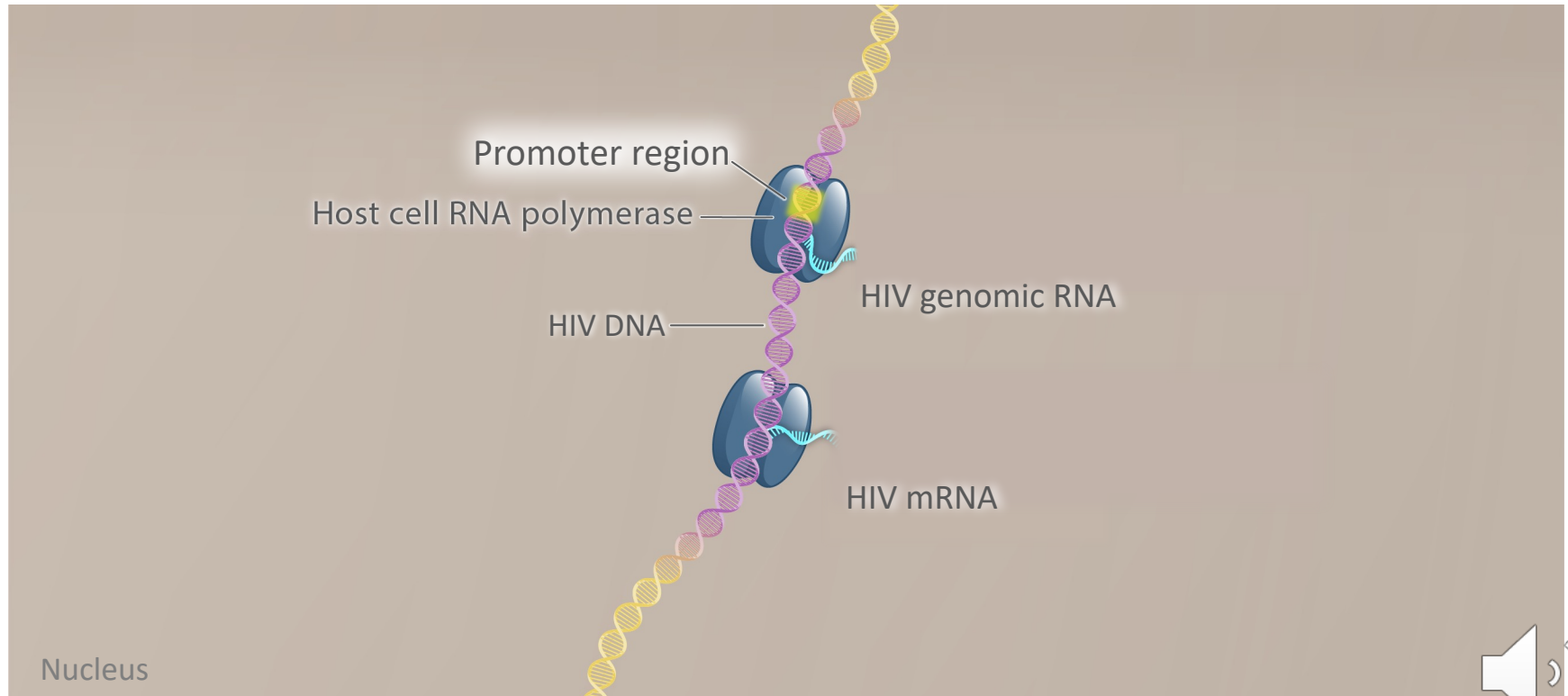
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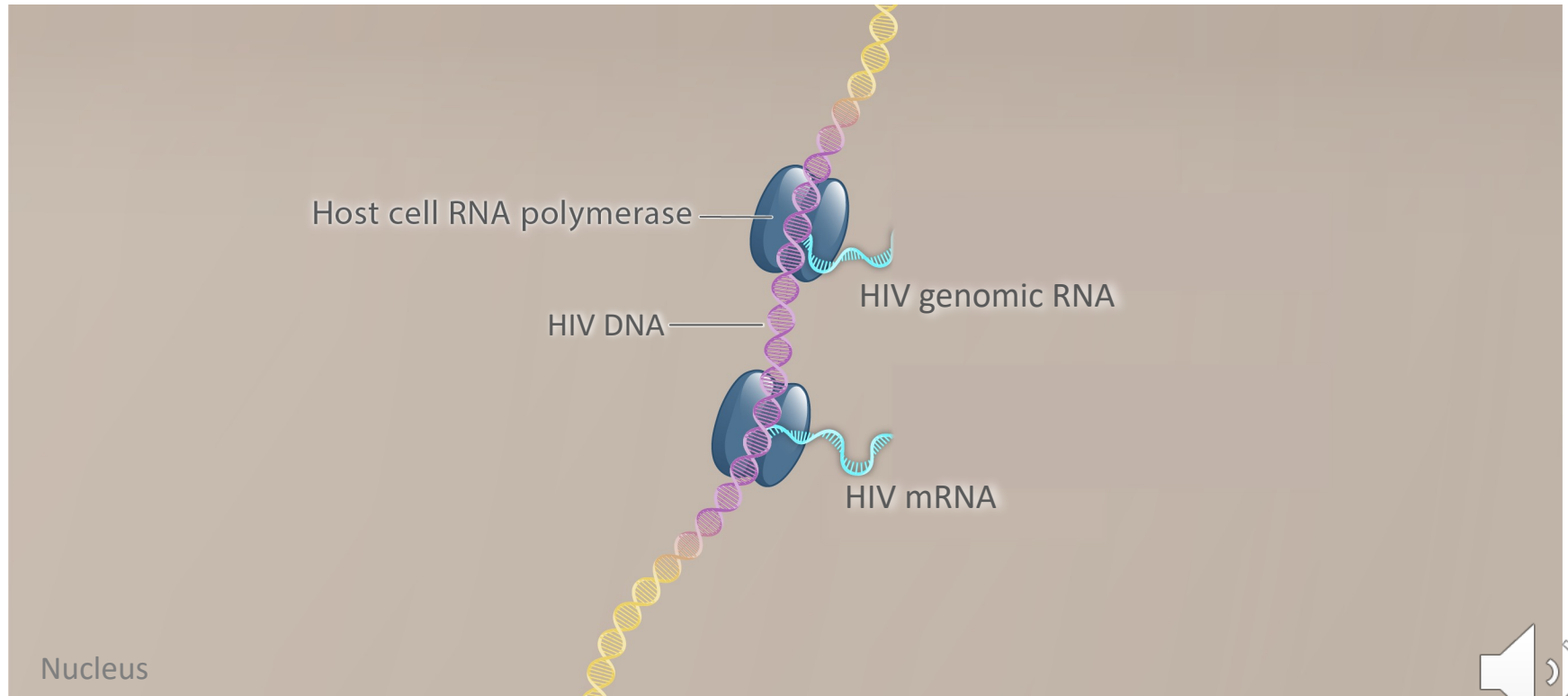
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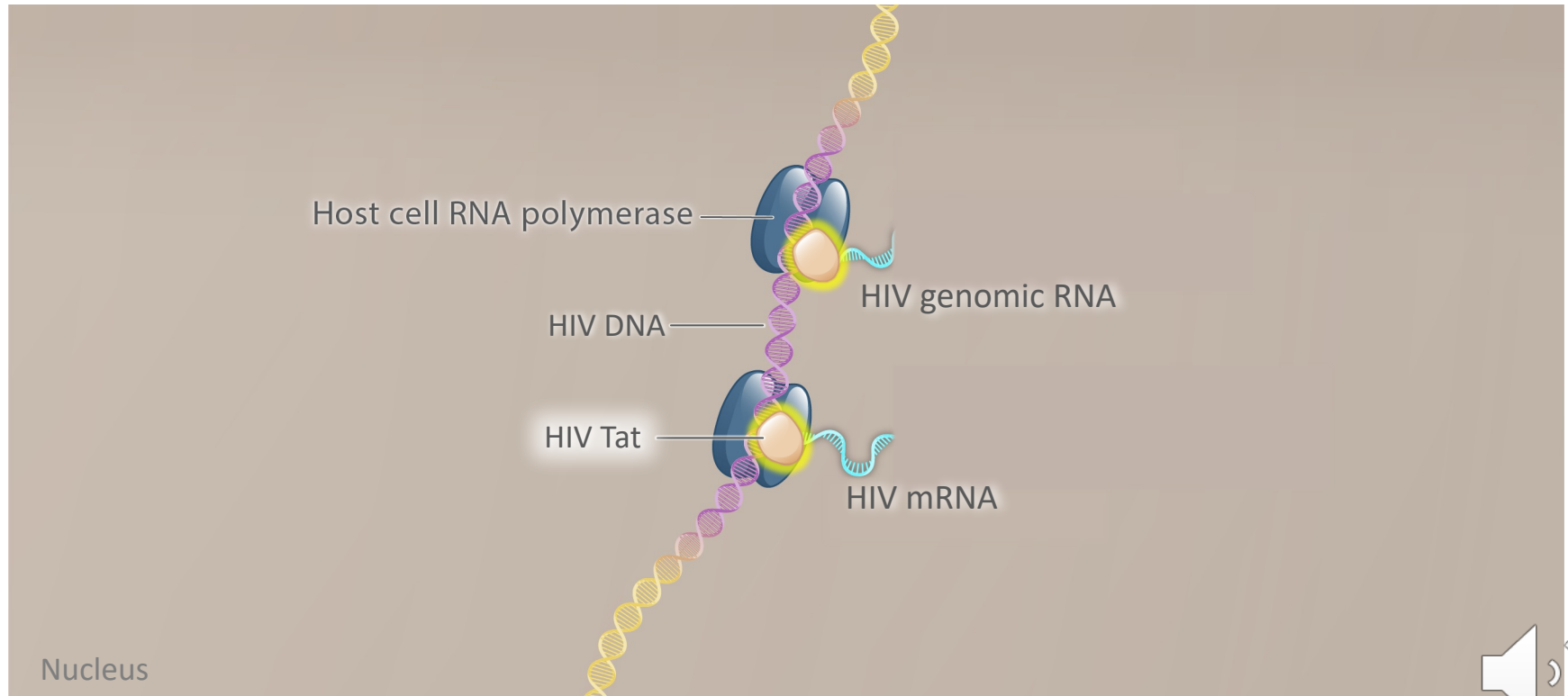
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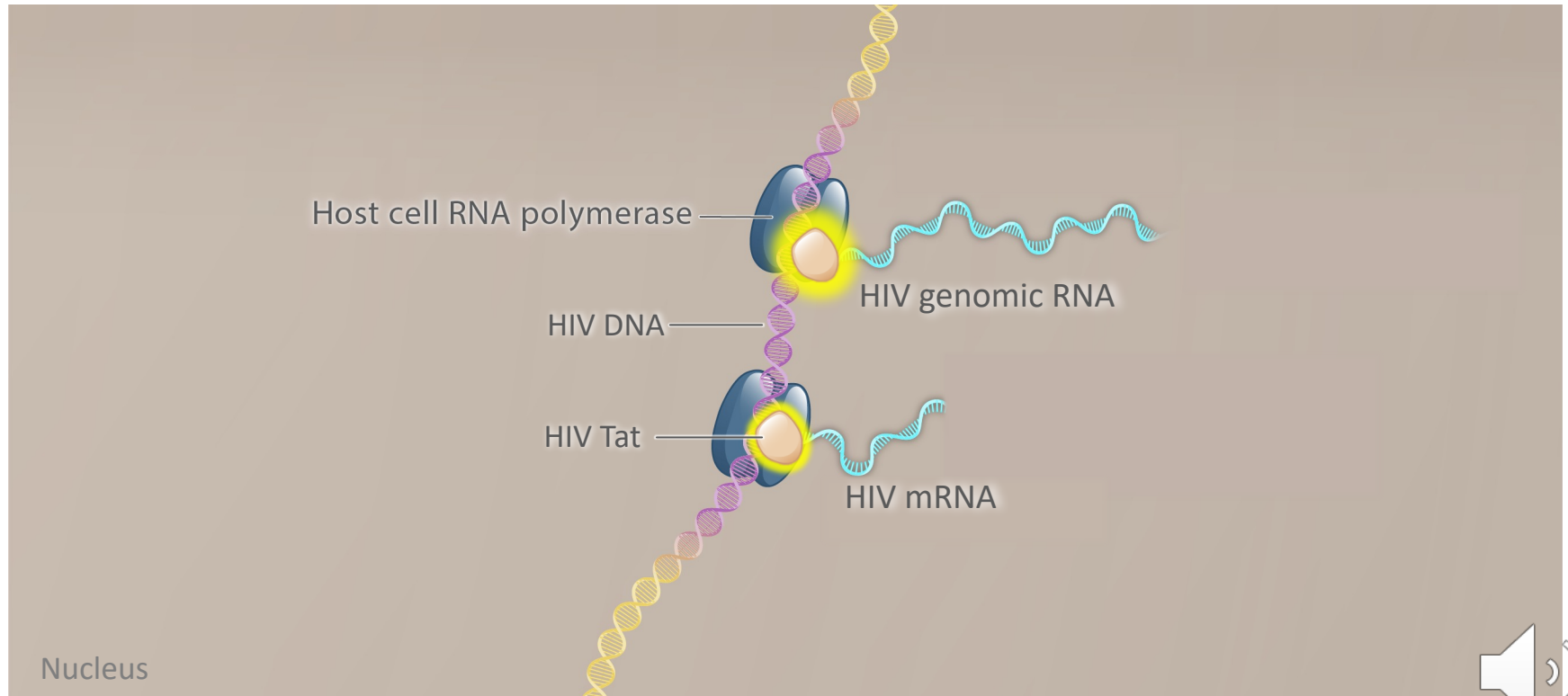
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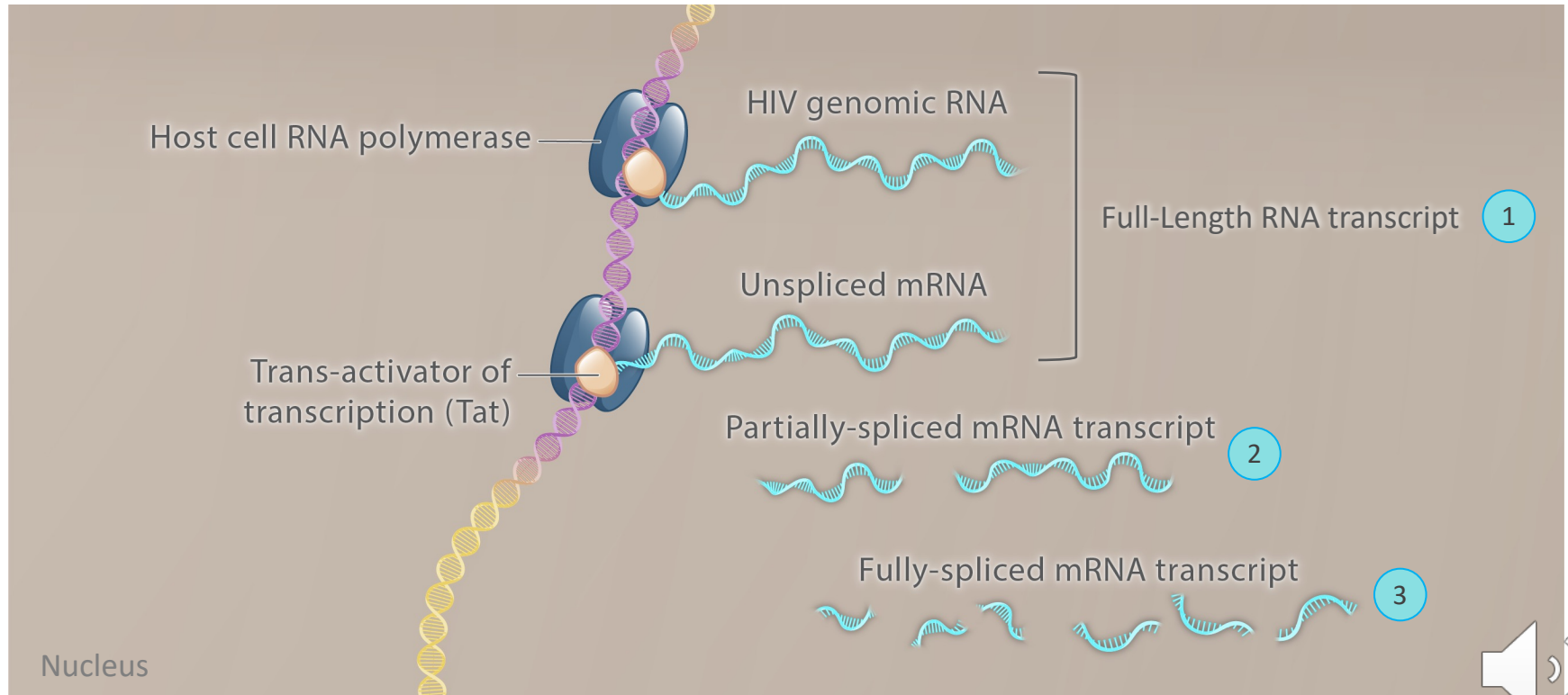
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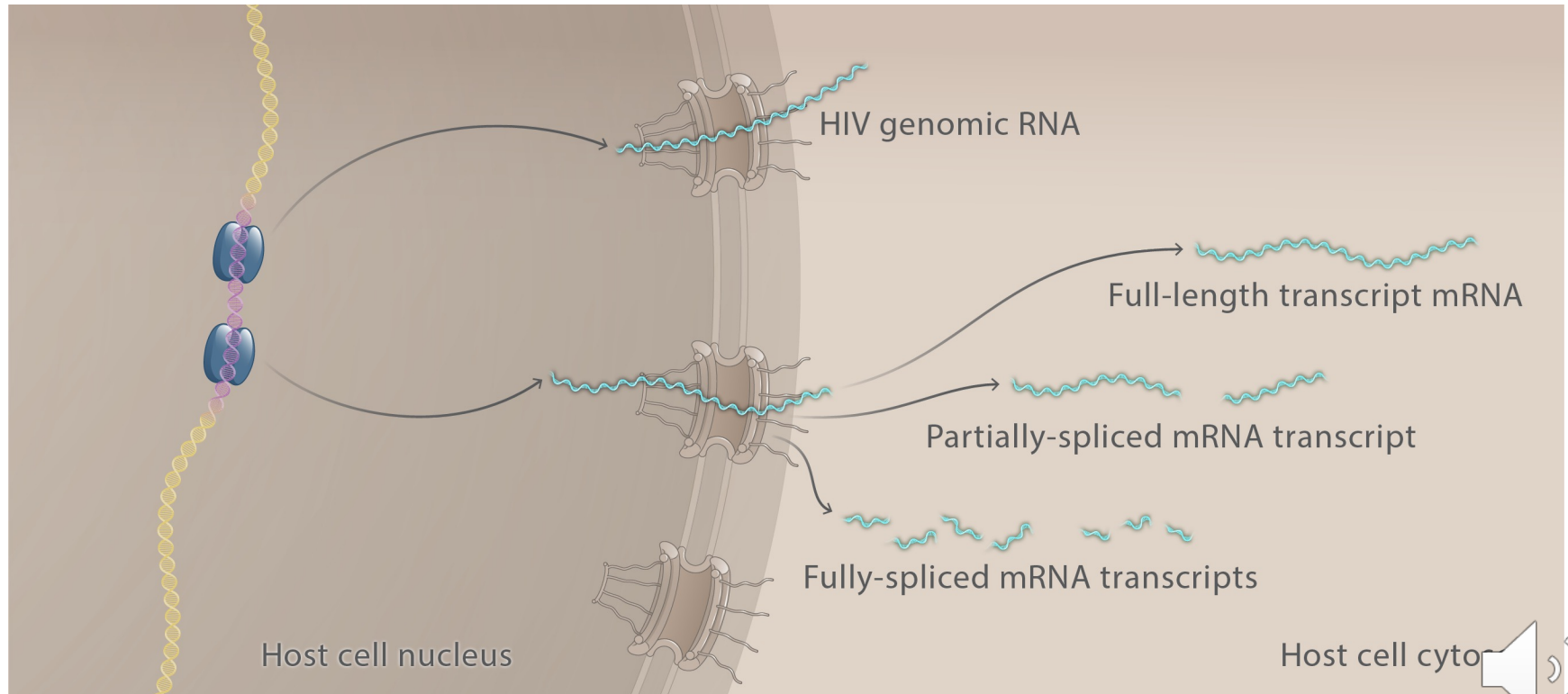
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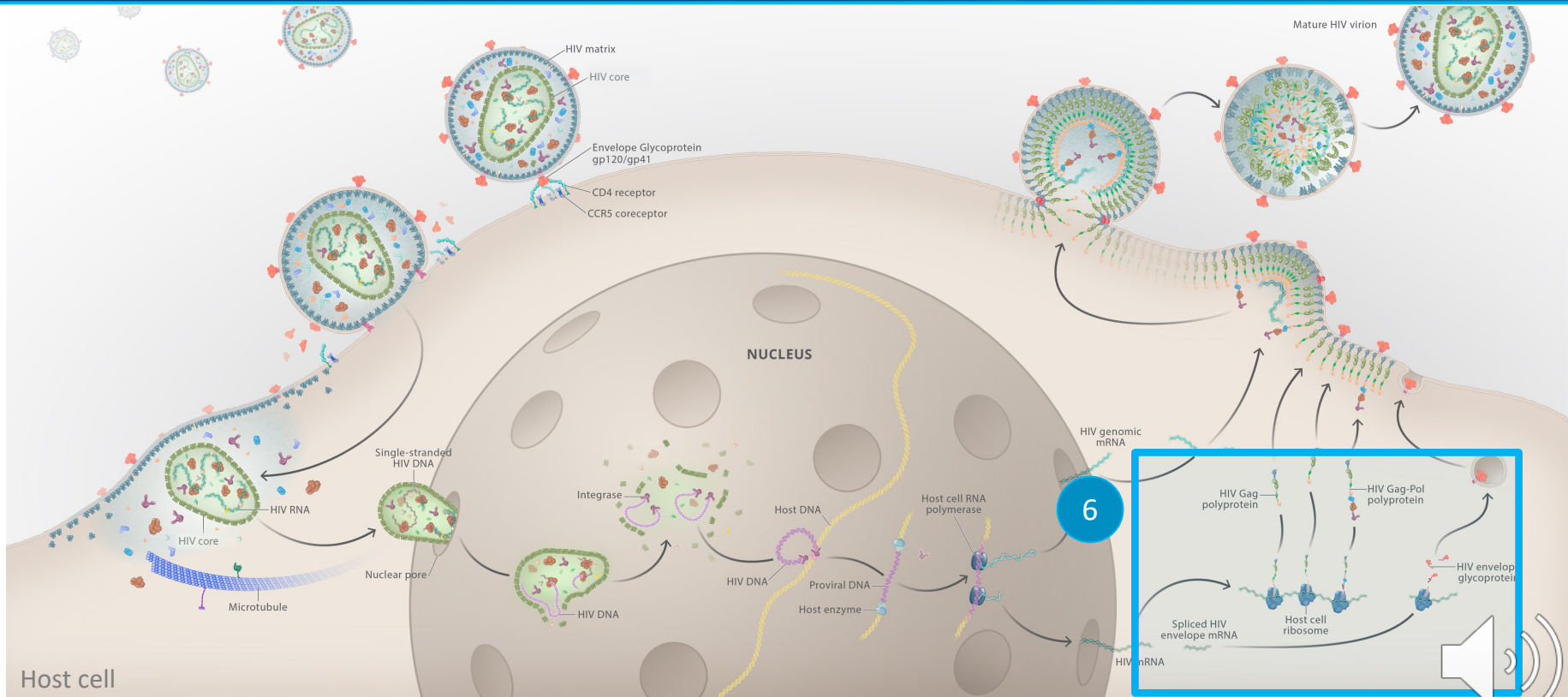
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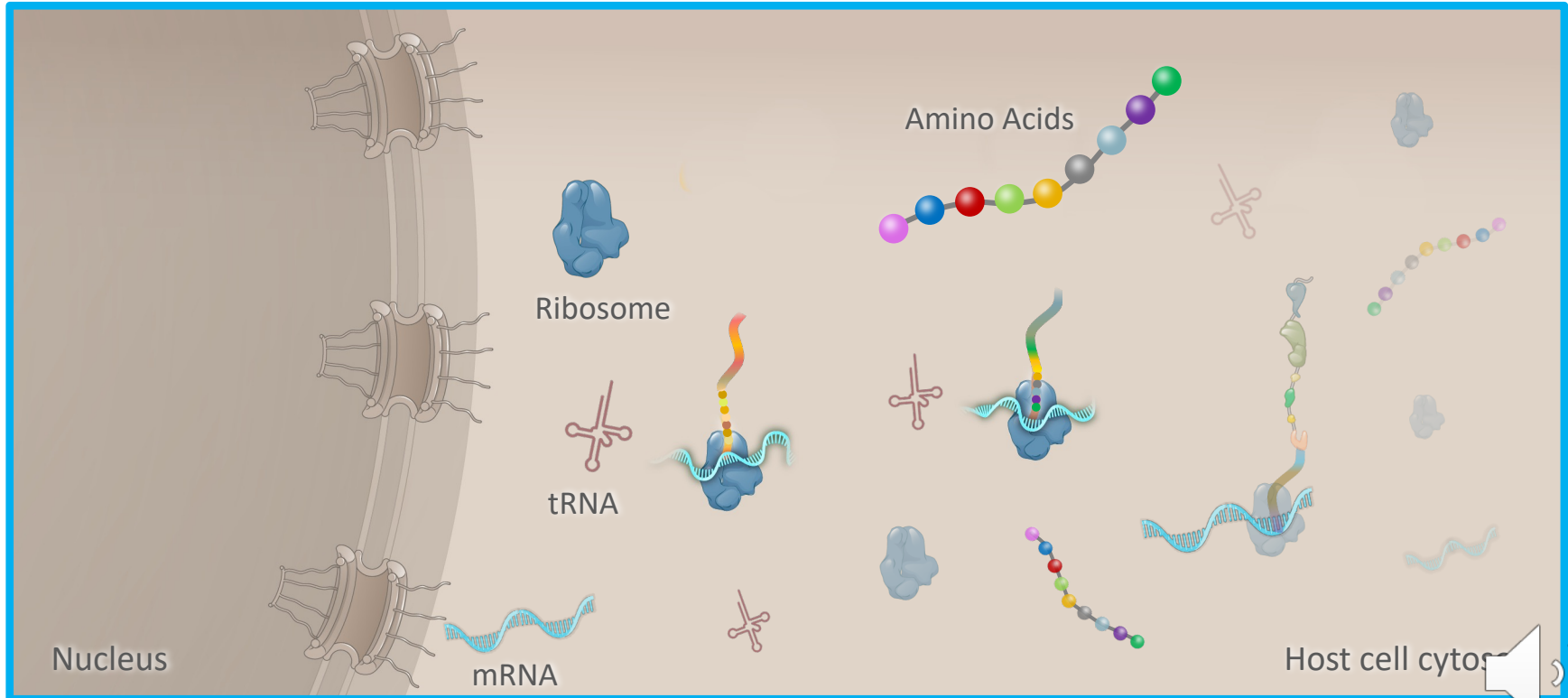
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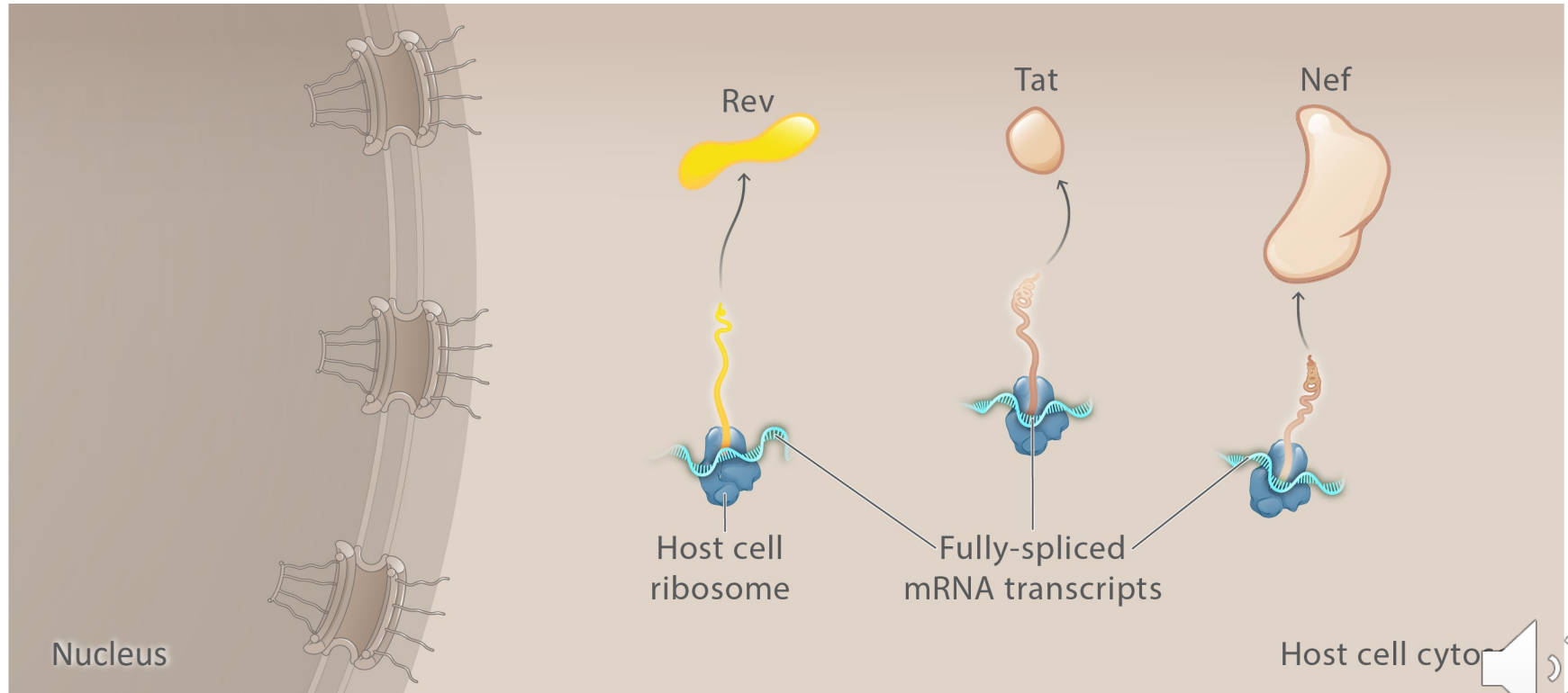
HIV Life Cycle Translation



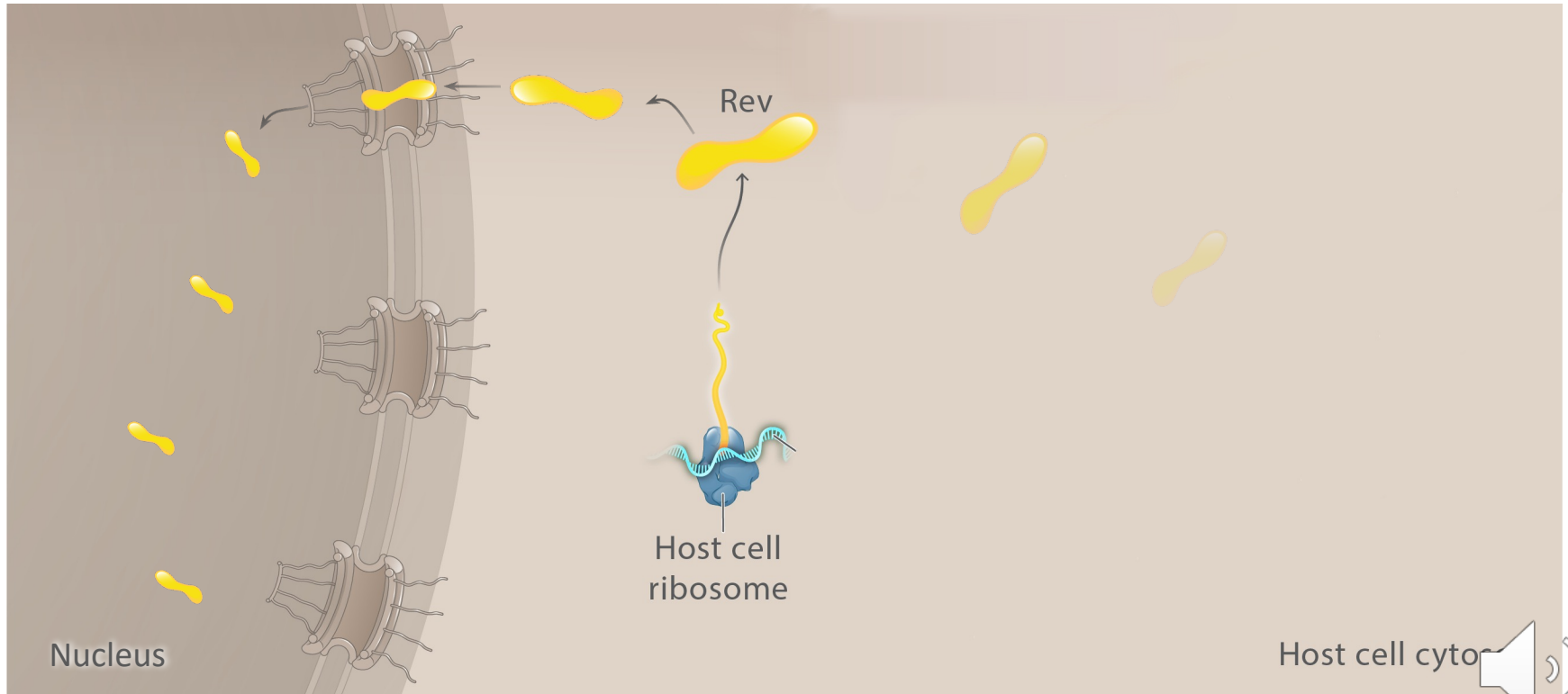
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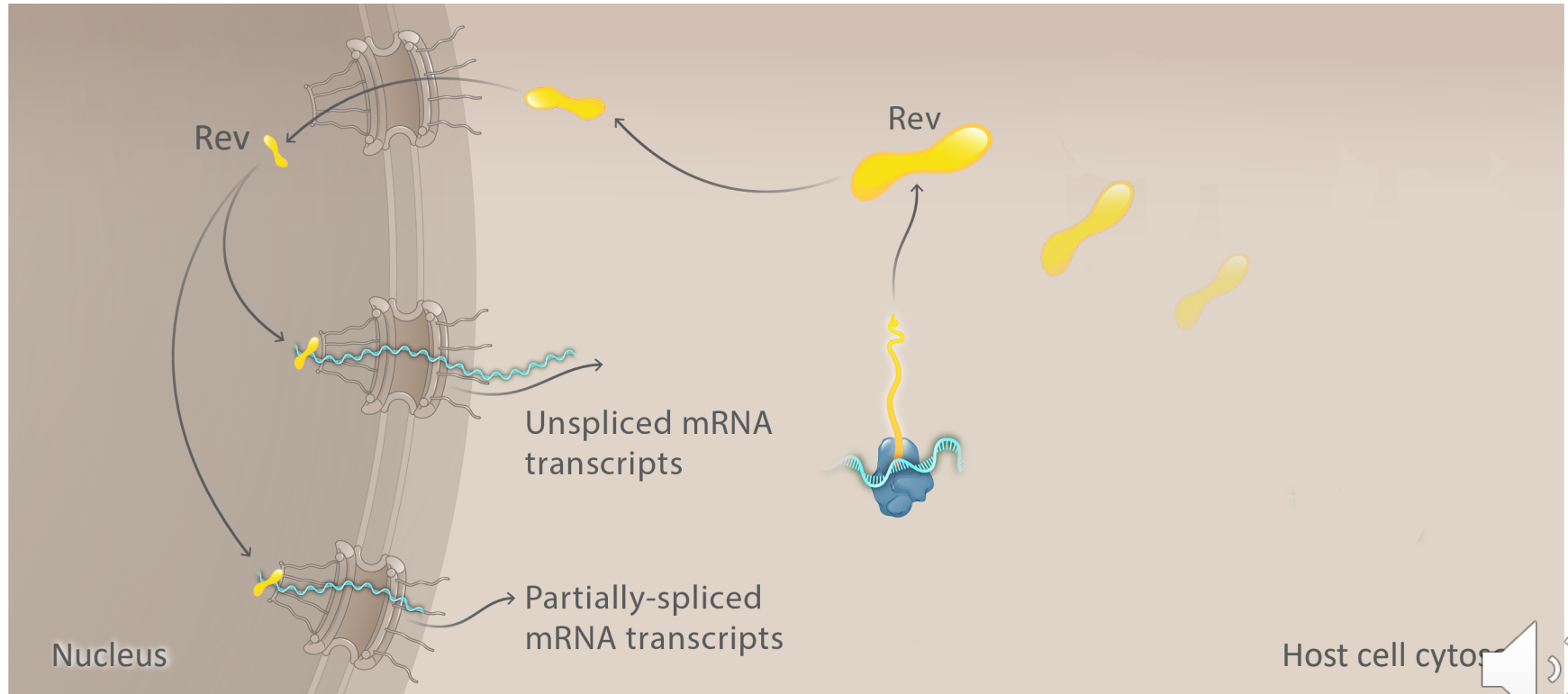
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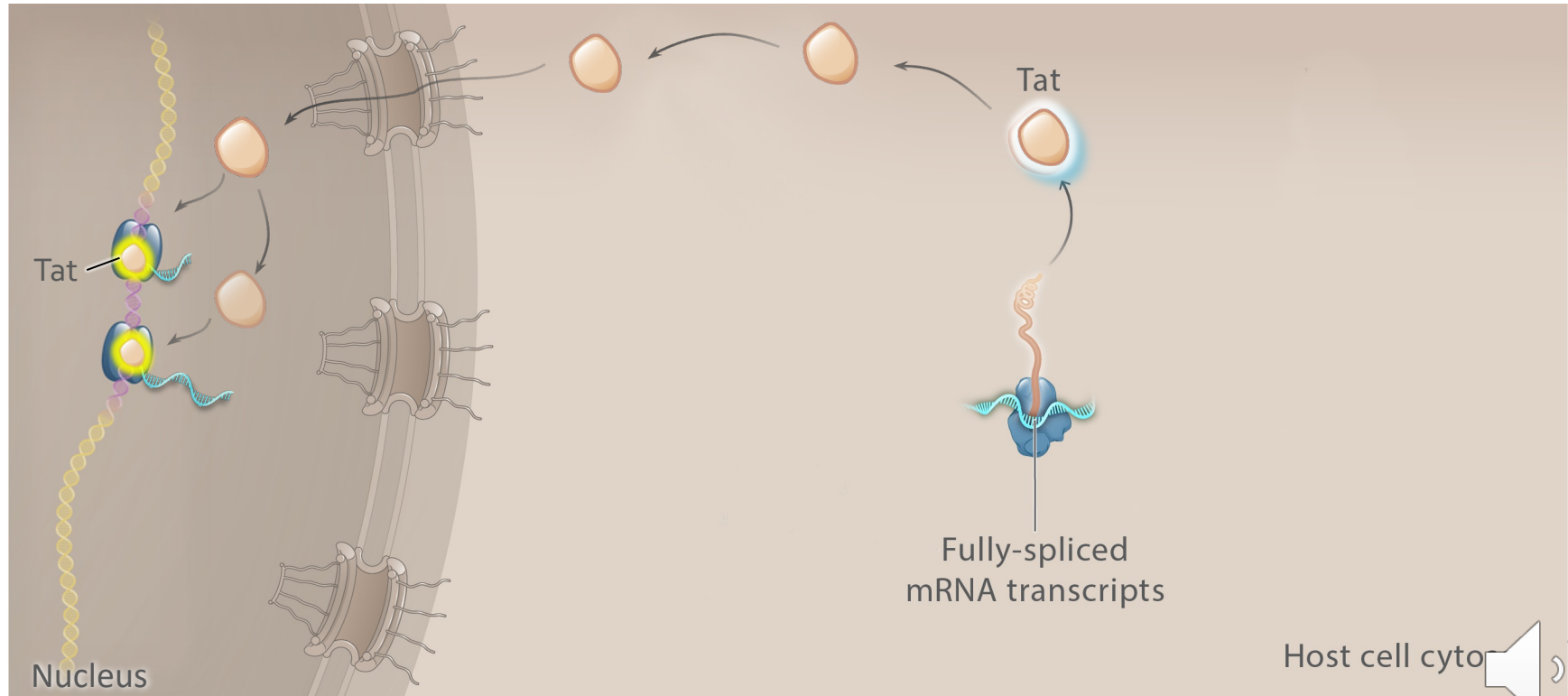
Translation



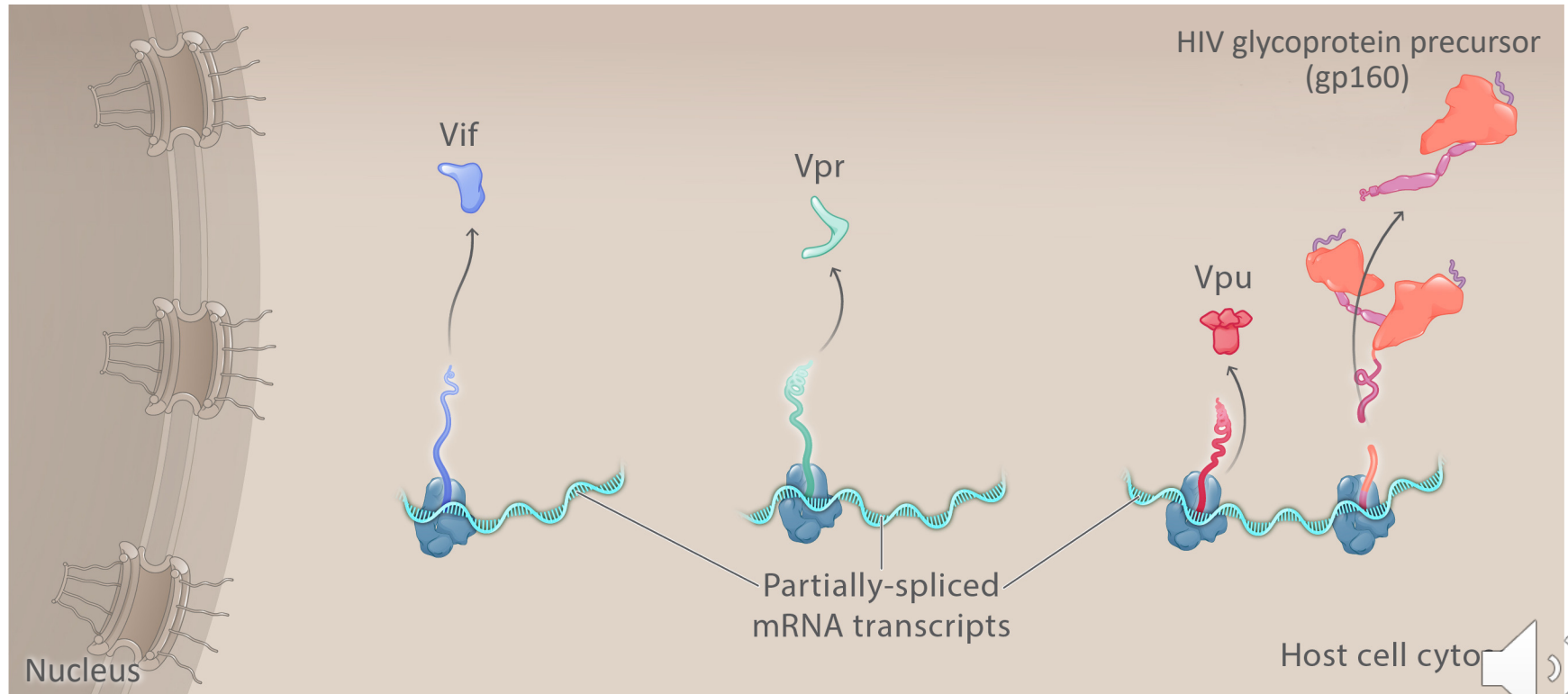
Translation



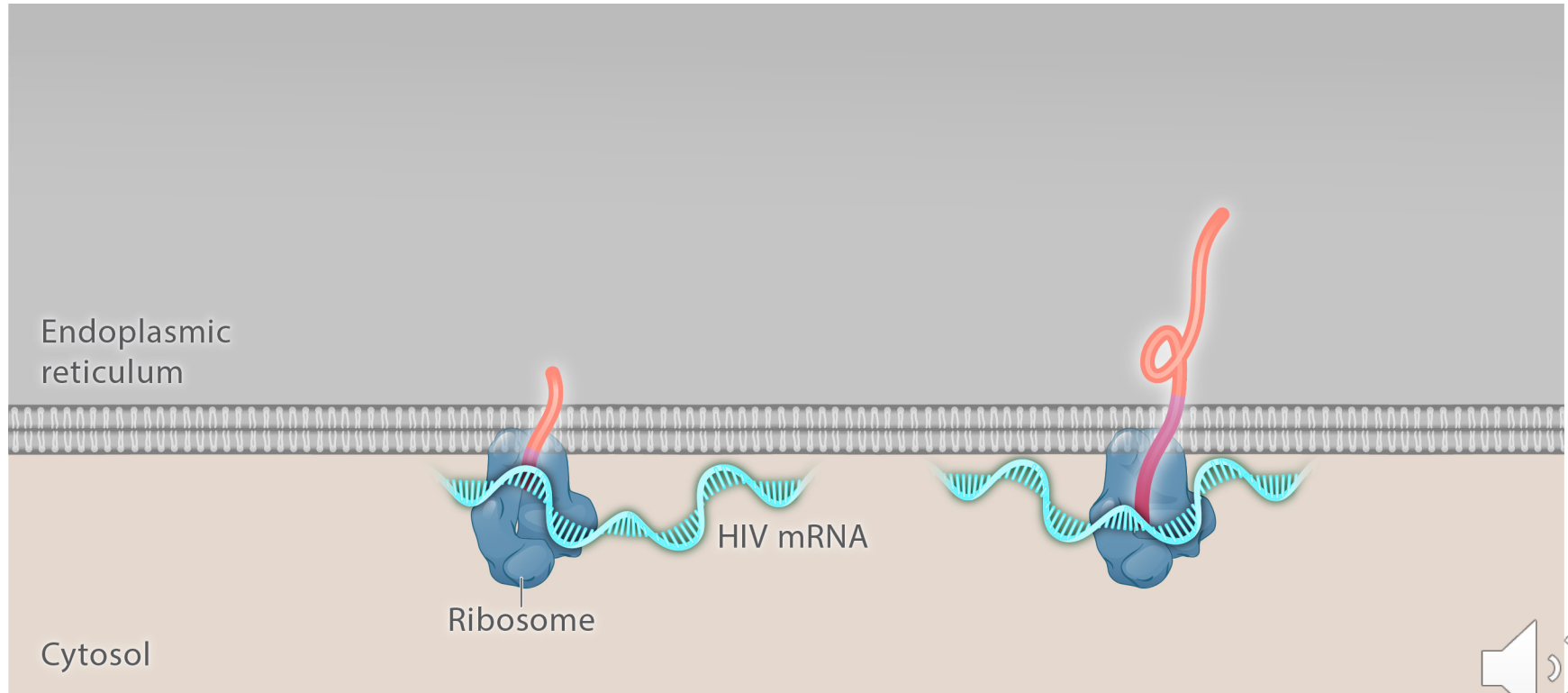
Translation



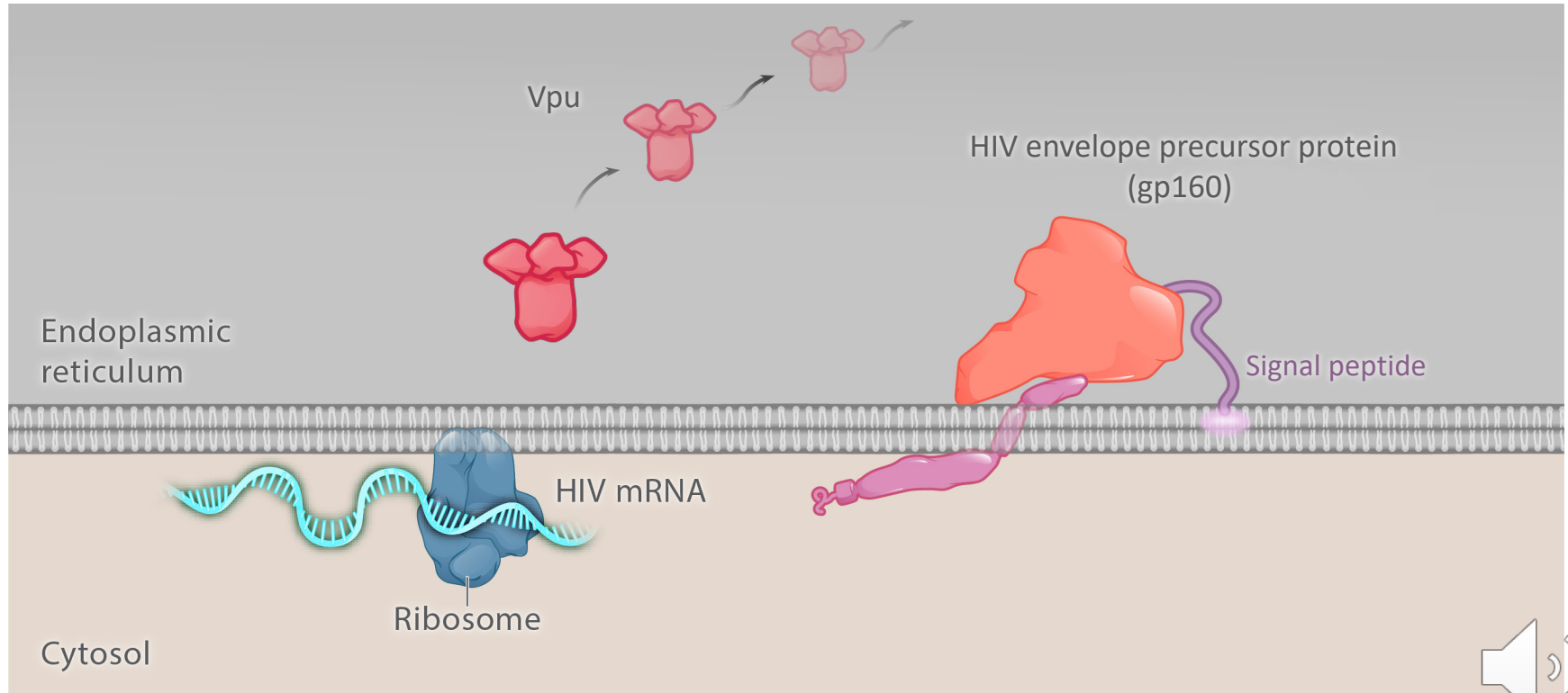
Translation



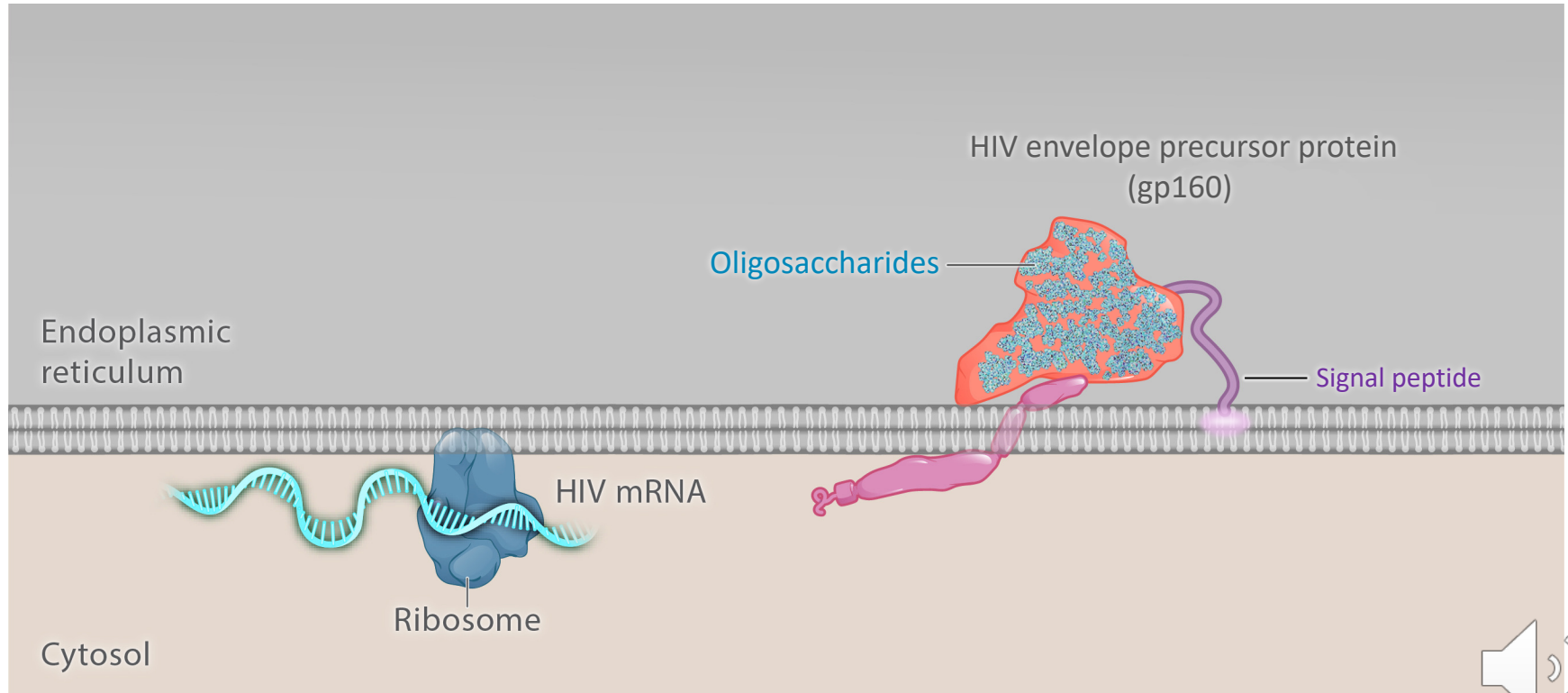
Translation



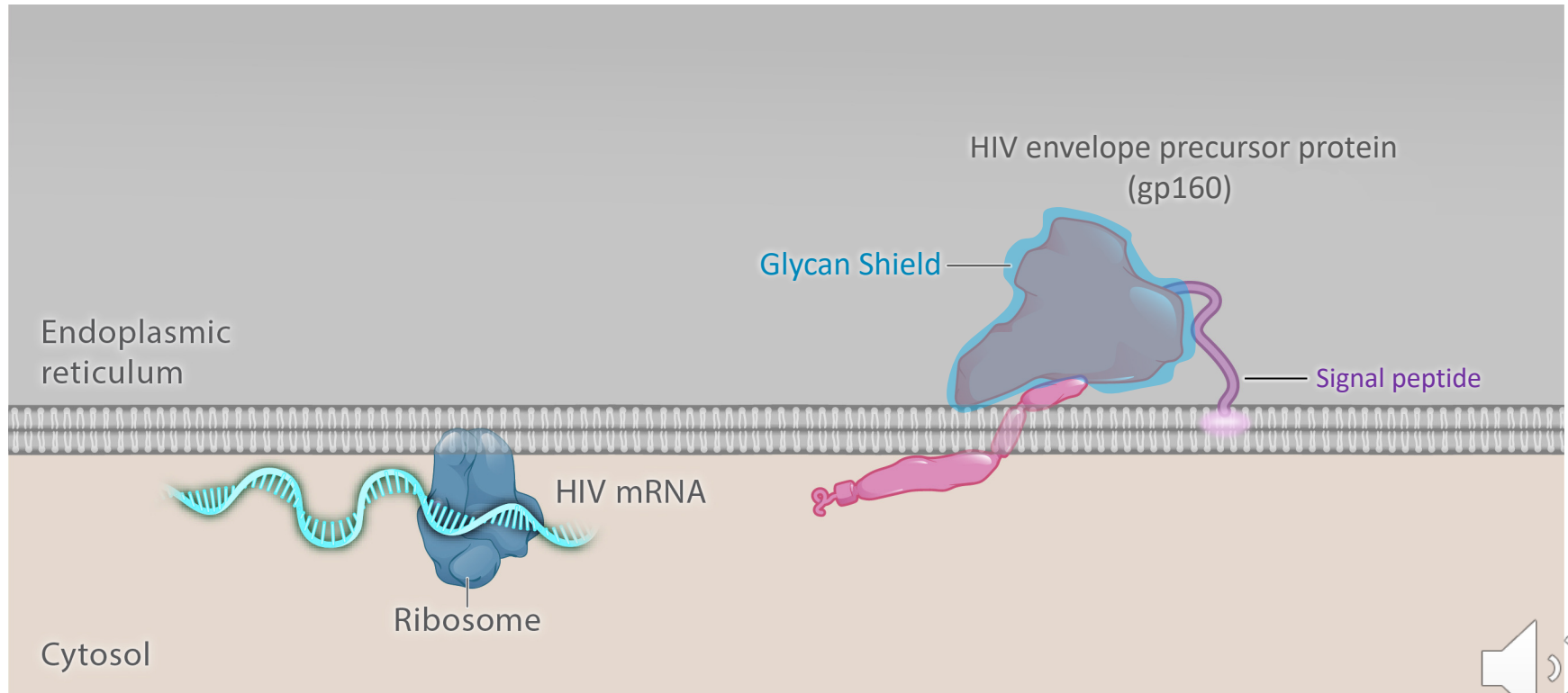
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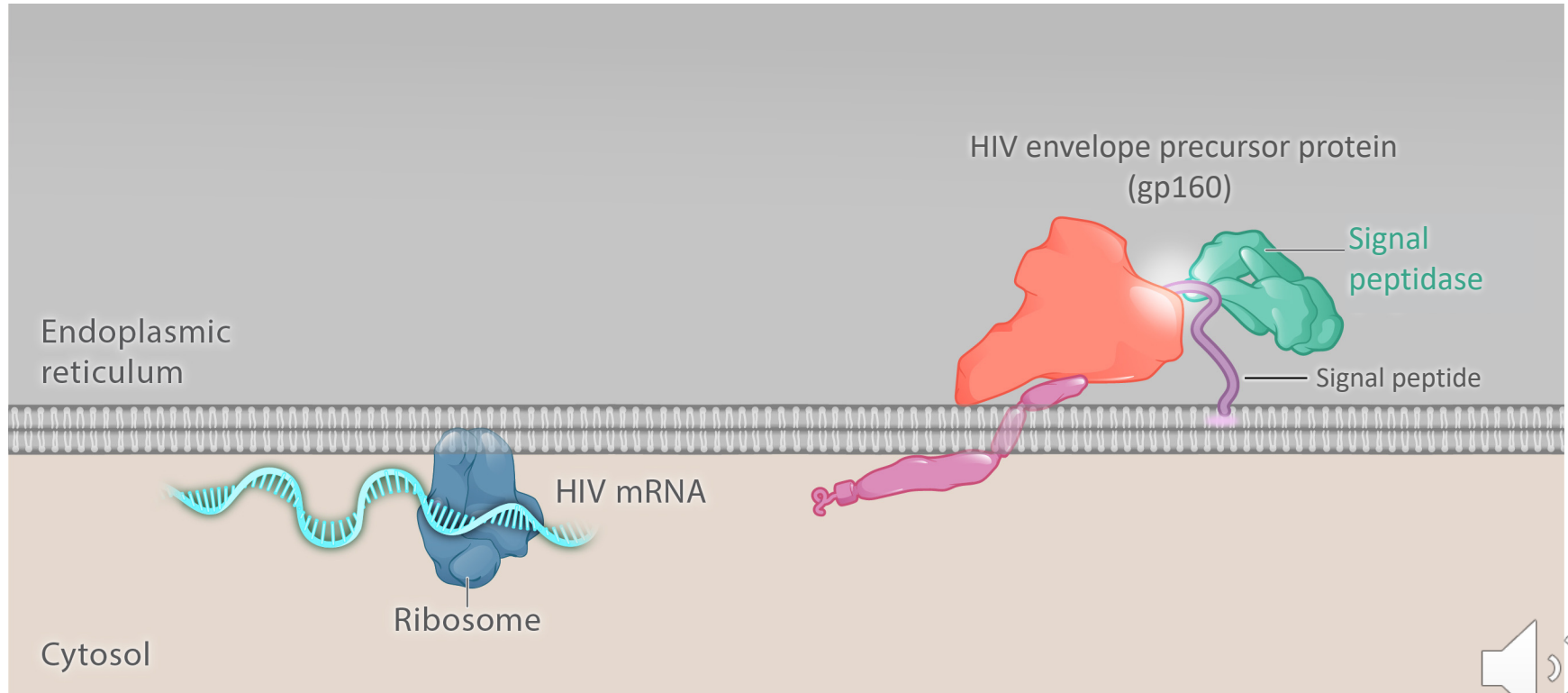
Translation



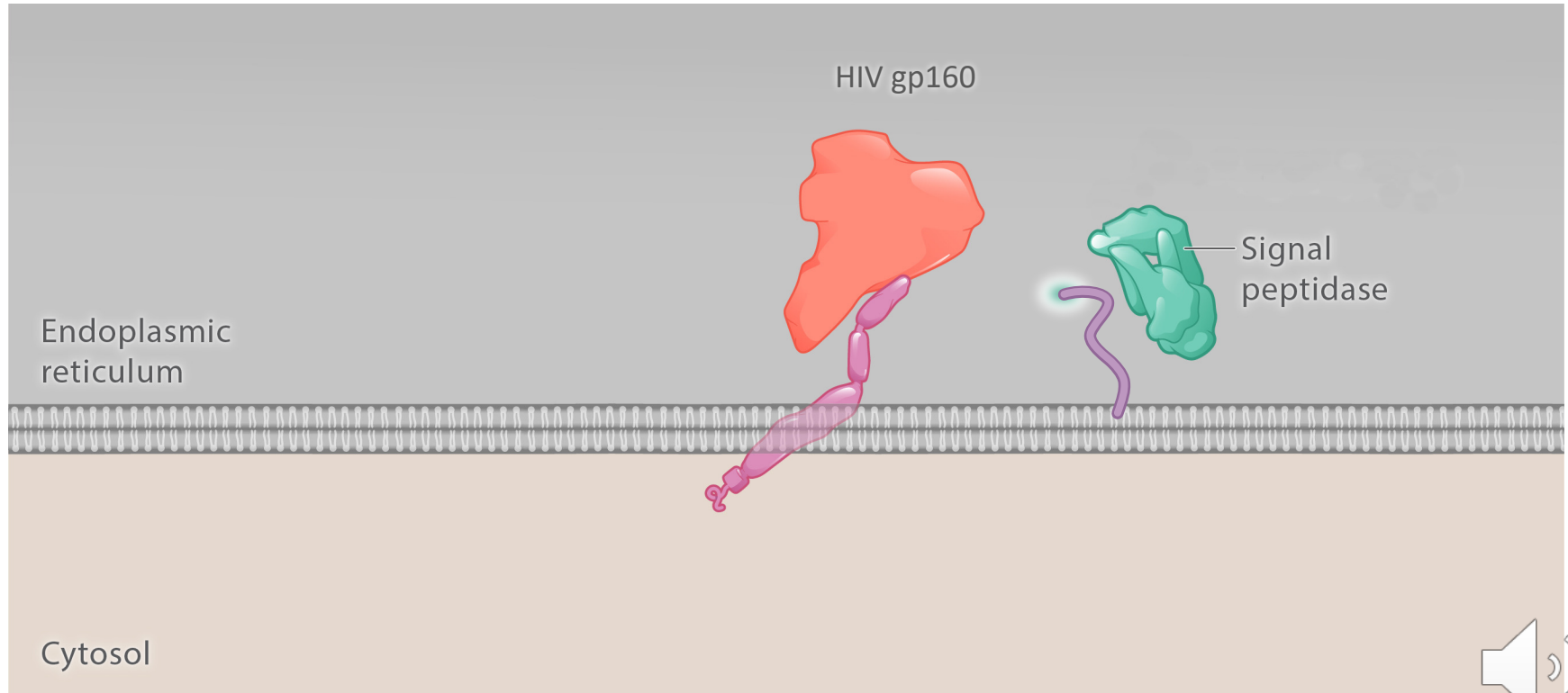
Translation



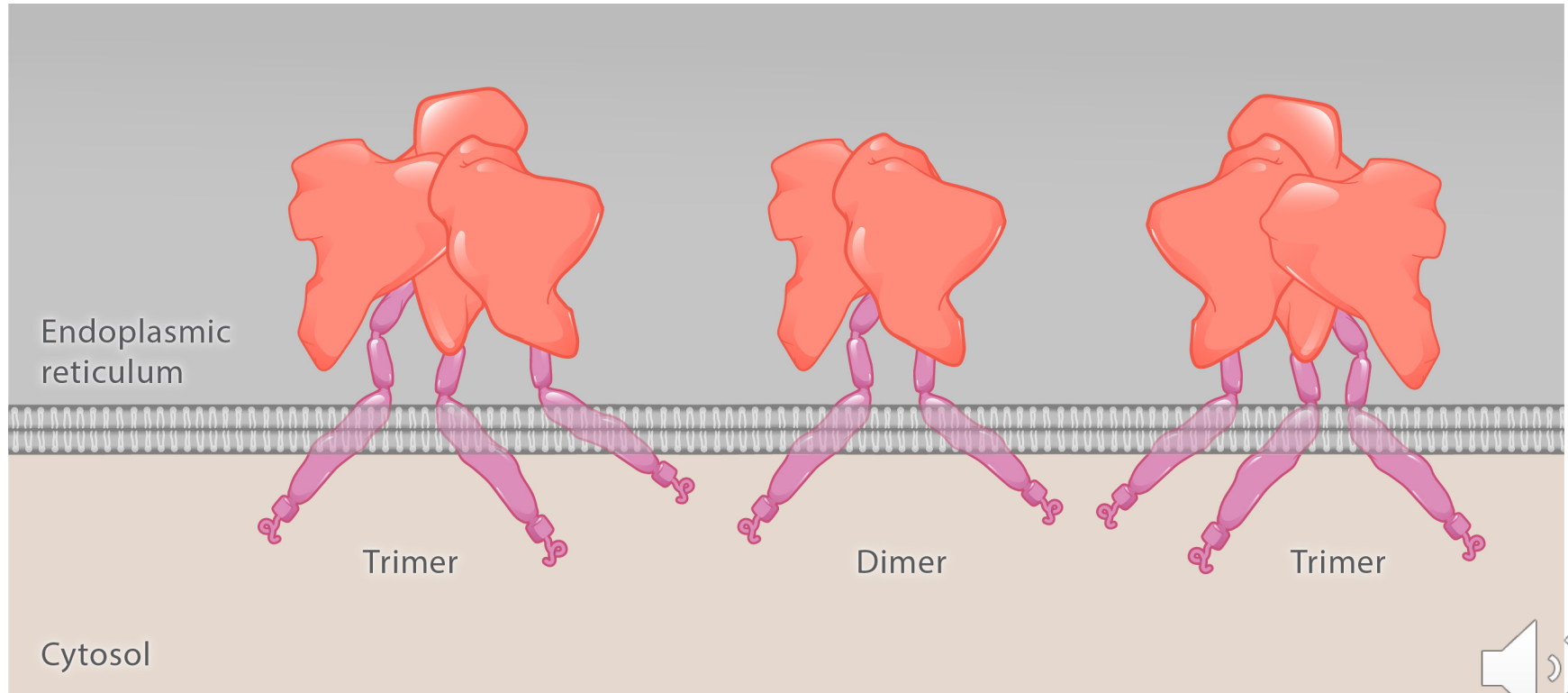
Translation



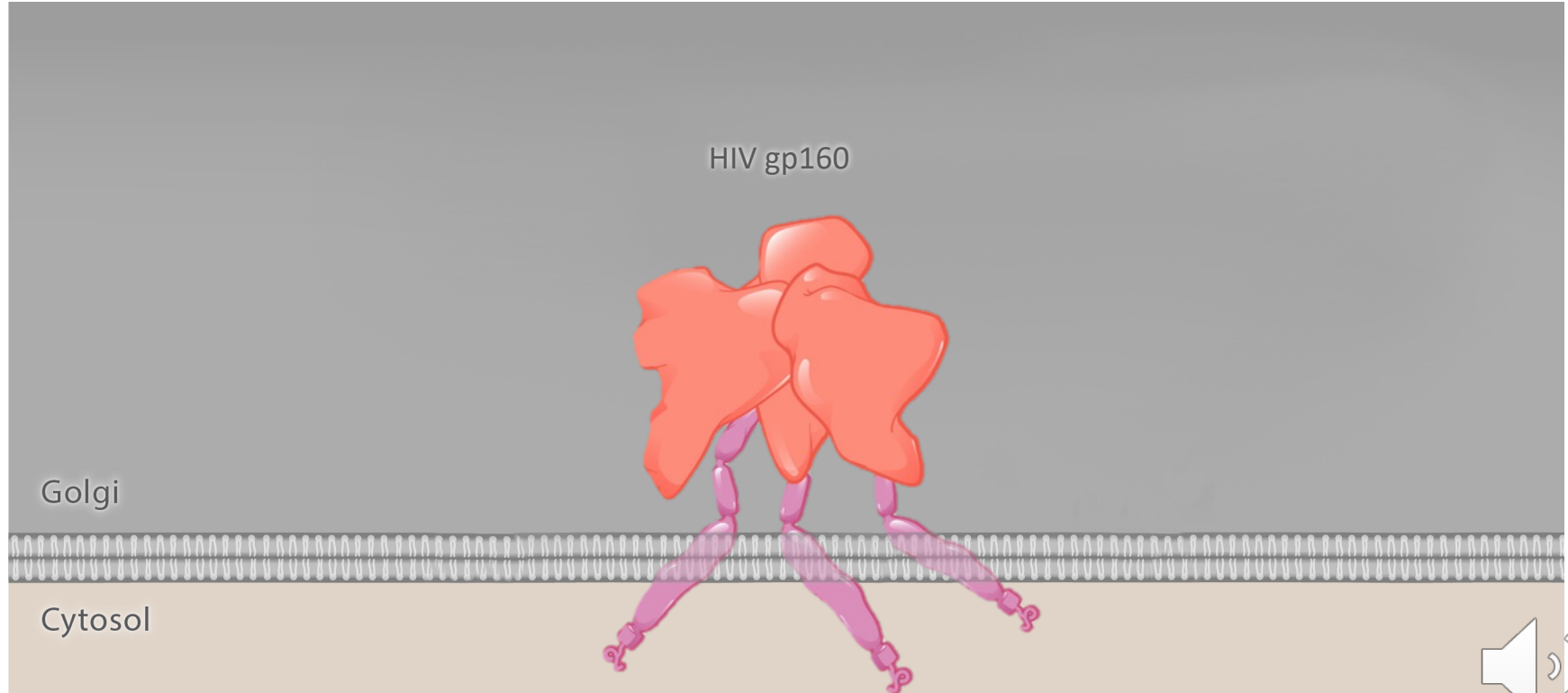
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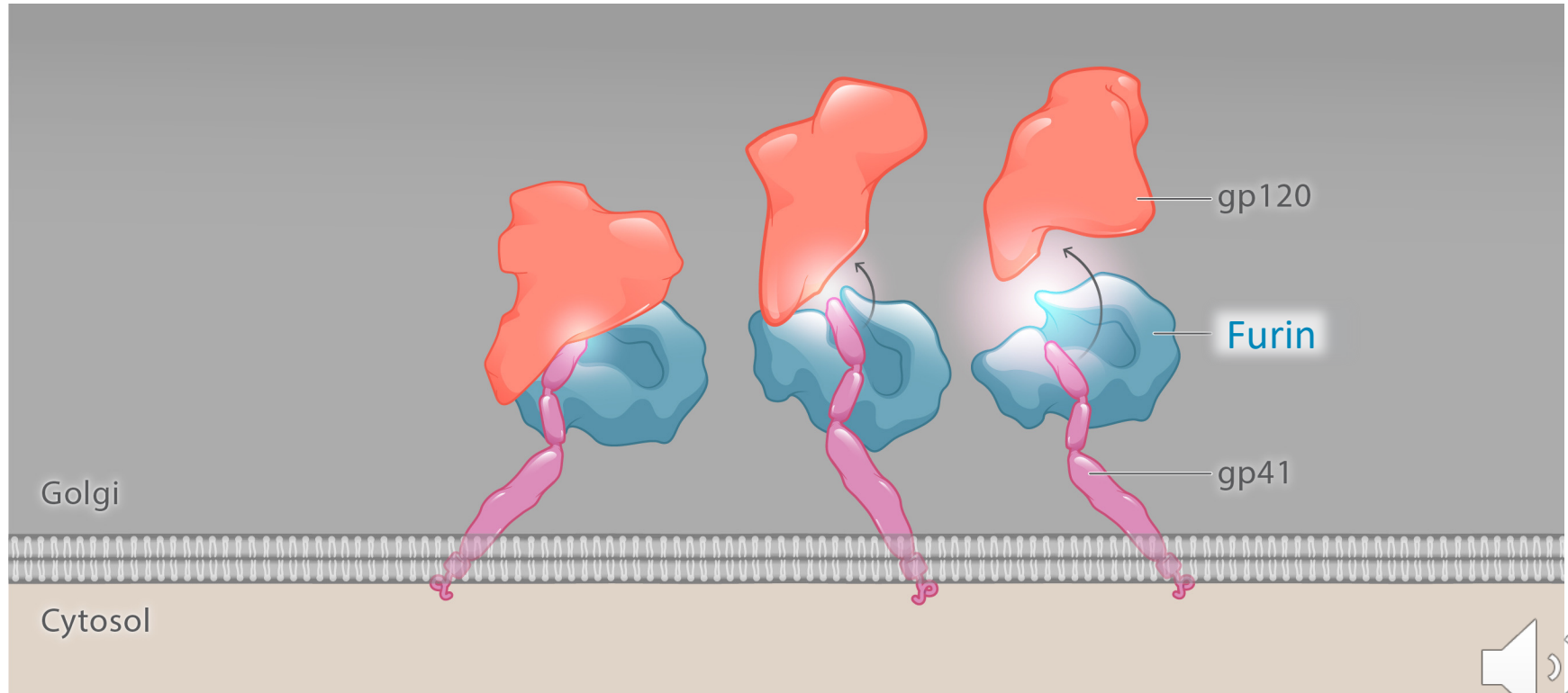
Translation



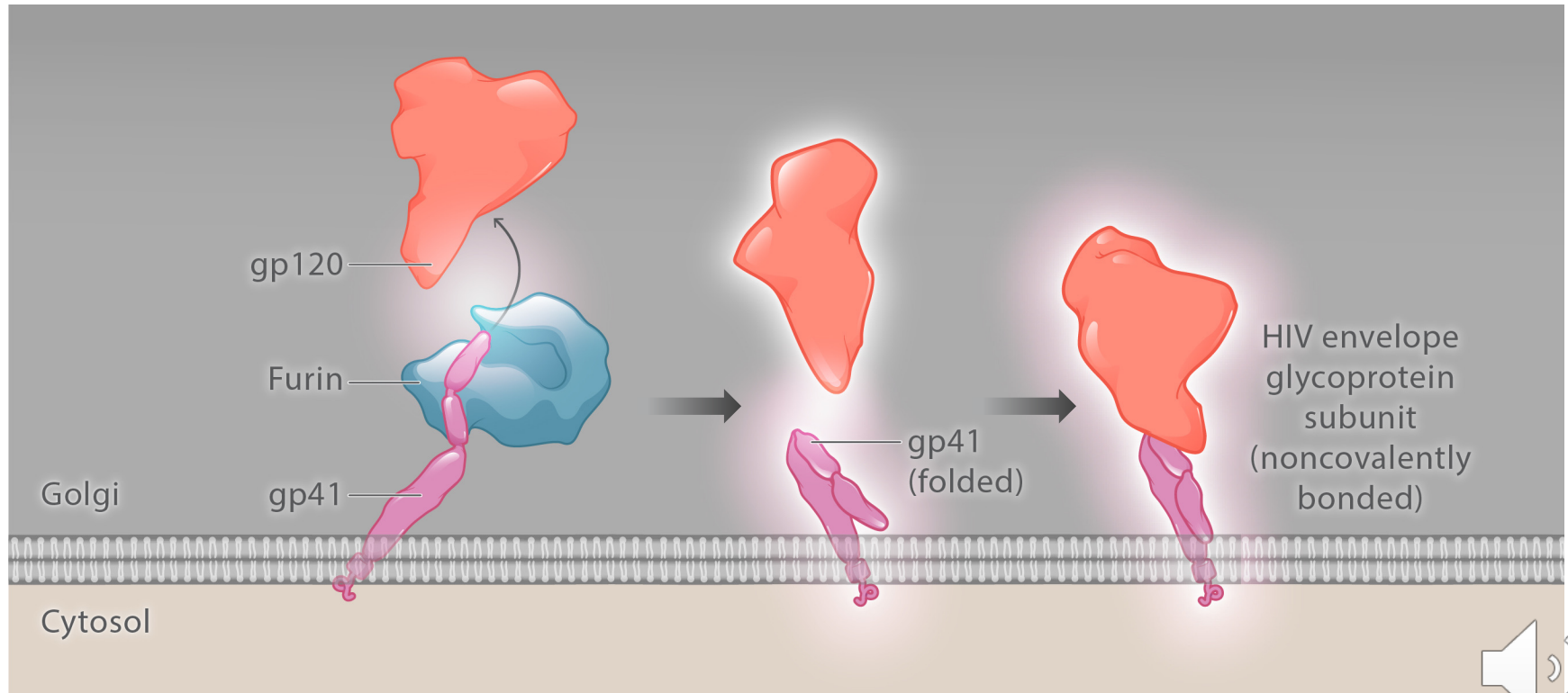
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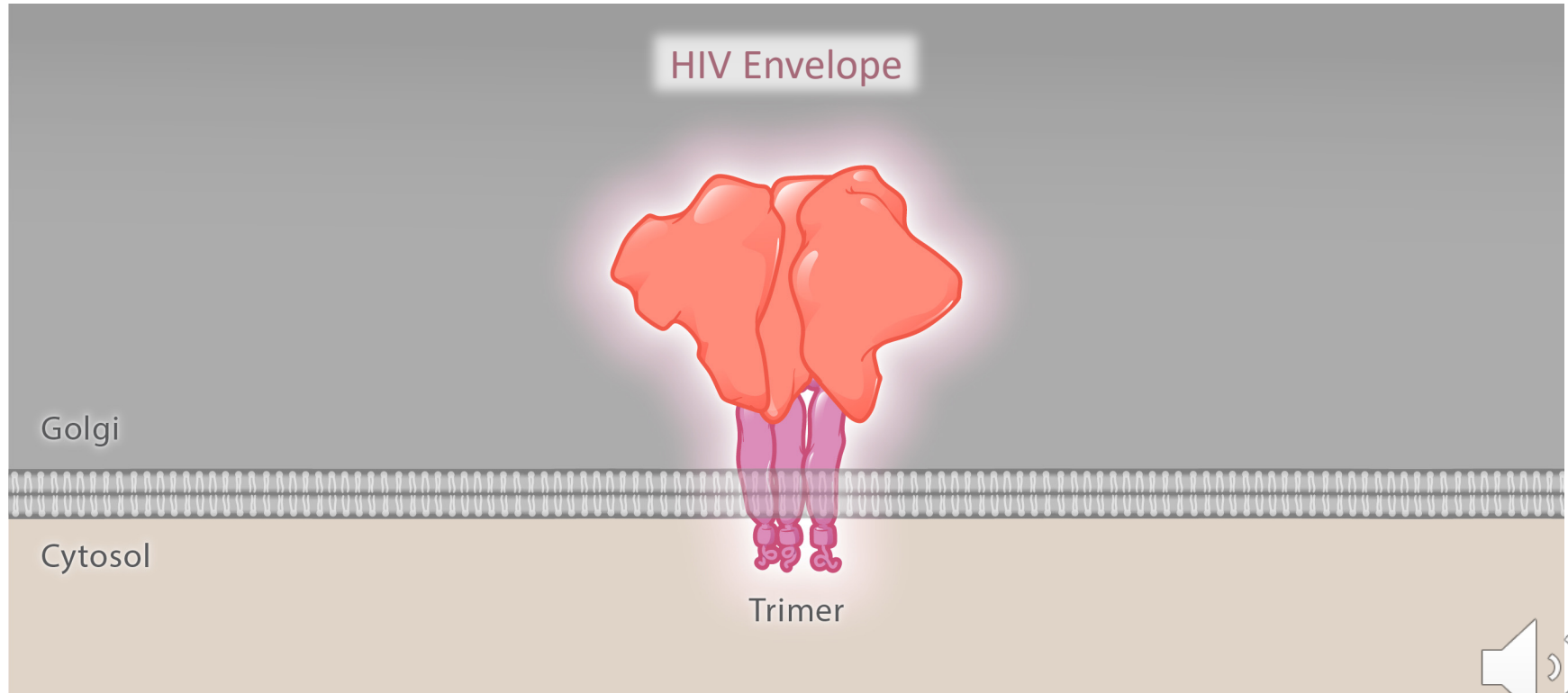
Translation



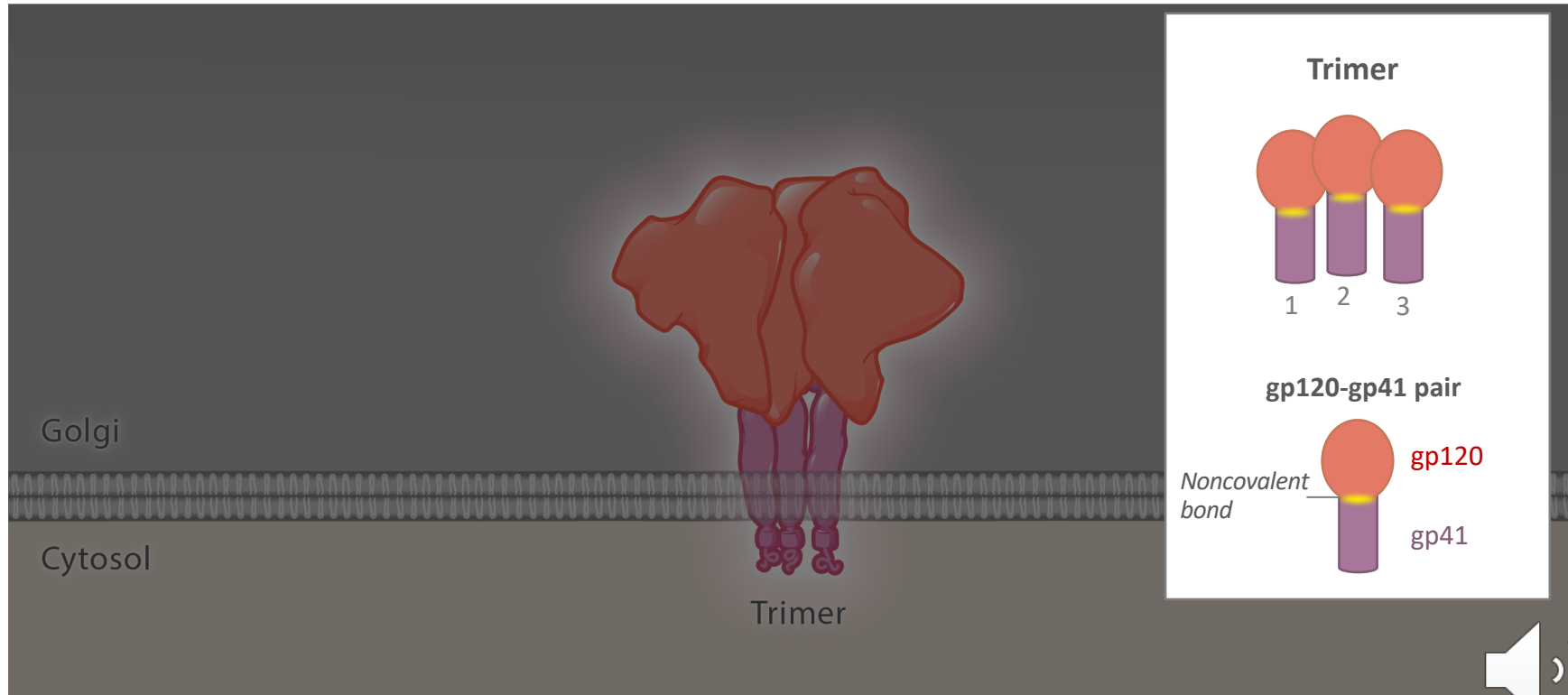
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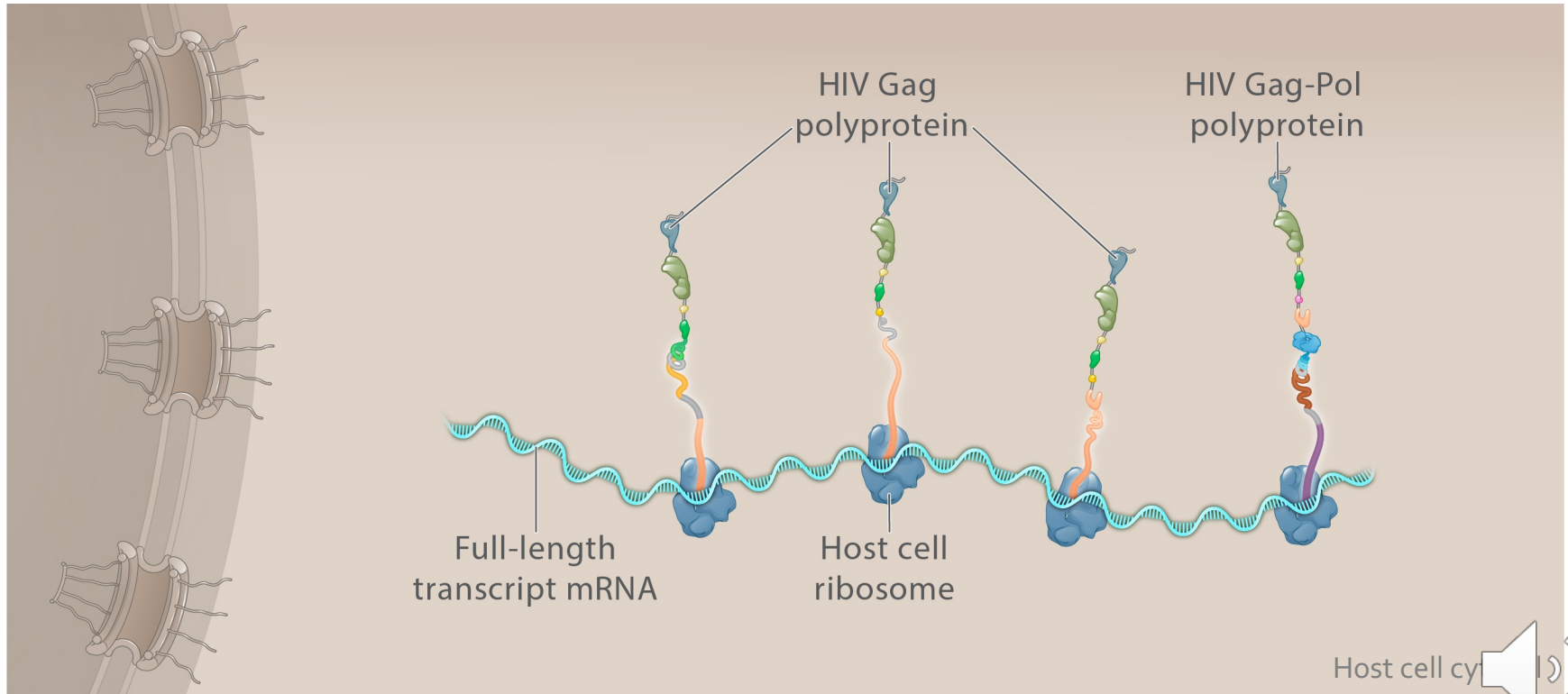
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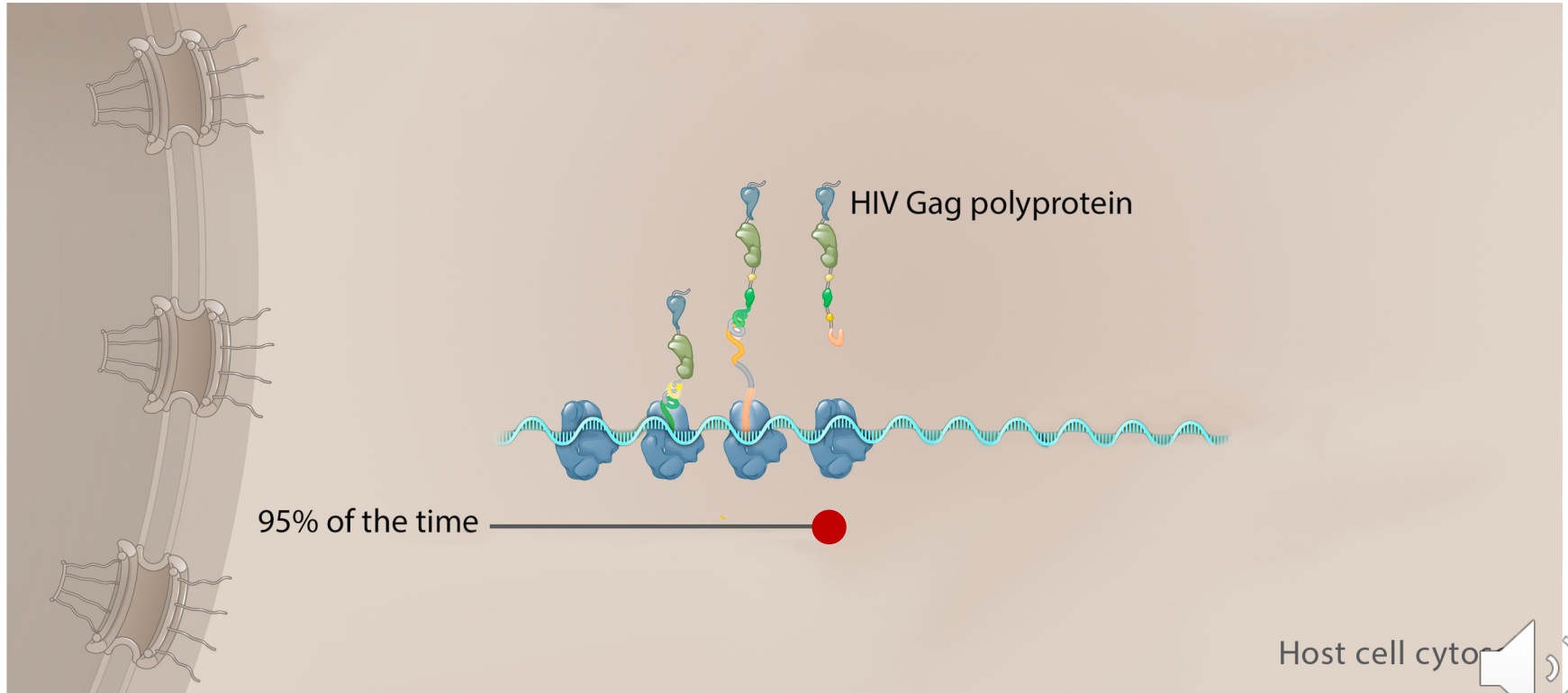
Translation



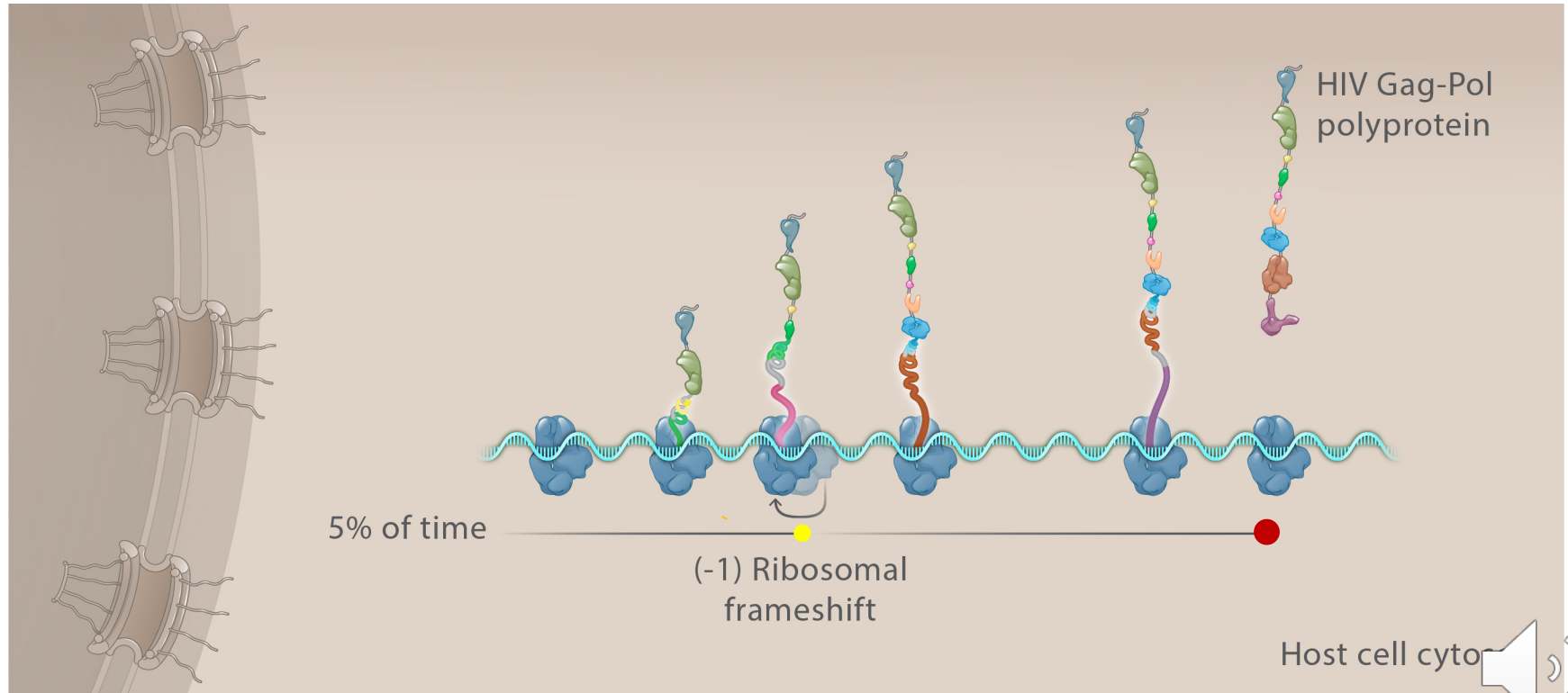
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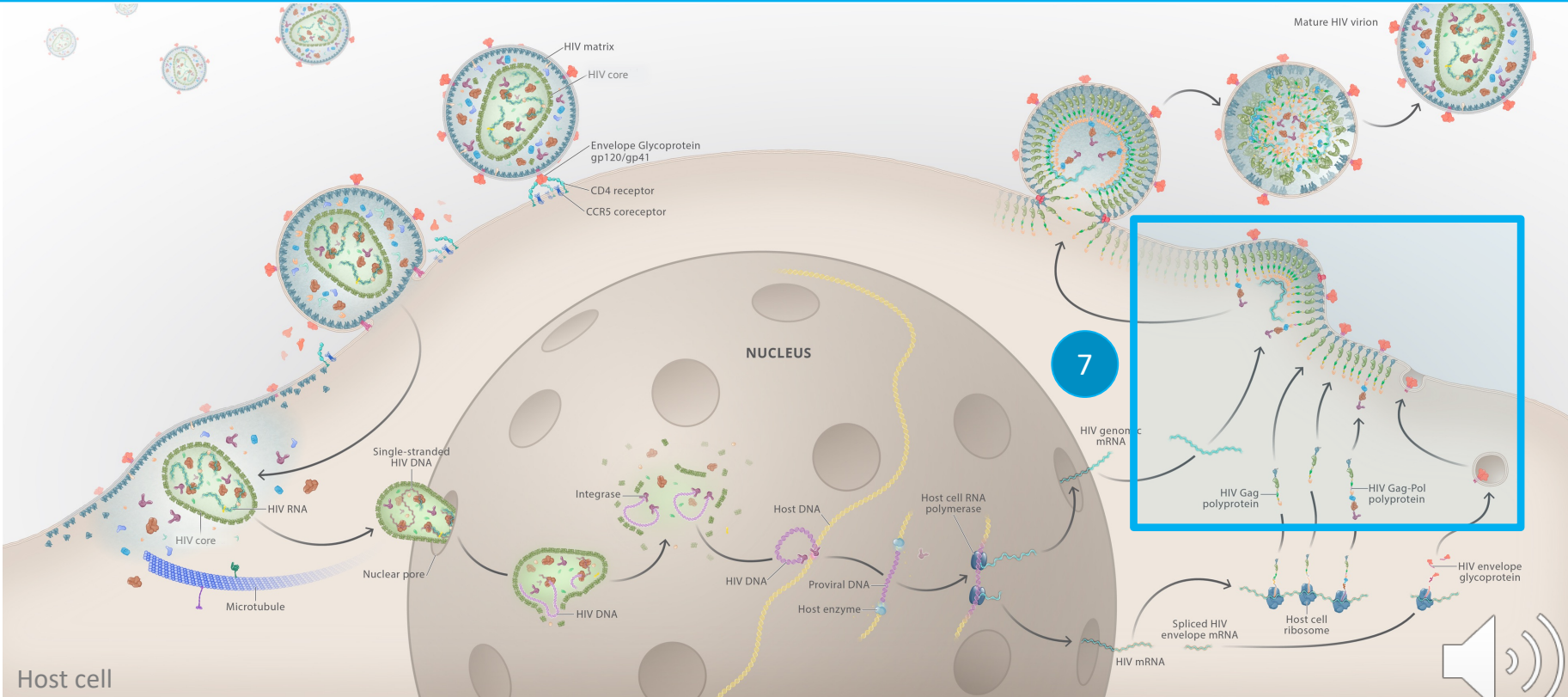
Translation



Translation



HIV Life Cycle Assembly



Assembly

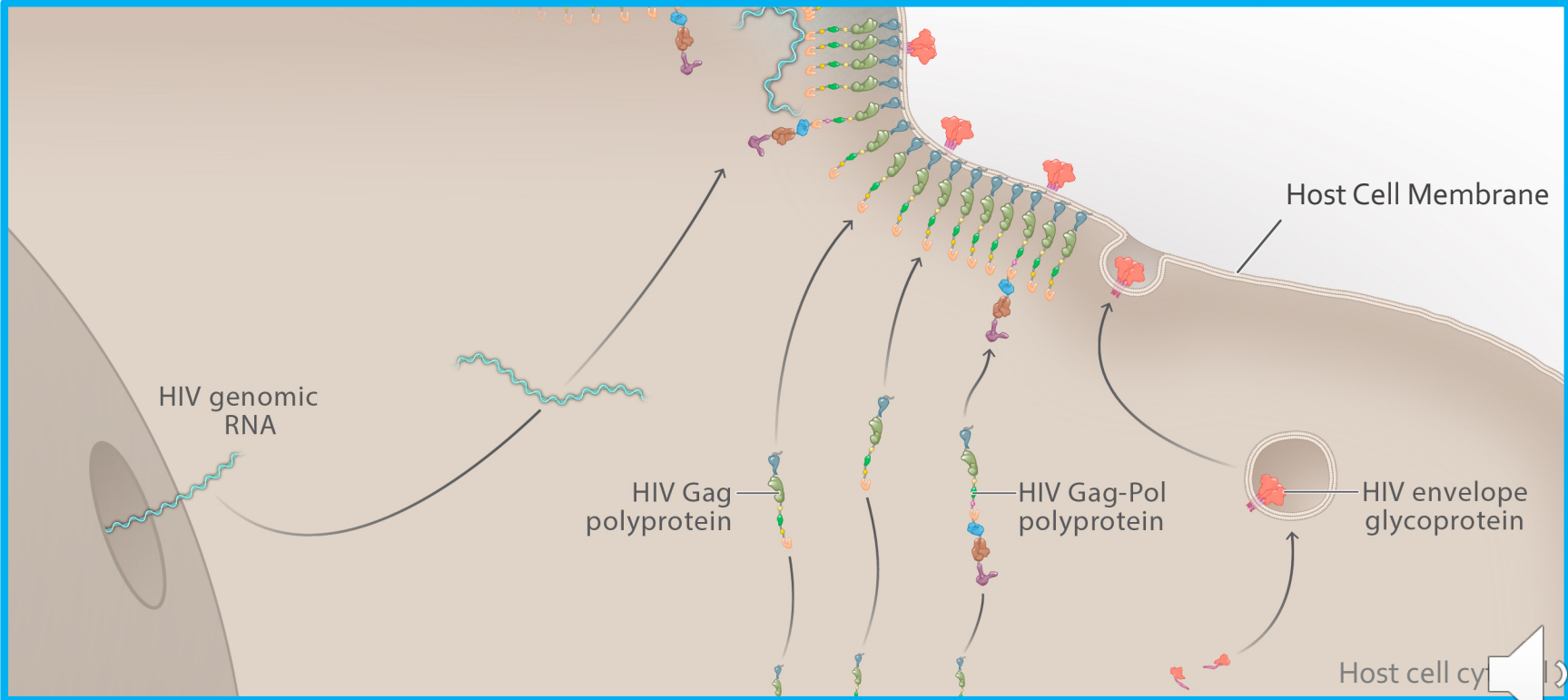
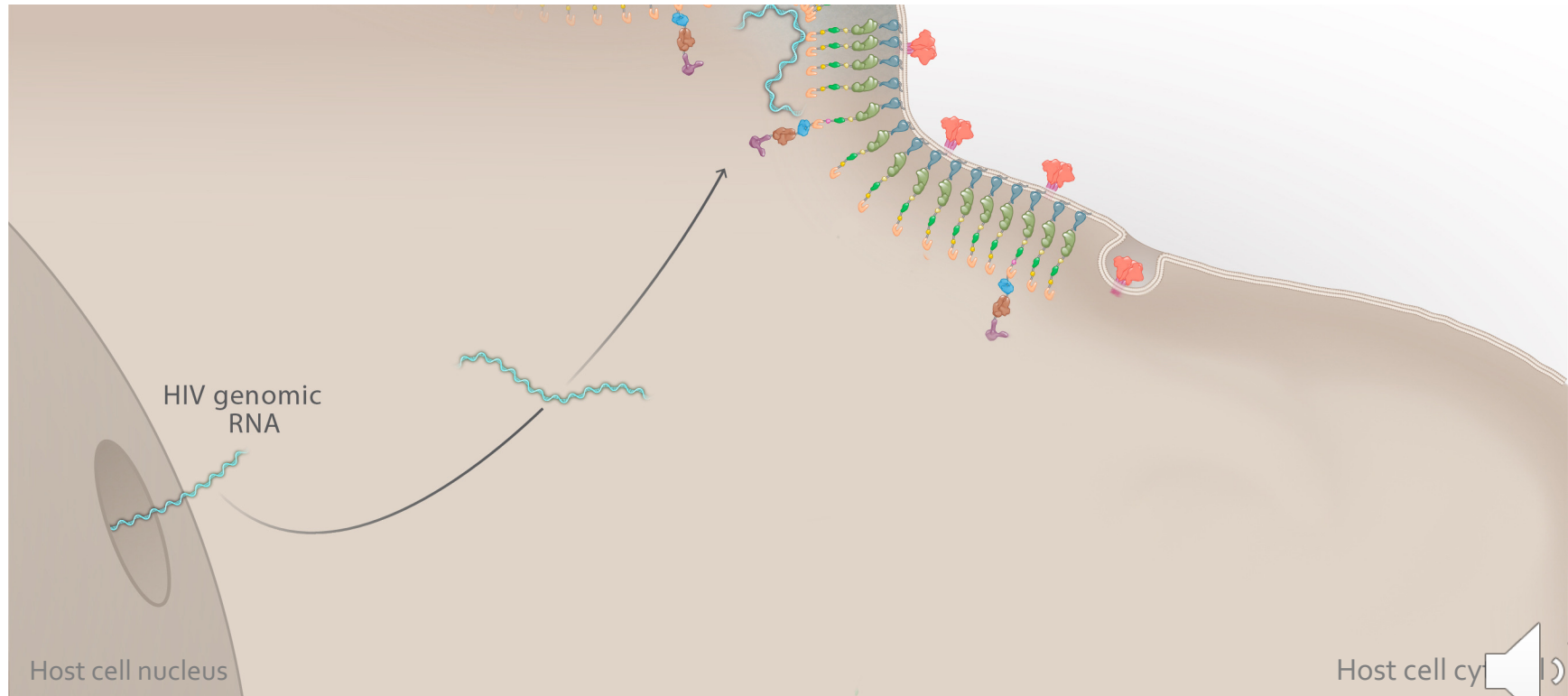
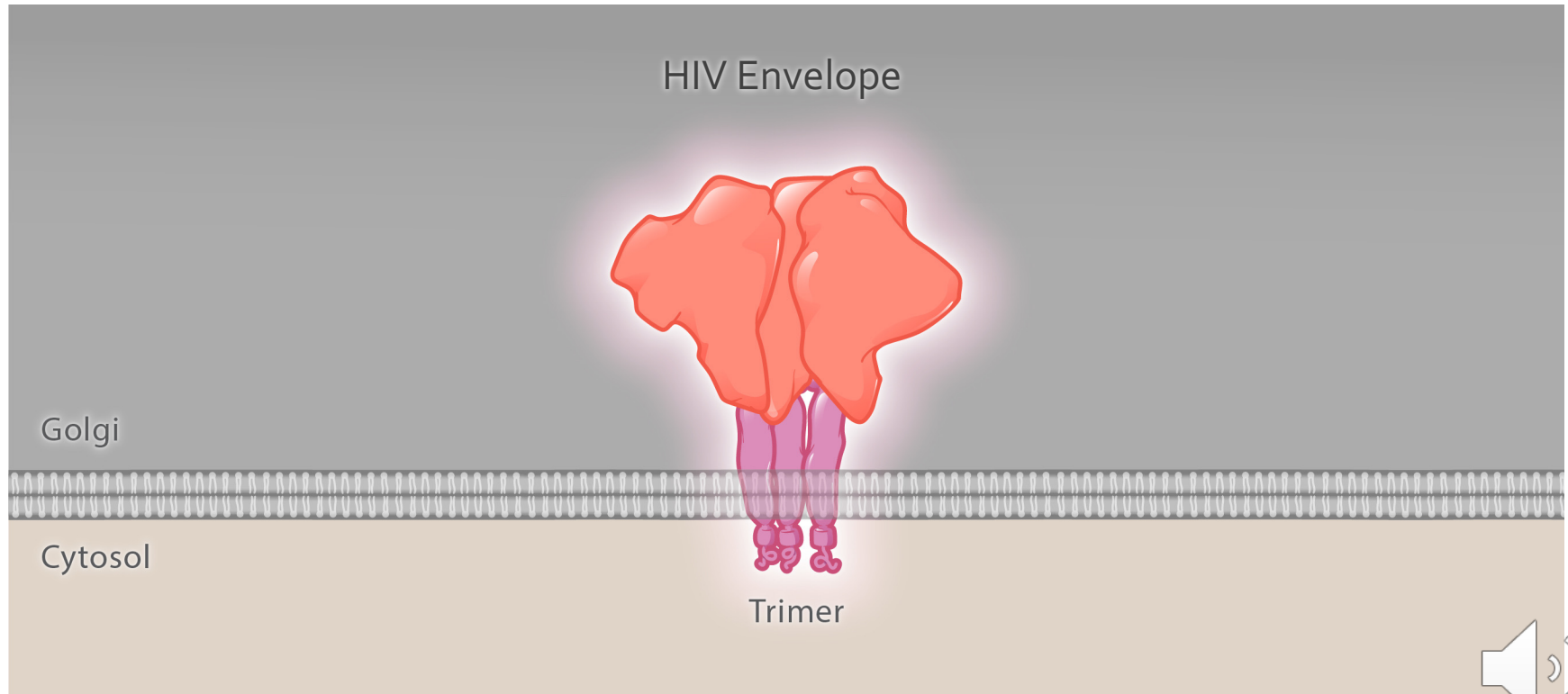


Illustration: Cognition Studio, Inc., and David H. Spach, MD

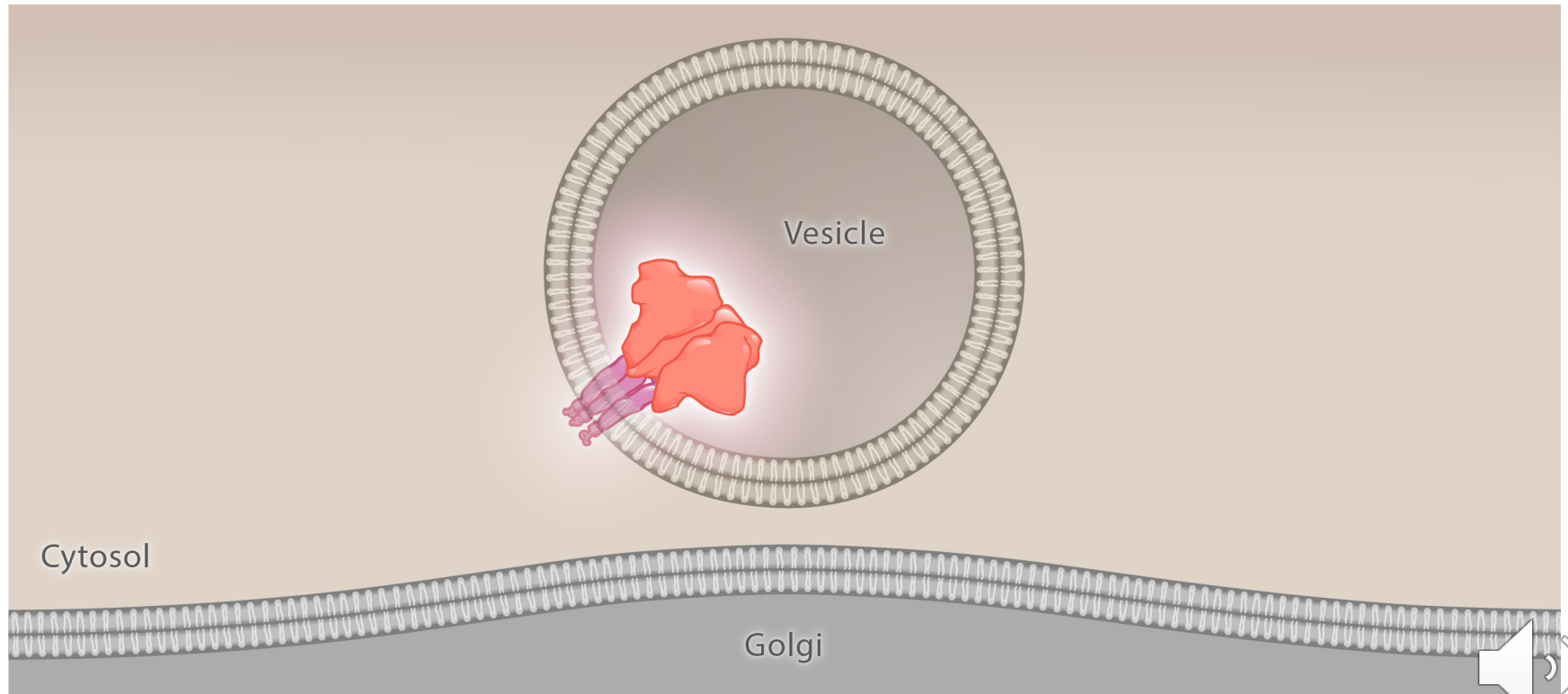
Assembly



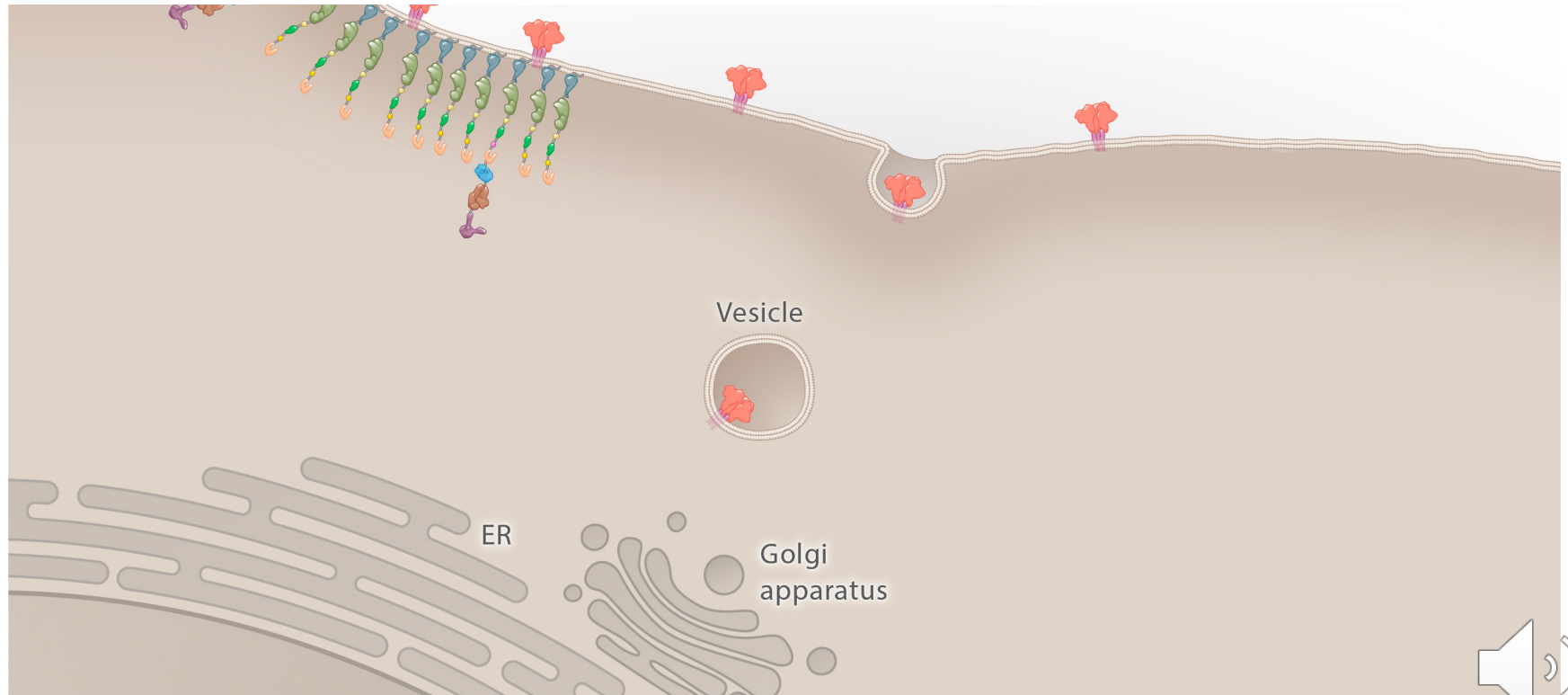
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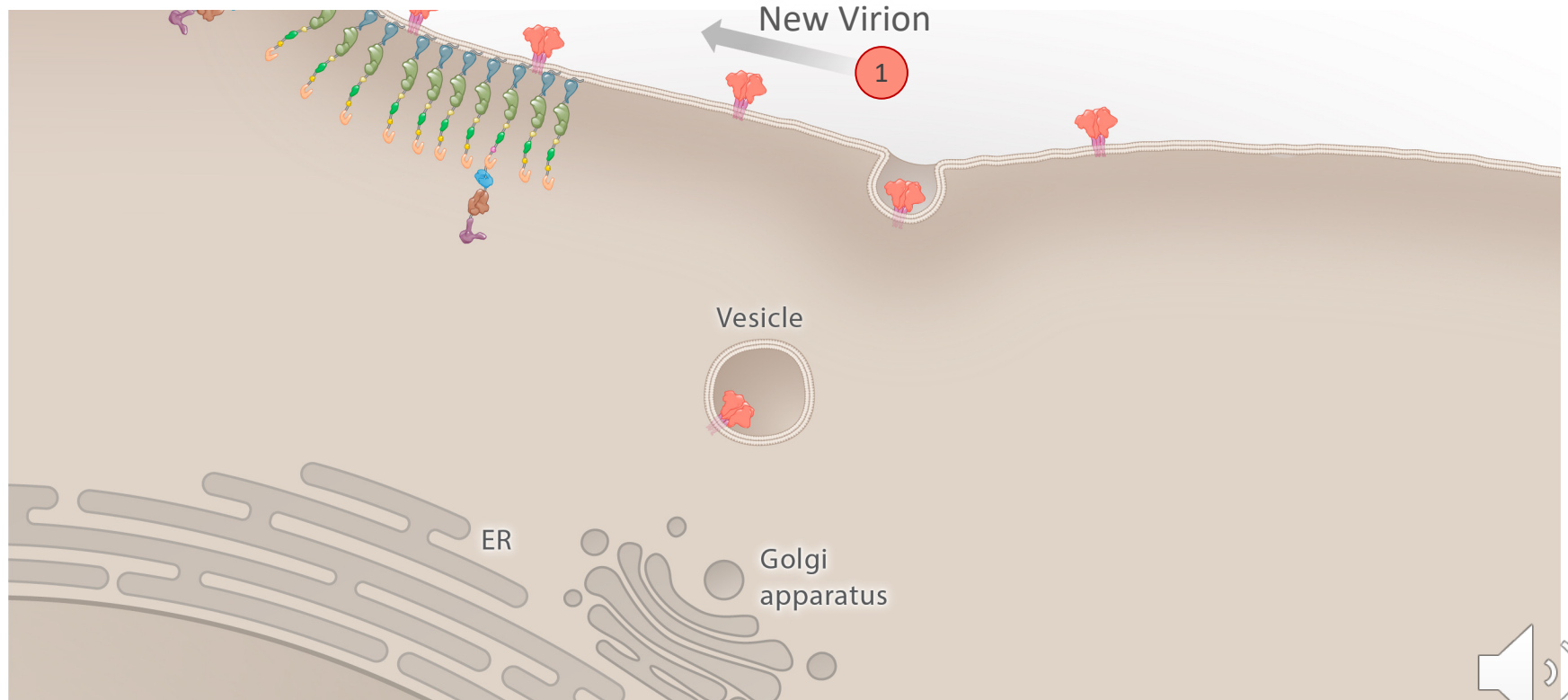
Assembly



Assembly



Assembly



Assembly

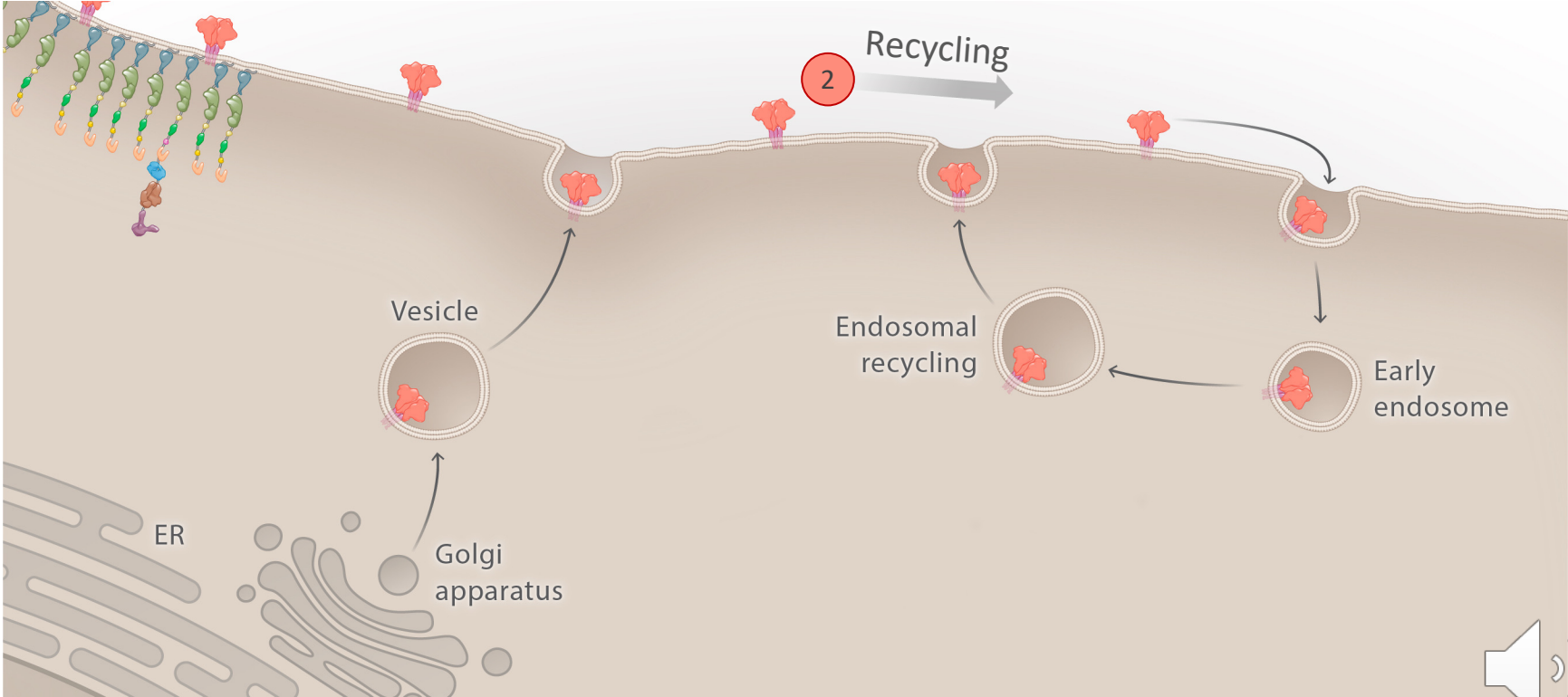


Illustration: Cognition Studio, Inc., and David H. Spach, MD

Assembly

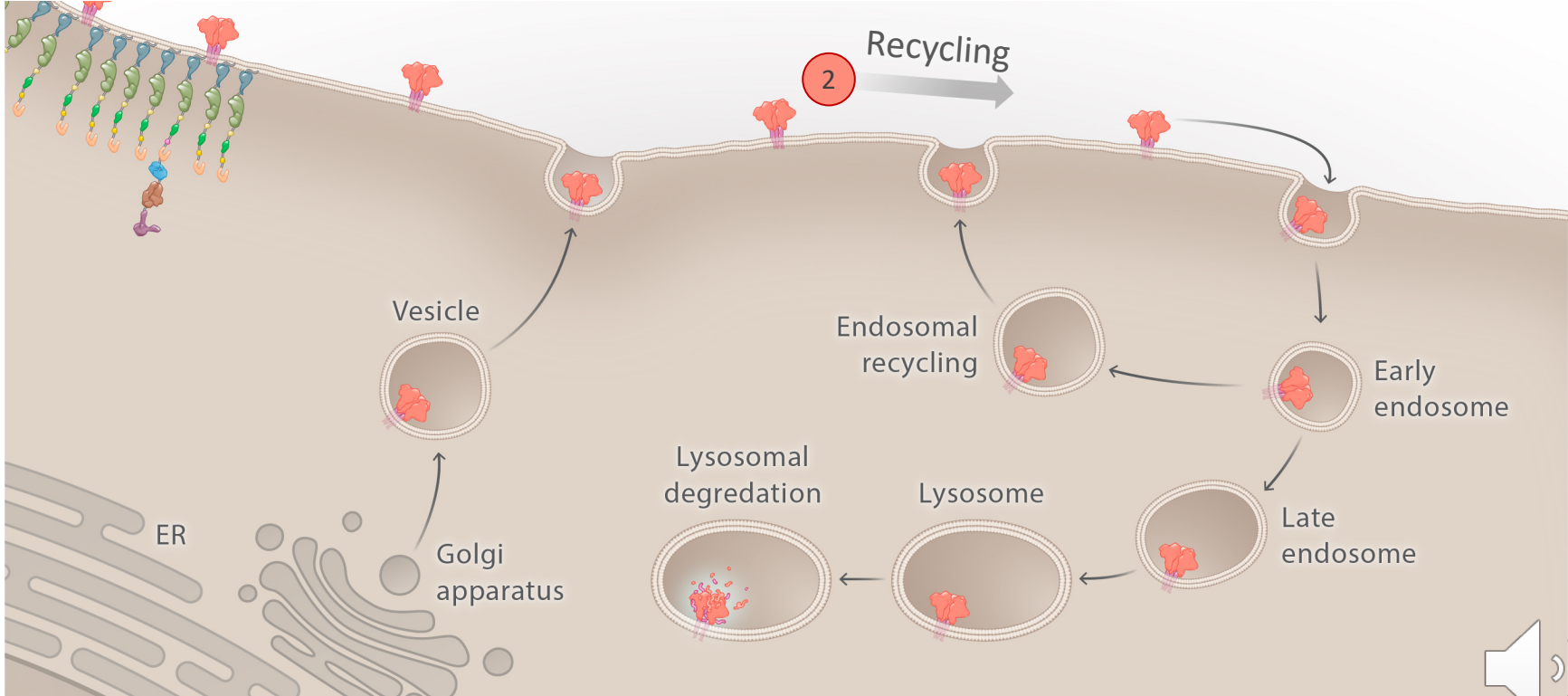
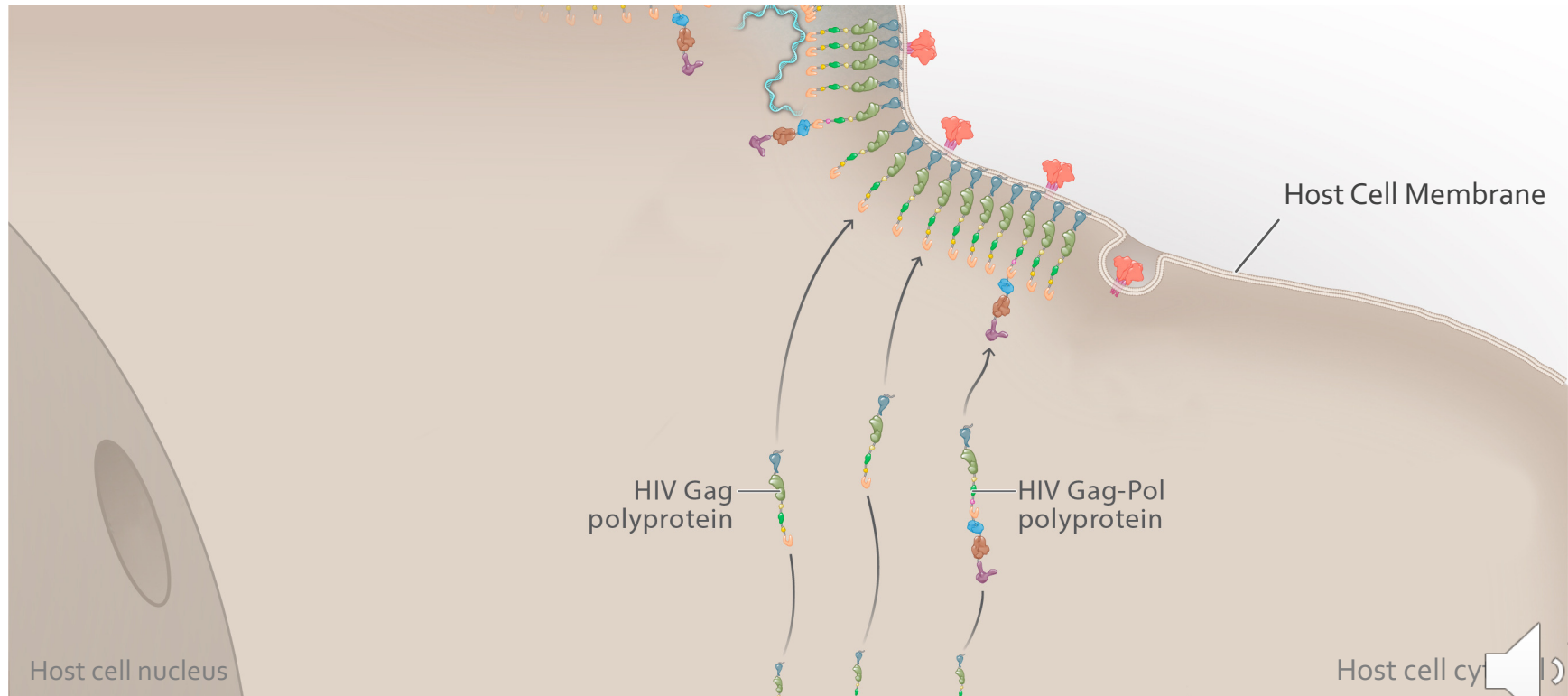
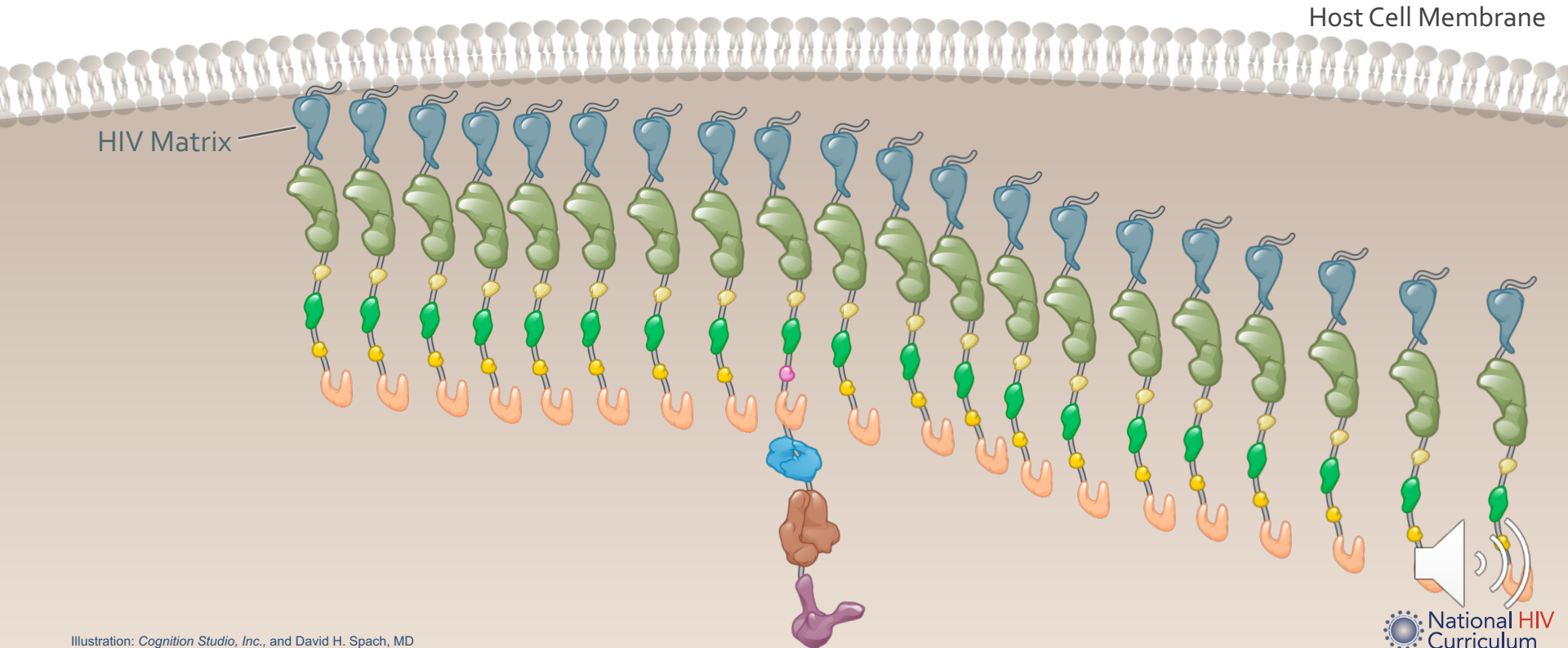


Illustration: Cognition Studio, Inc., and David H. Spach, MD

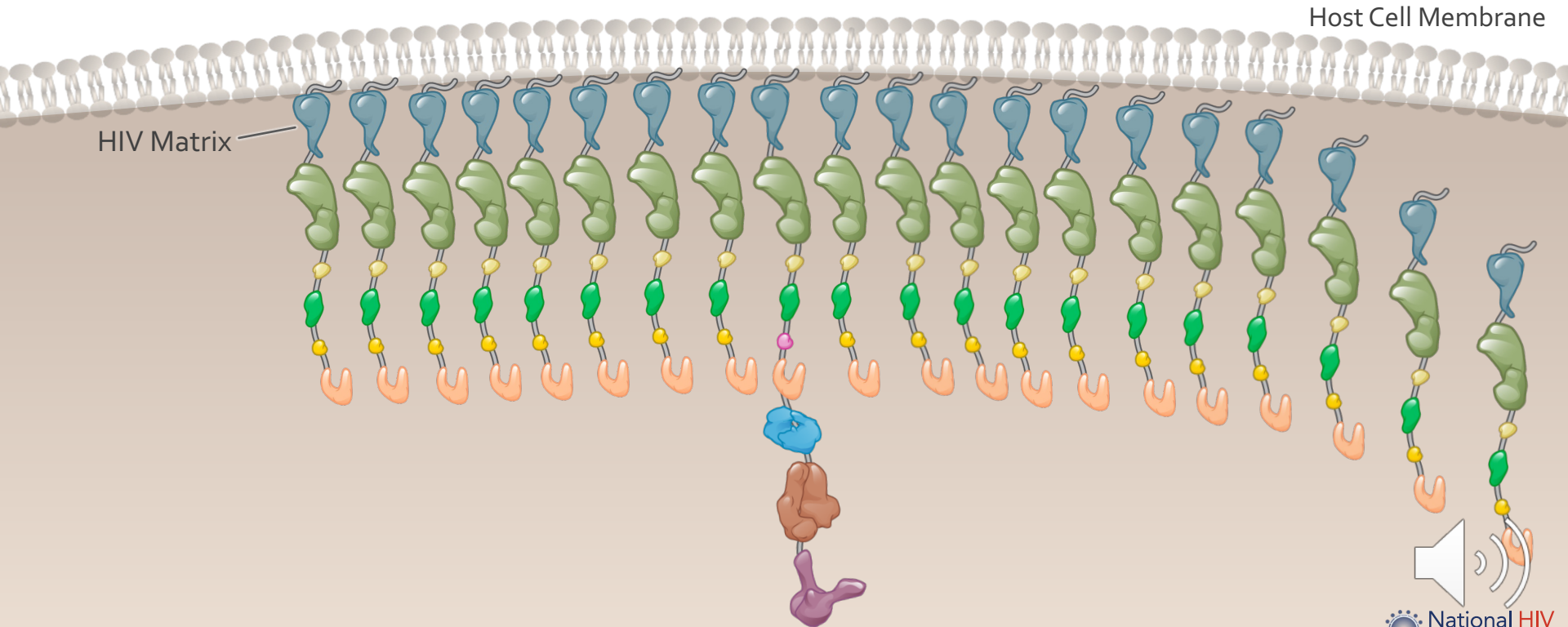
Assembly



Assembly



Assembly



Assembly

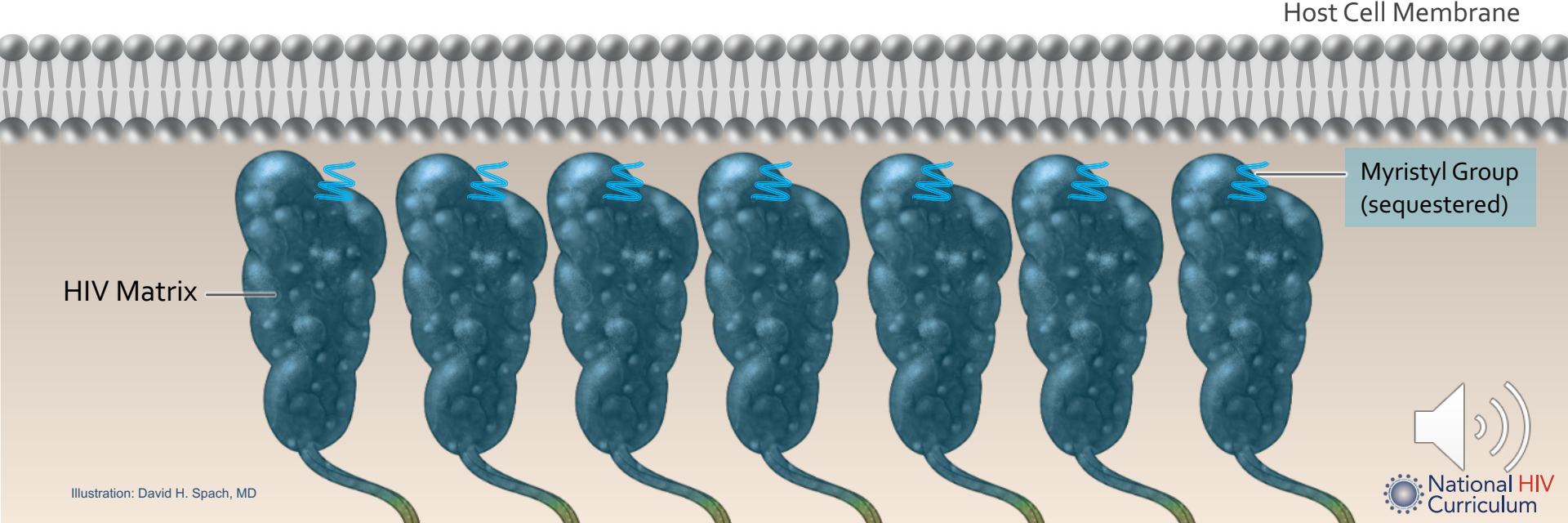


Illustration: David H. Spach, MD

Assembly



phosphatidylinositol-4,5-bisphosphate

Host Cell Membrane

Basic domain

HIV Matrix

Myristyl Group (sequestered)

Illustration: David H. Spach, MD



Assembly



phosphatidylinositol-4,5-bisphosphate

Host Cell Membrane

Basic domain

HIV Matrix

Myristyl Group (sequestered)

Illustration: David H. Spach, MD

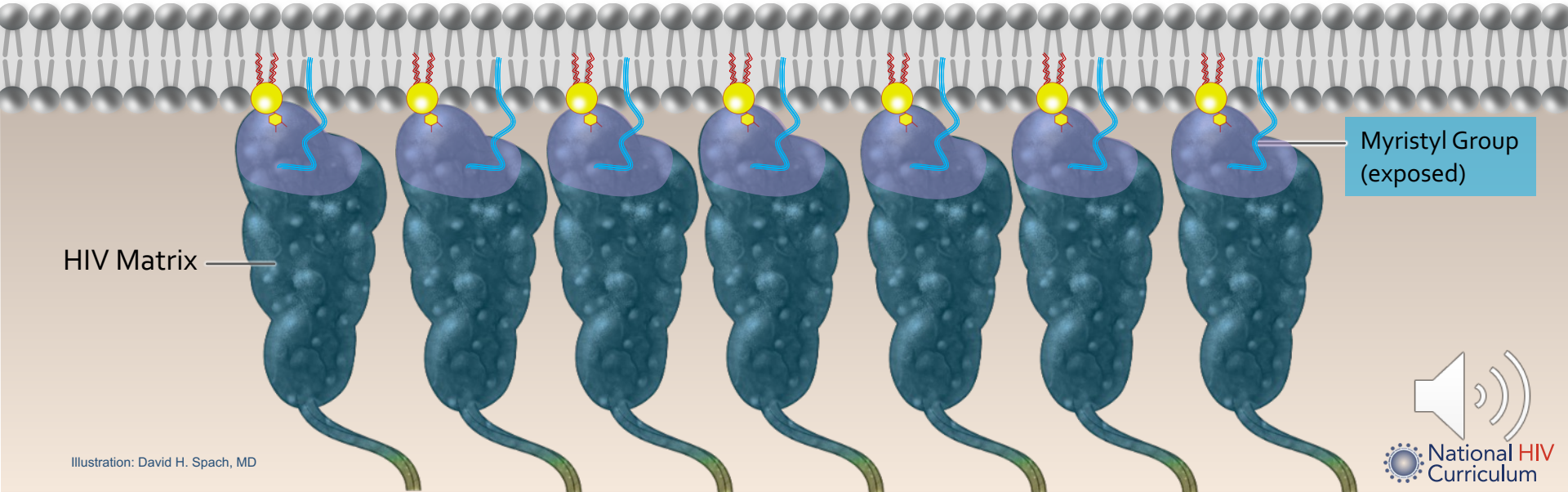


Assembly



phosphatidylinositol-4,5-bisphosphate

Host Cell Membrane



HIV Matrix

Myristyl Group (exposed)

Illustration: David H. Spach, MD

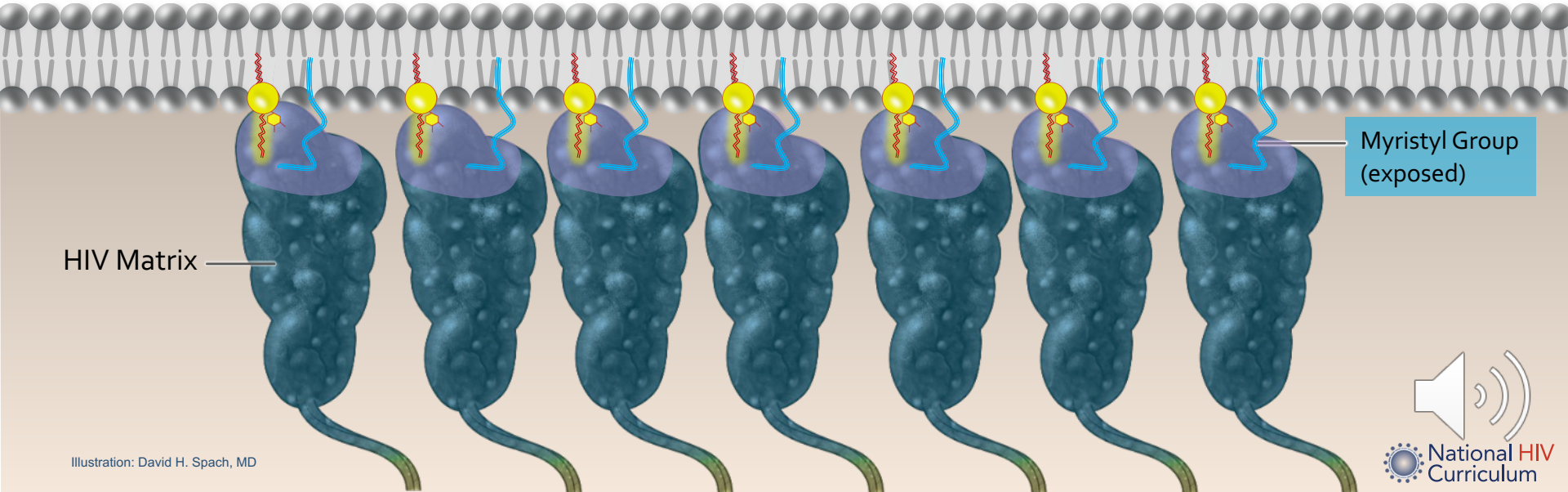


Assembly



phosphatidylinositol-4,5-bisphosphate

Host Cell Membrane



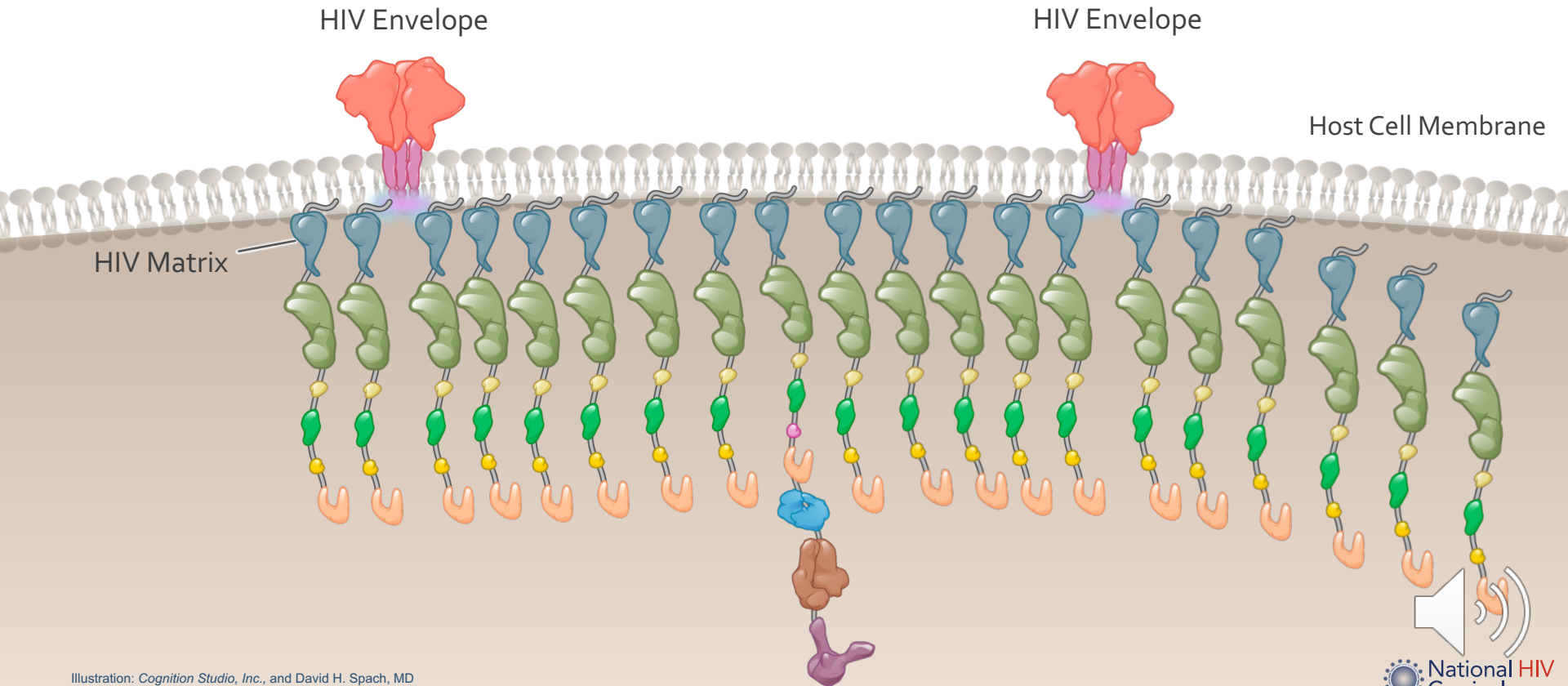
HIV Matrix

Myristyl Group (exposed)

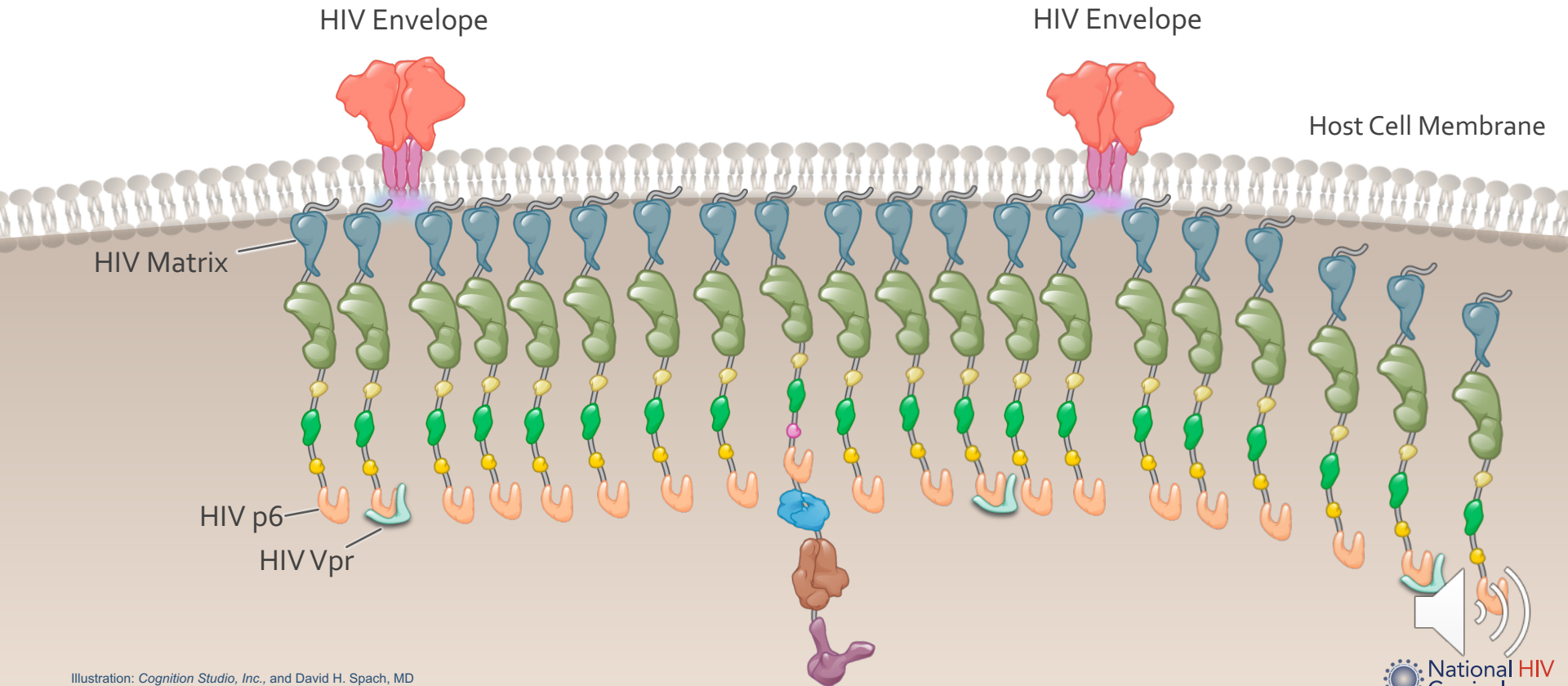
Illustration: David H. Spach, MD



Assembly

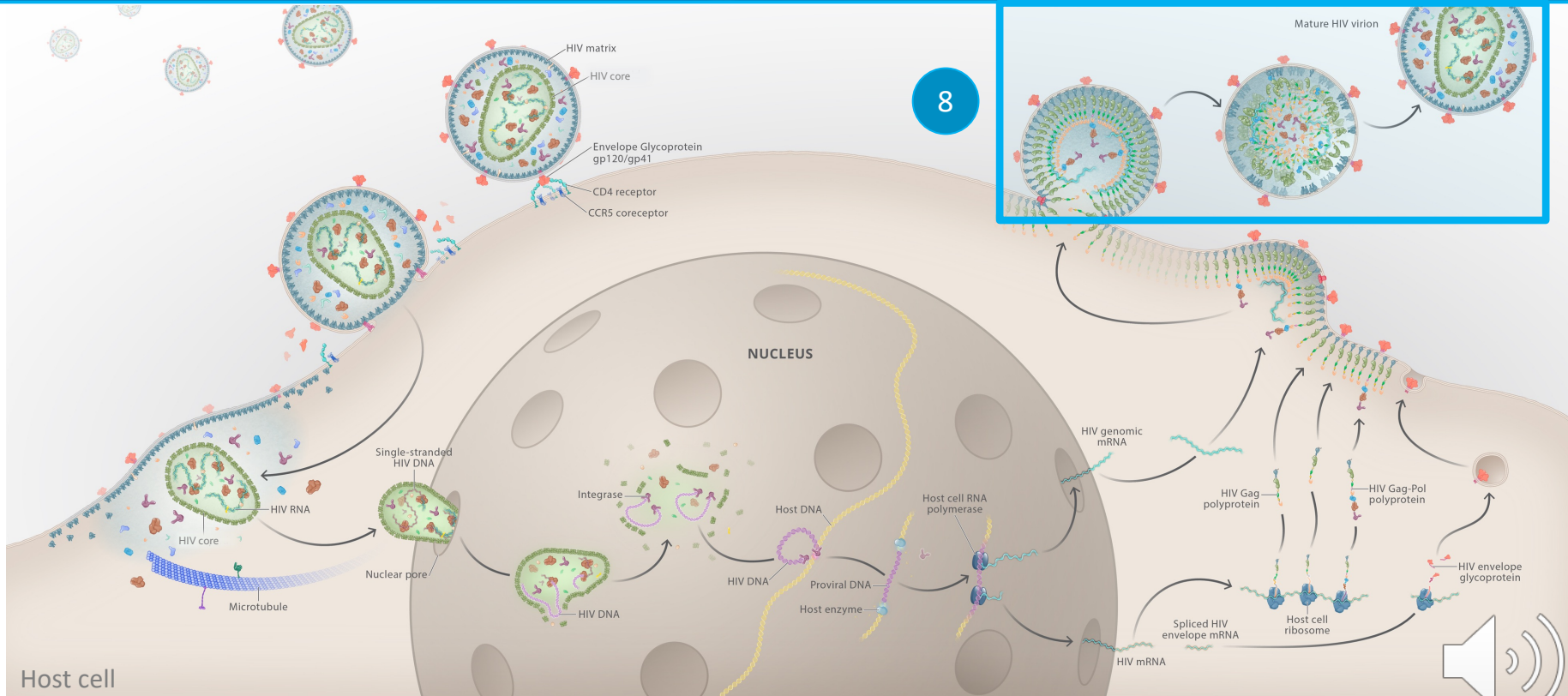


Assembly

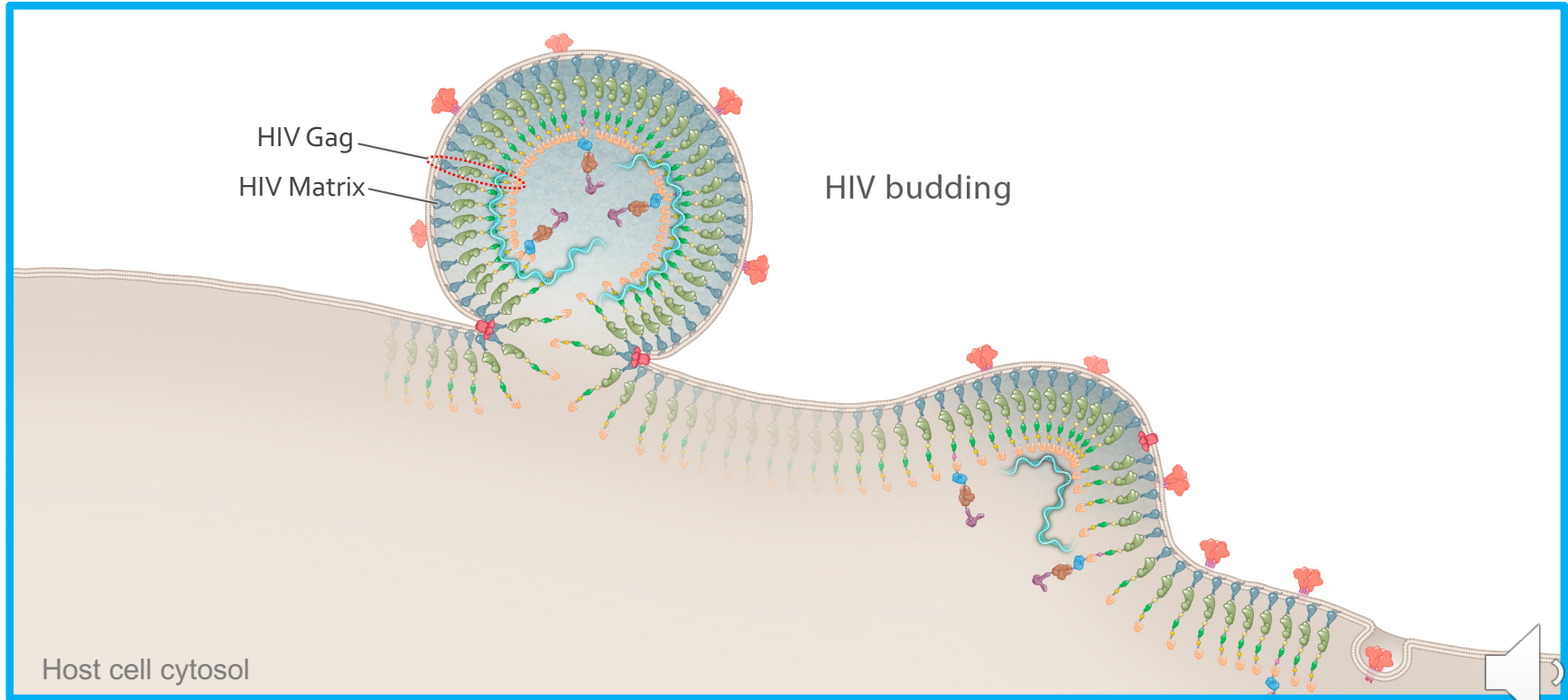


HIV Life Cycle

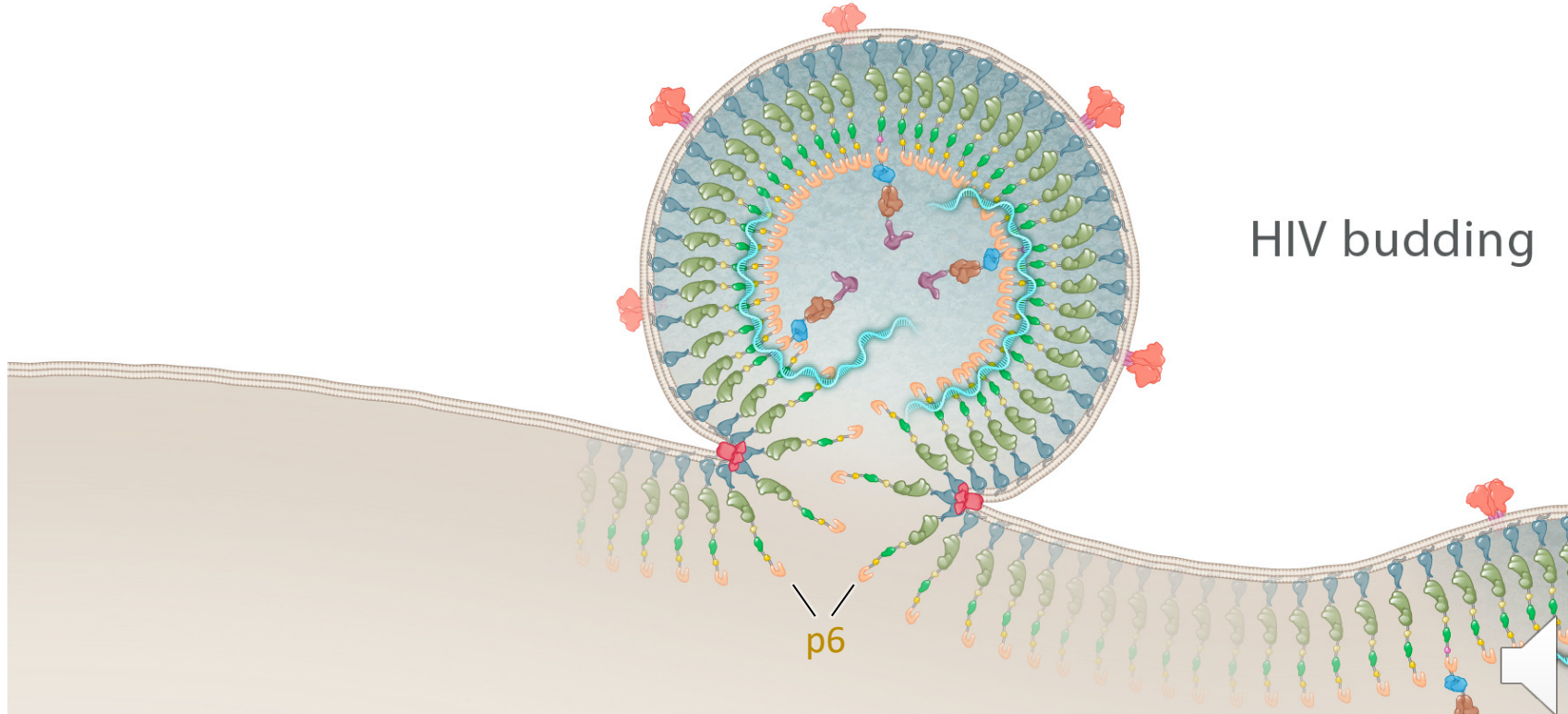
Budding and Maturation



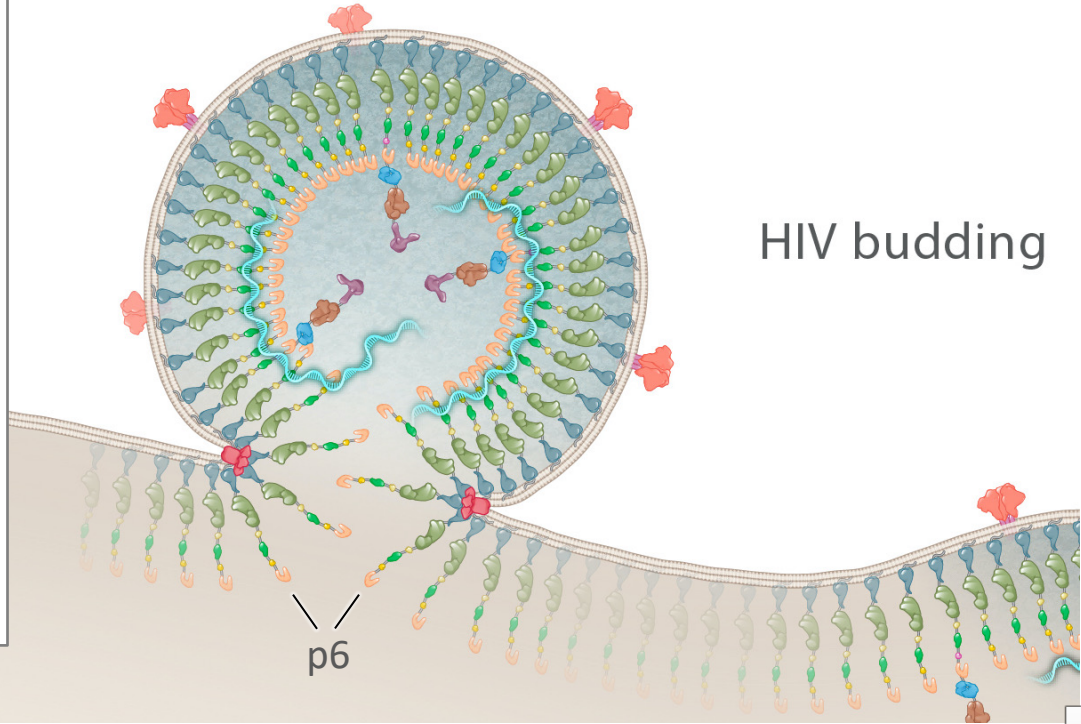
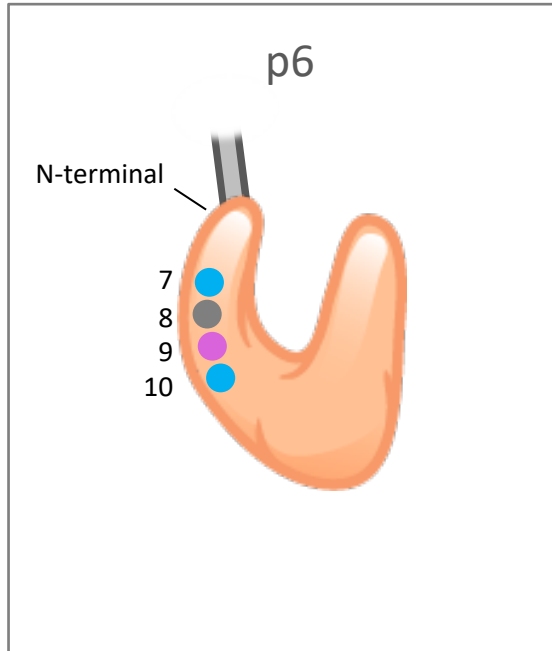
Budding and Maturation



Budding and Maturation

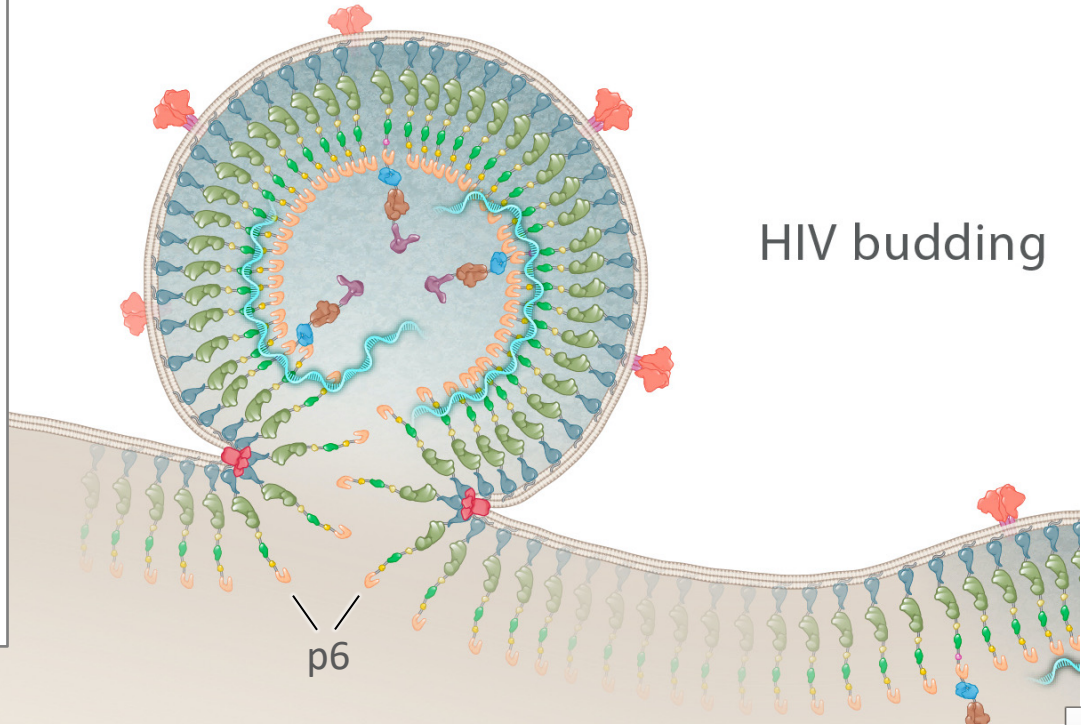
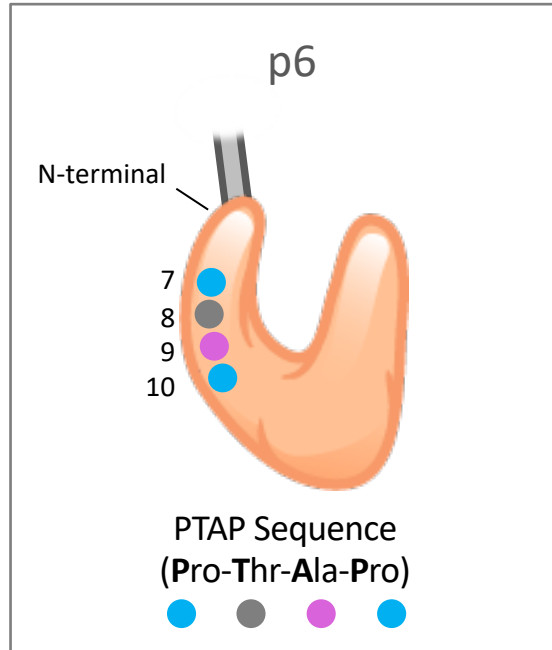


Budding and Maturation

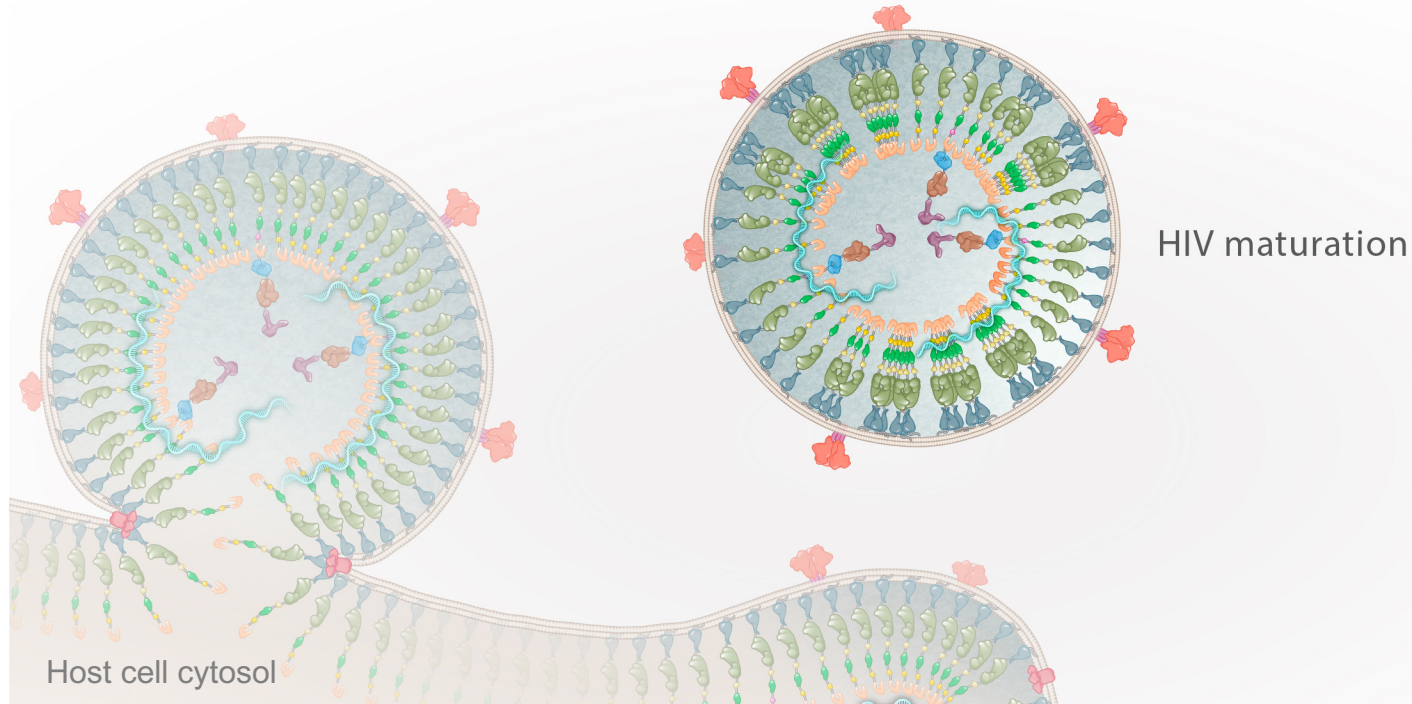


HIV budding

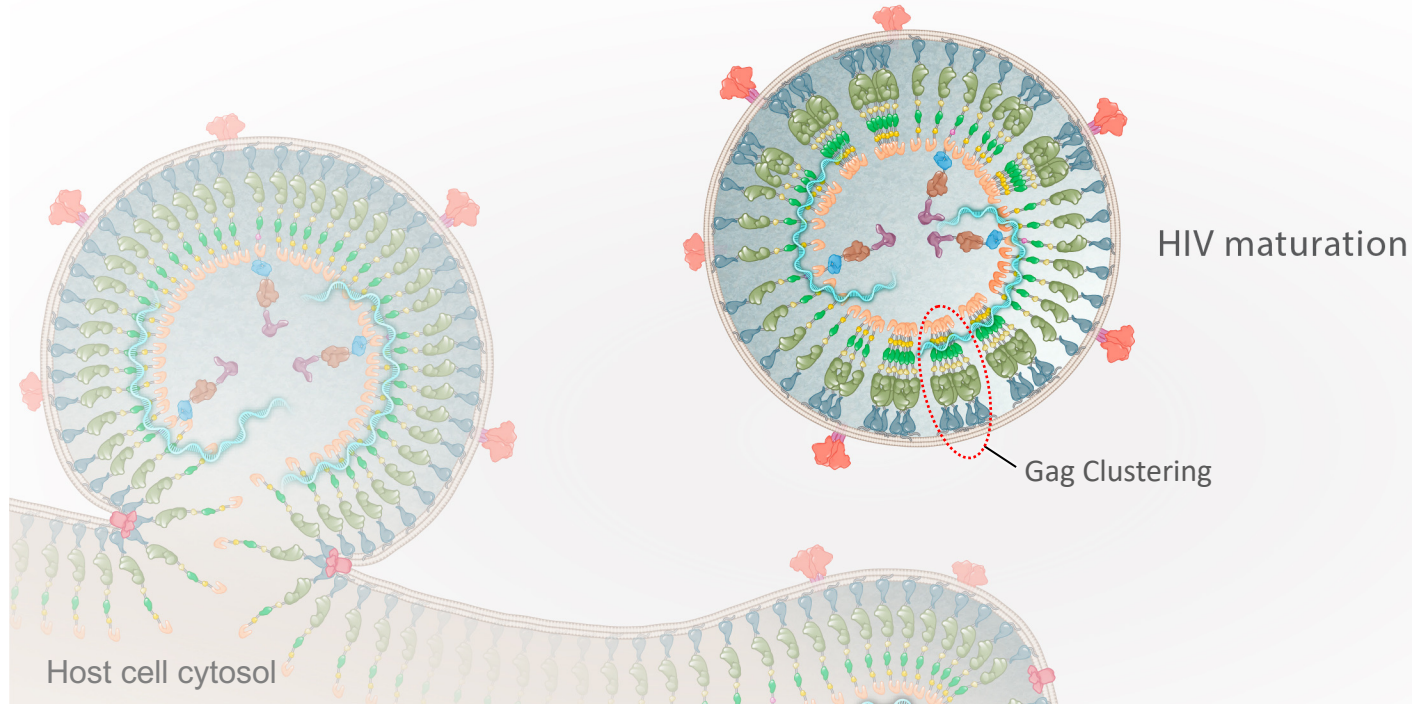
Budding and Maturation



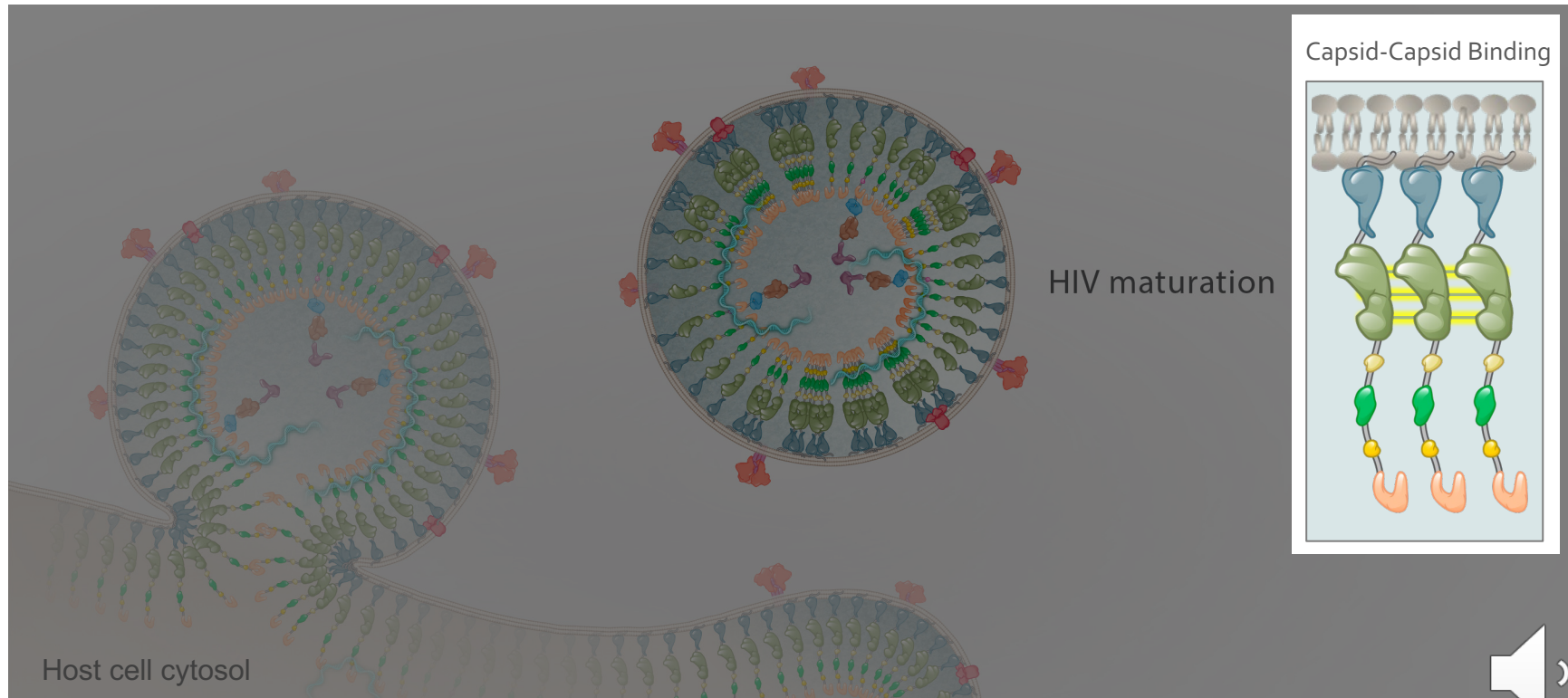
Budding and Maturation



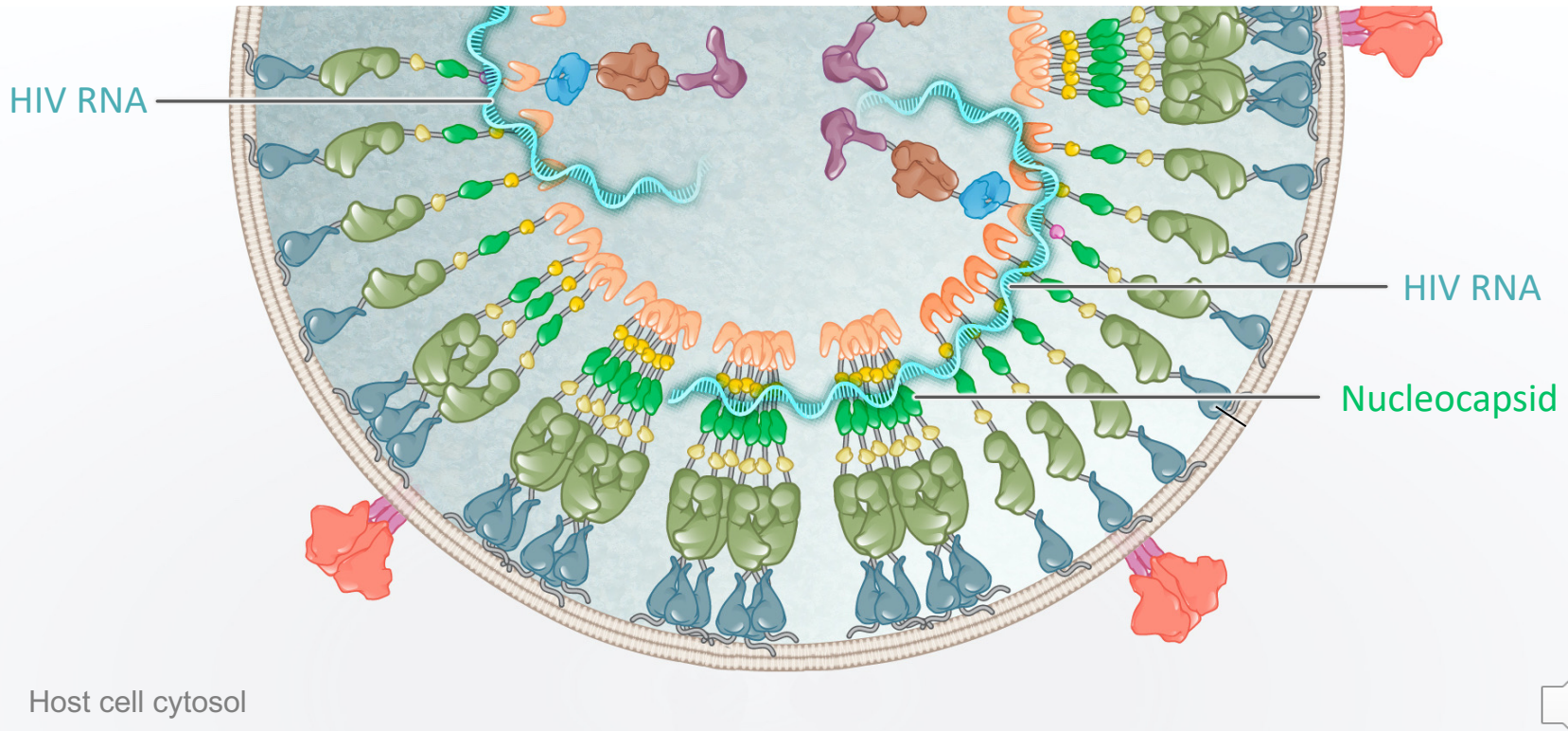
Budding and Maturation



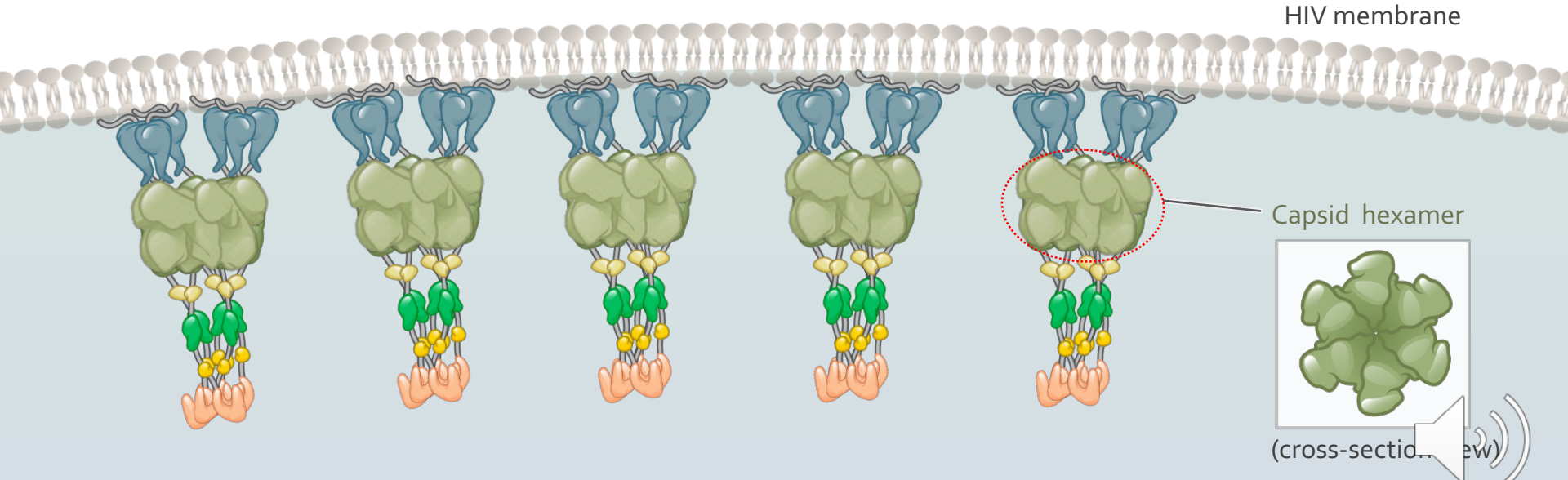
Budding and Maturation



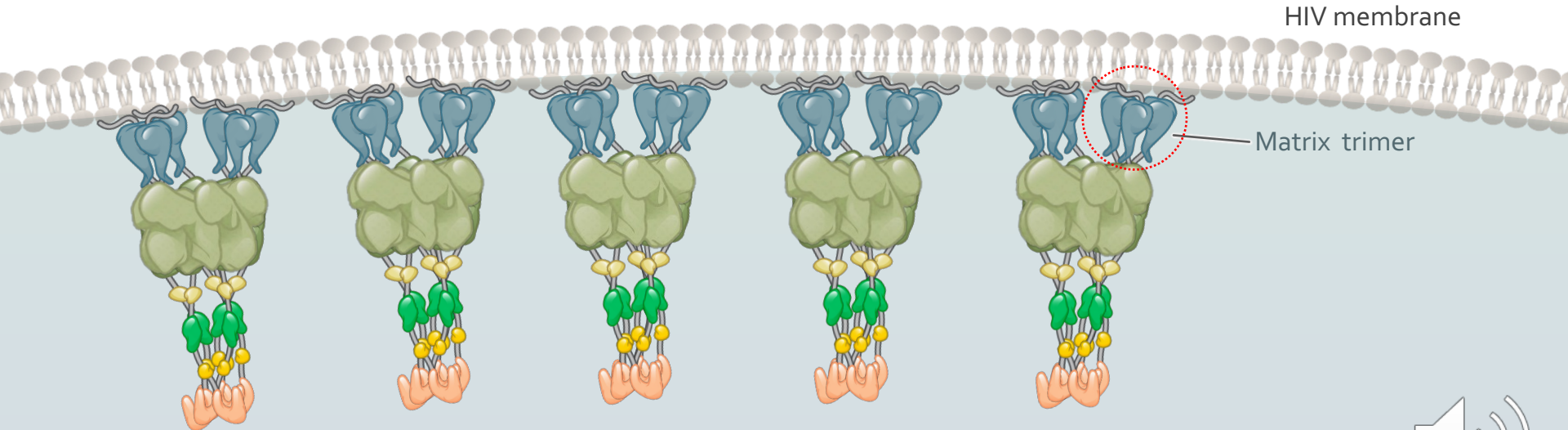
Budding and Maturation



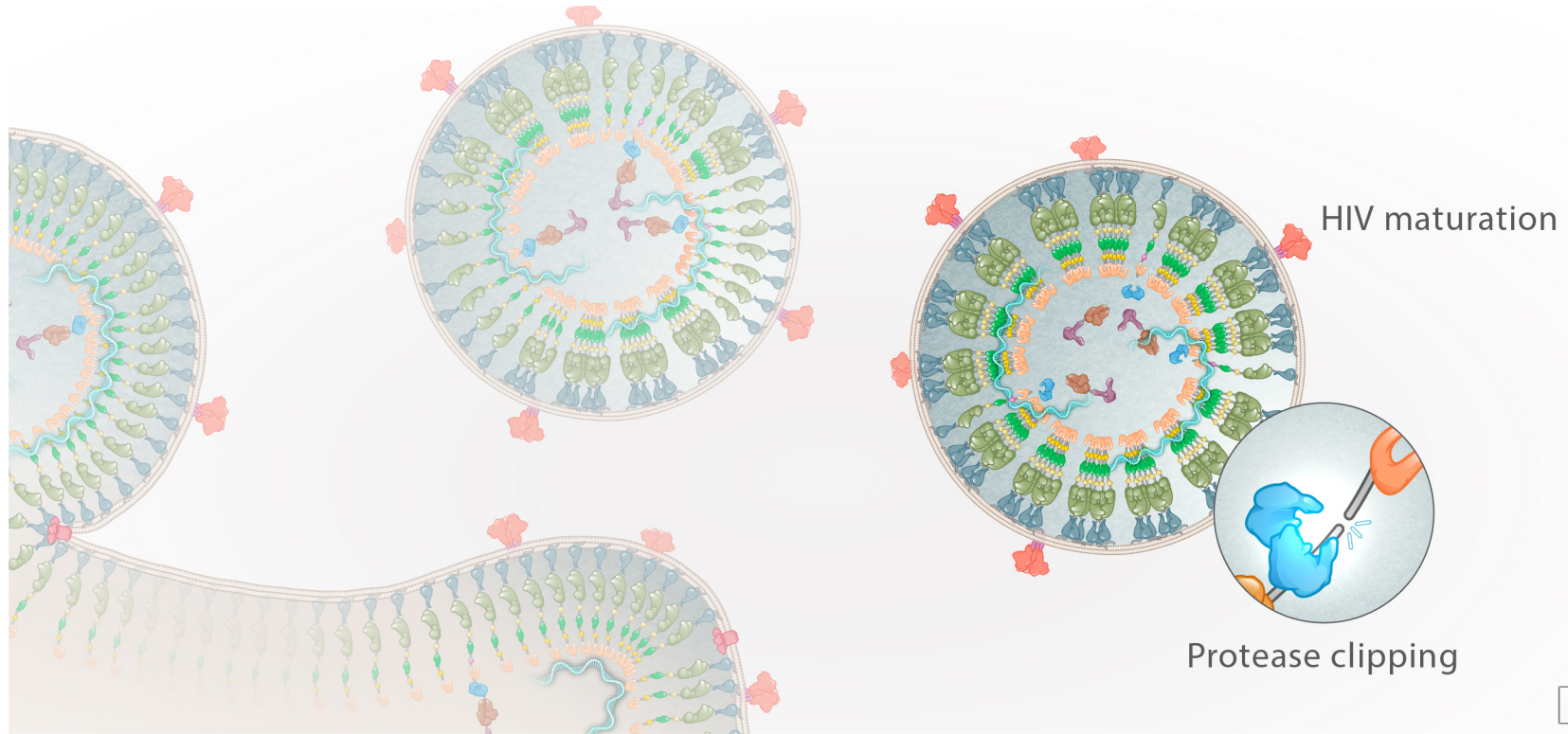
Budding and Maturation



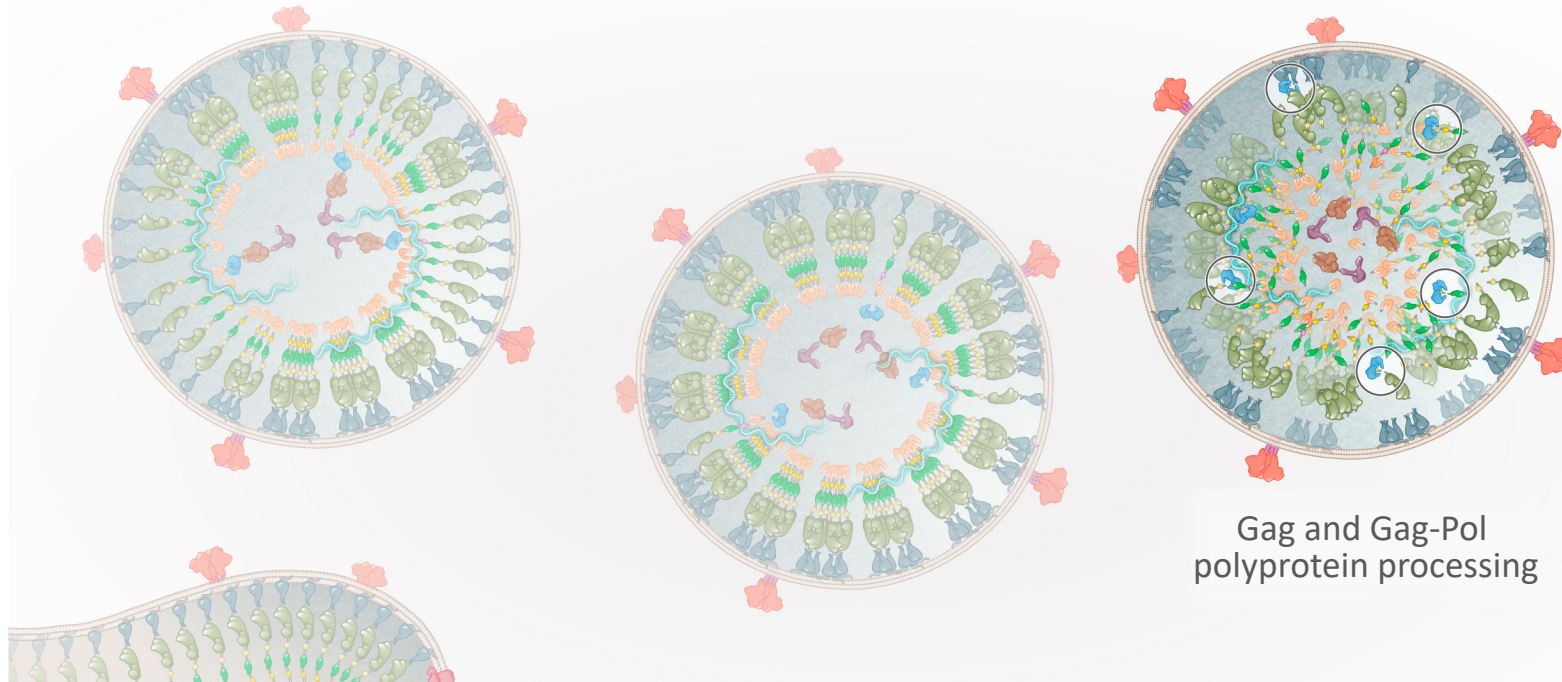
Budding and Maturation



Budding and Maturation

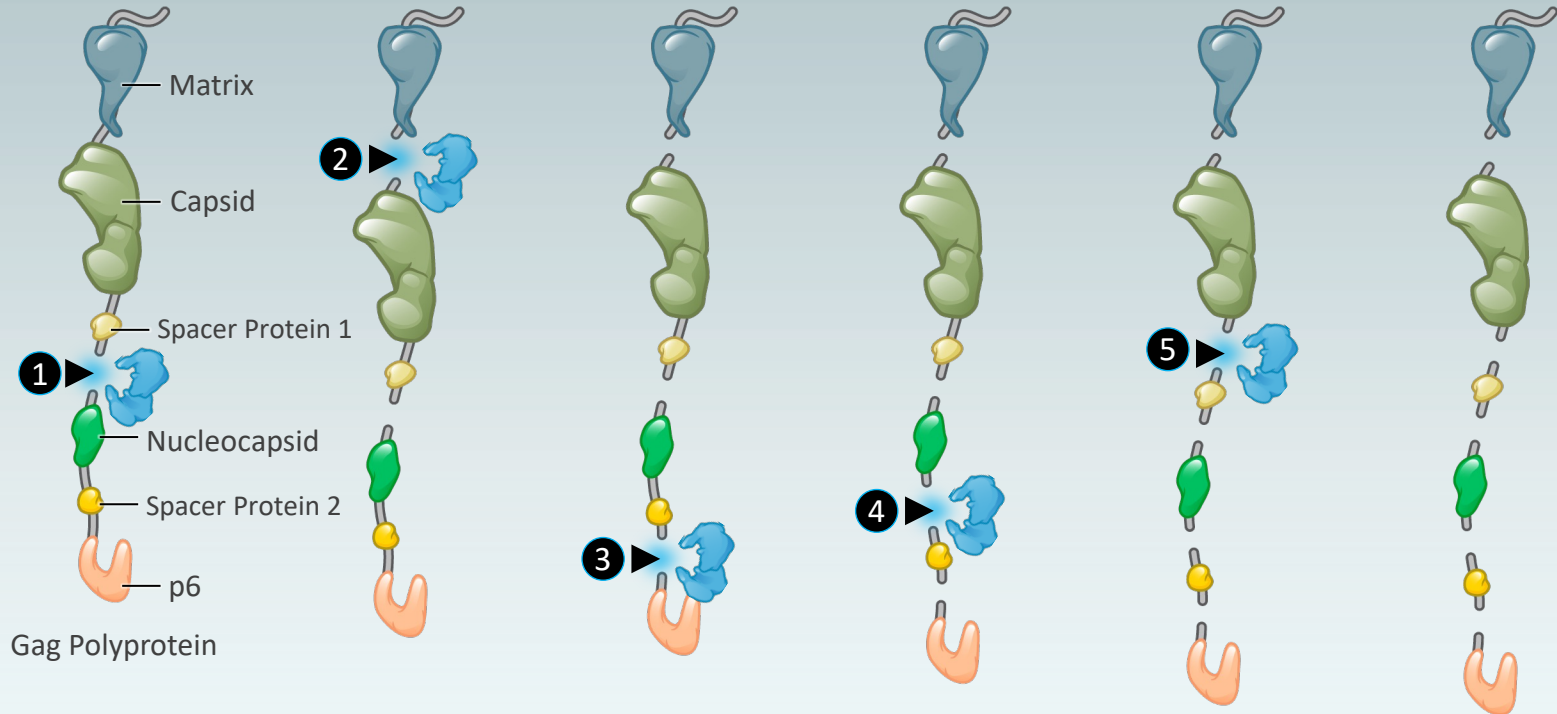


Budding and Maturation



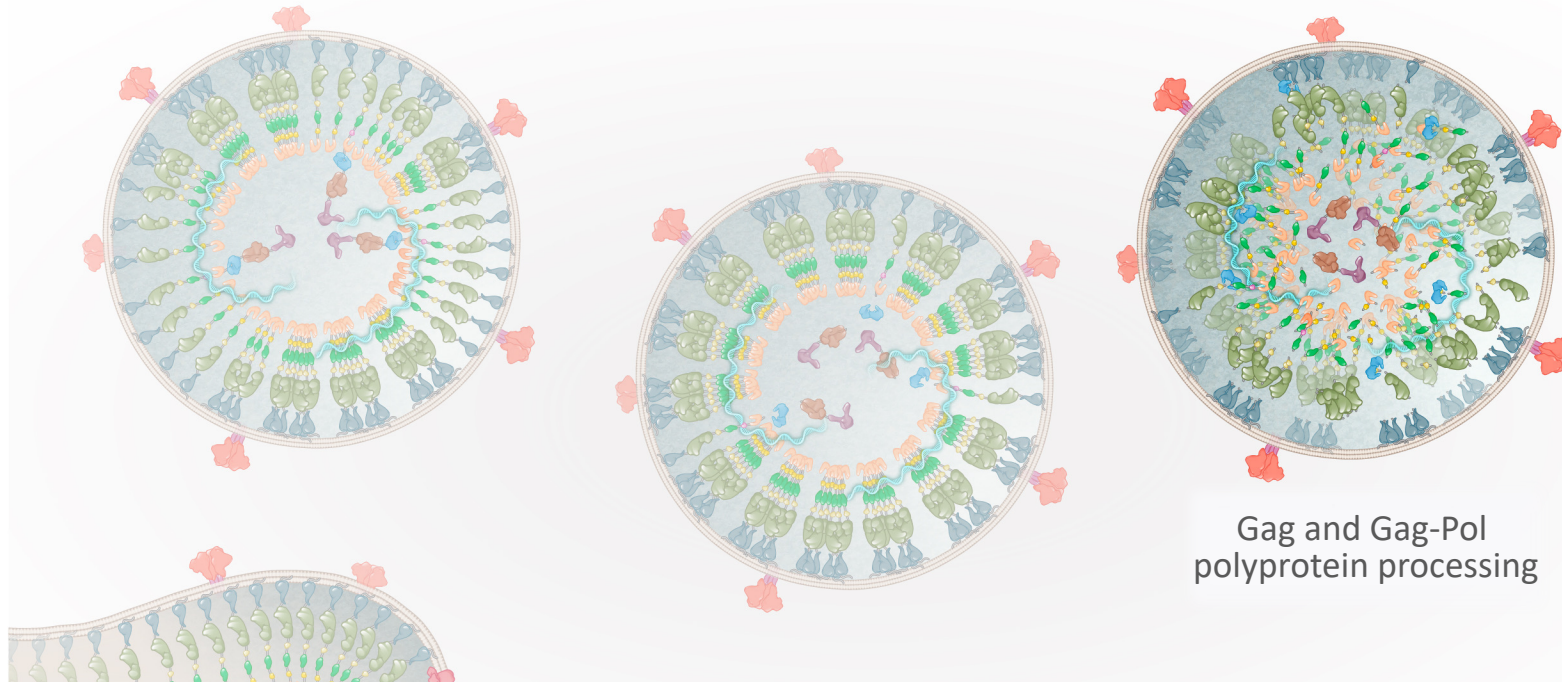
Budding and Maturation

Processing of Gag Polyprotein

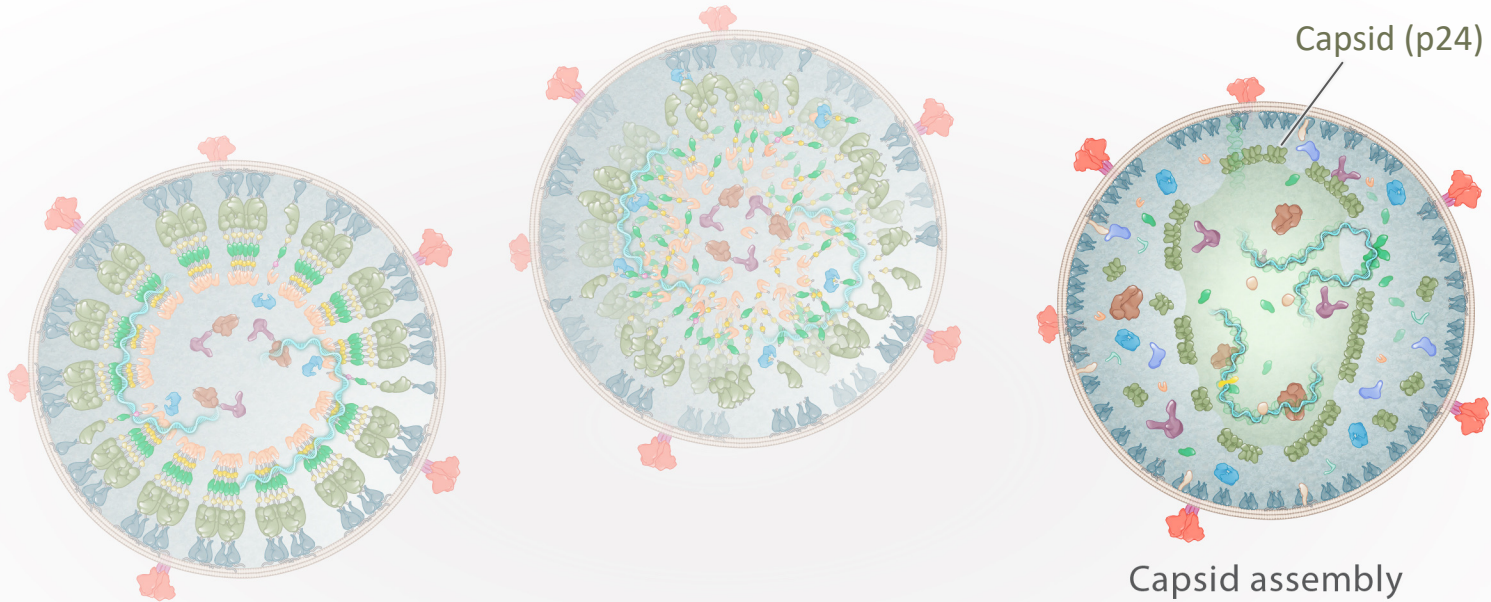


Budding and Maturation

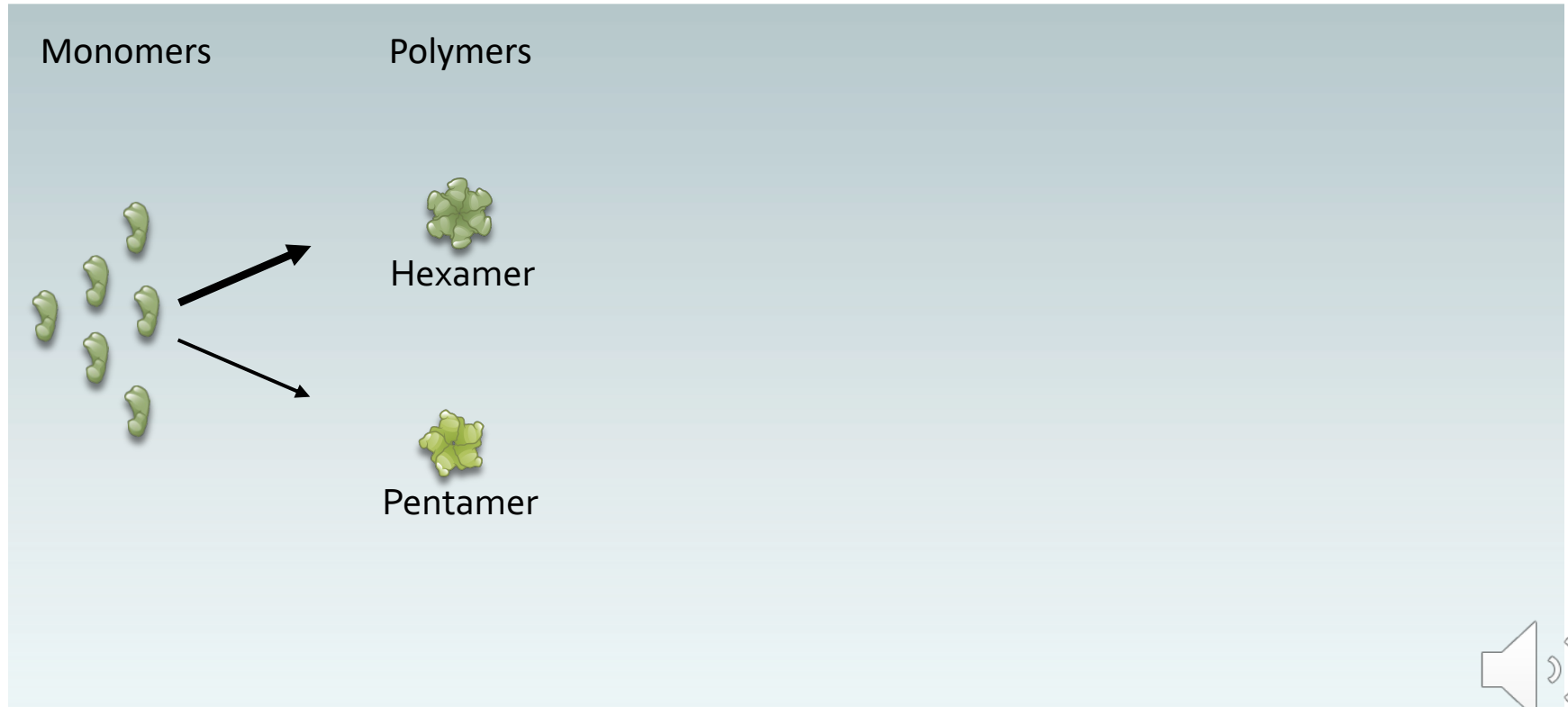
Processing of Gag Polyprotein



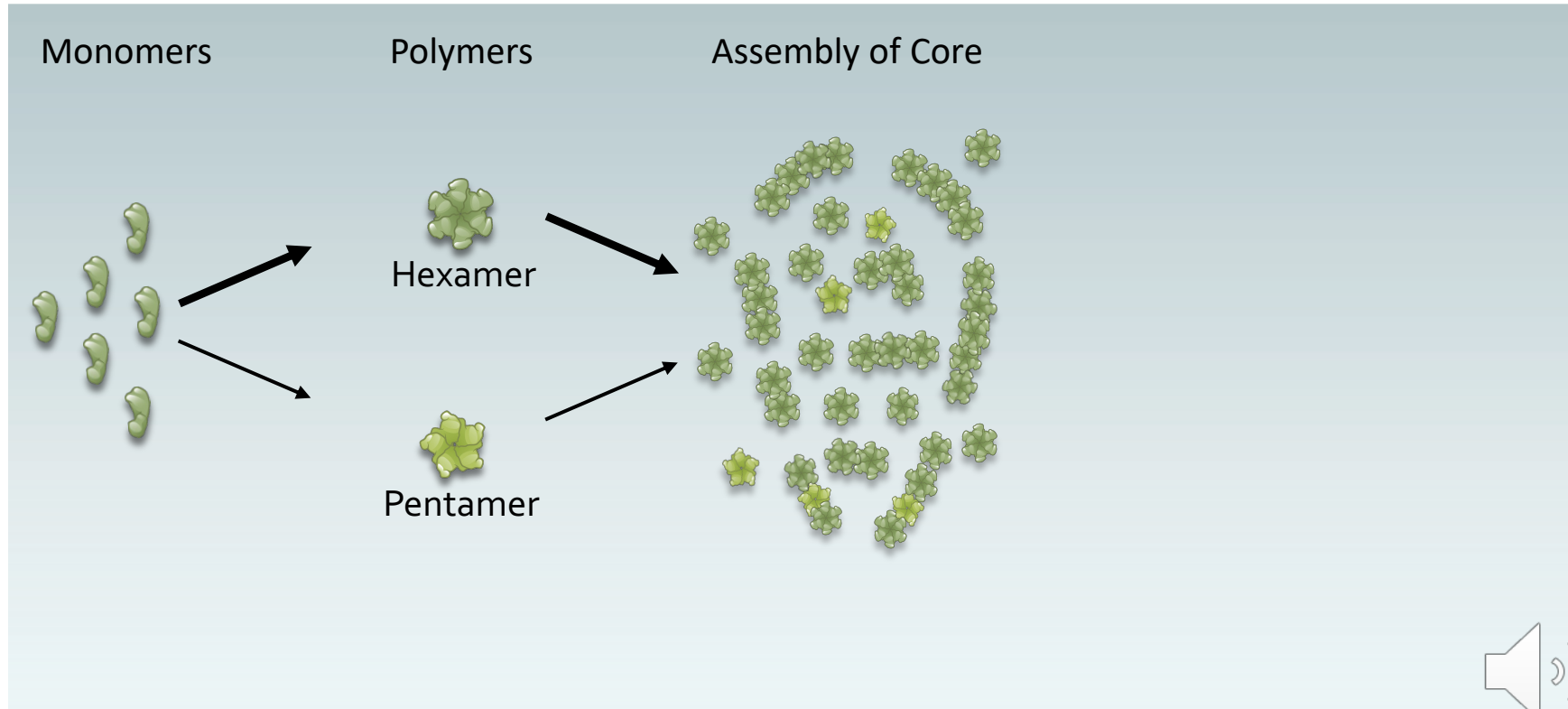
Budding and Maturation



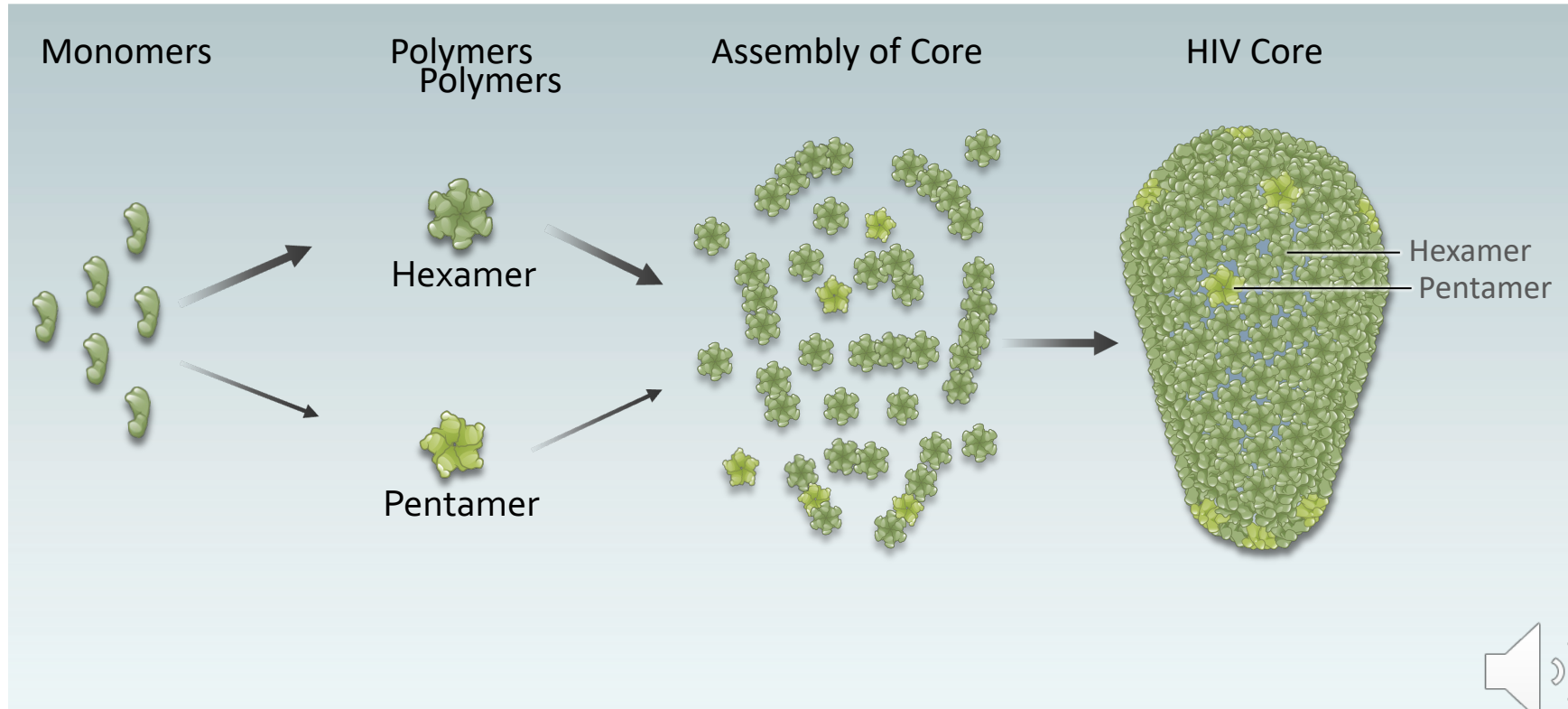
HIV Capsid and Core Formation



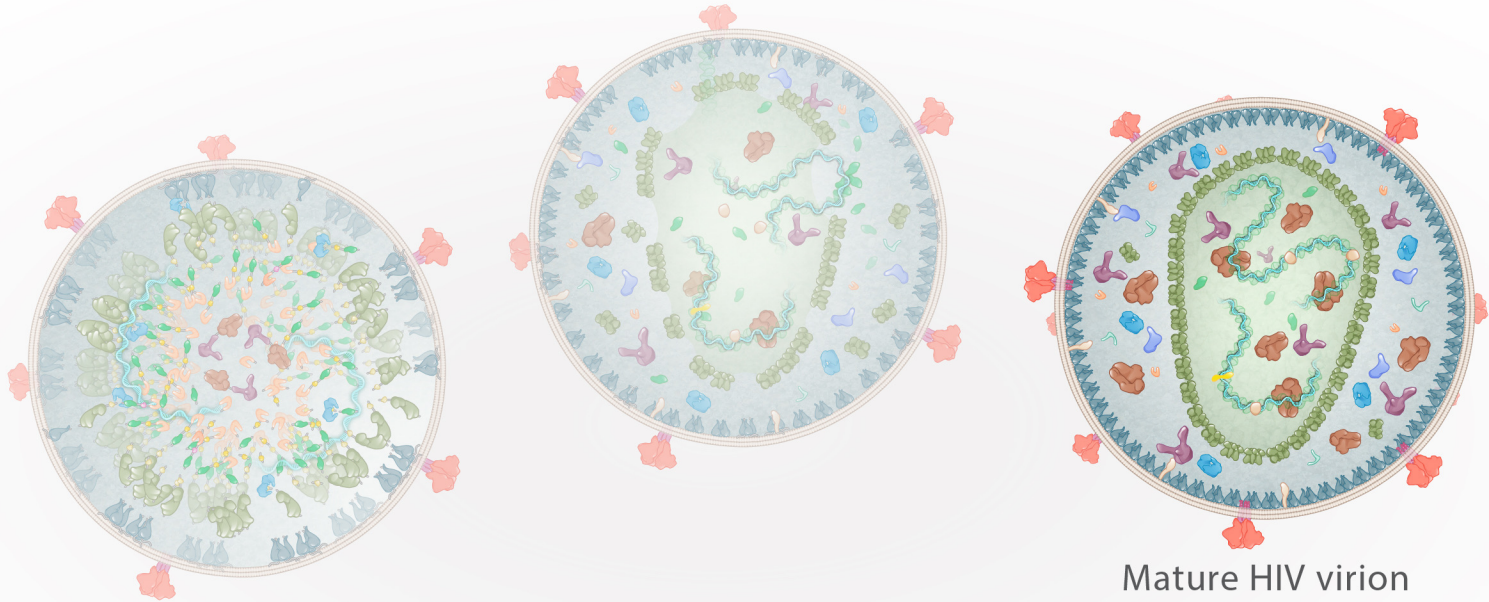
HIV Capsid and Core Formation



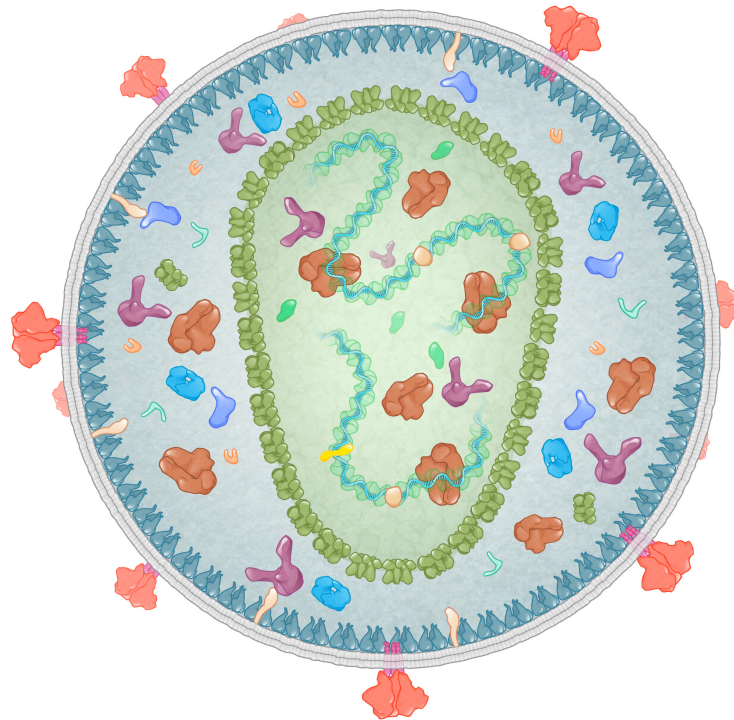
HIV Capsid and Core Formation



Budding and Maturation



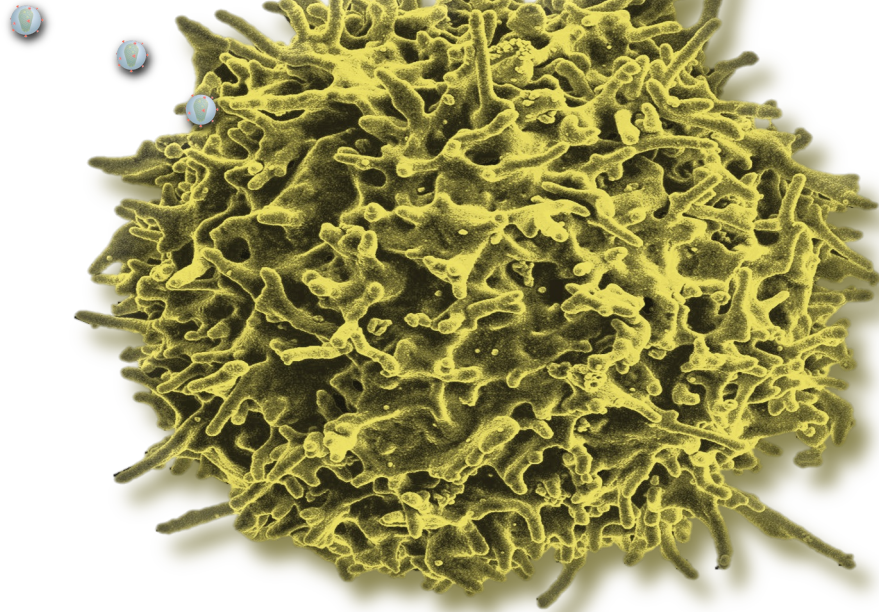
HIV



Summary

HIV Life Cycle

HIV

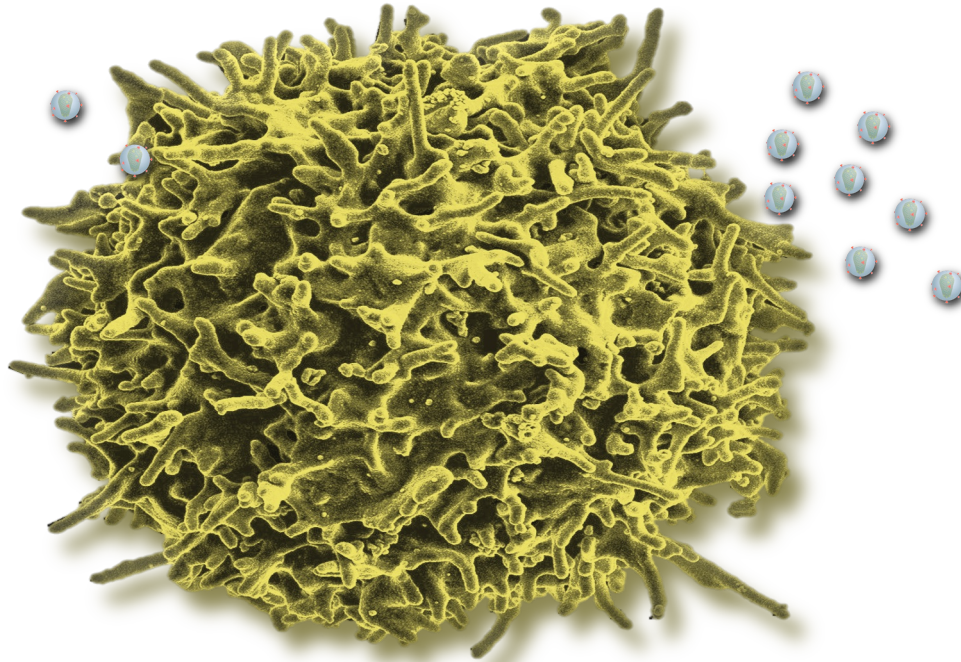


Human T-cell Lymphocyte

Source for T-cell Image: NIAID/NIH

HIV Life Cycle

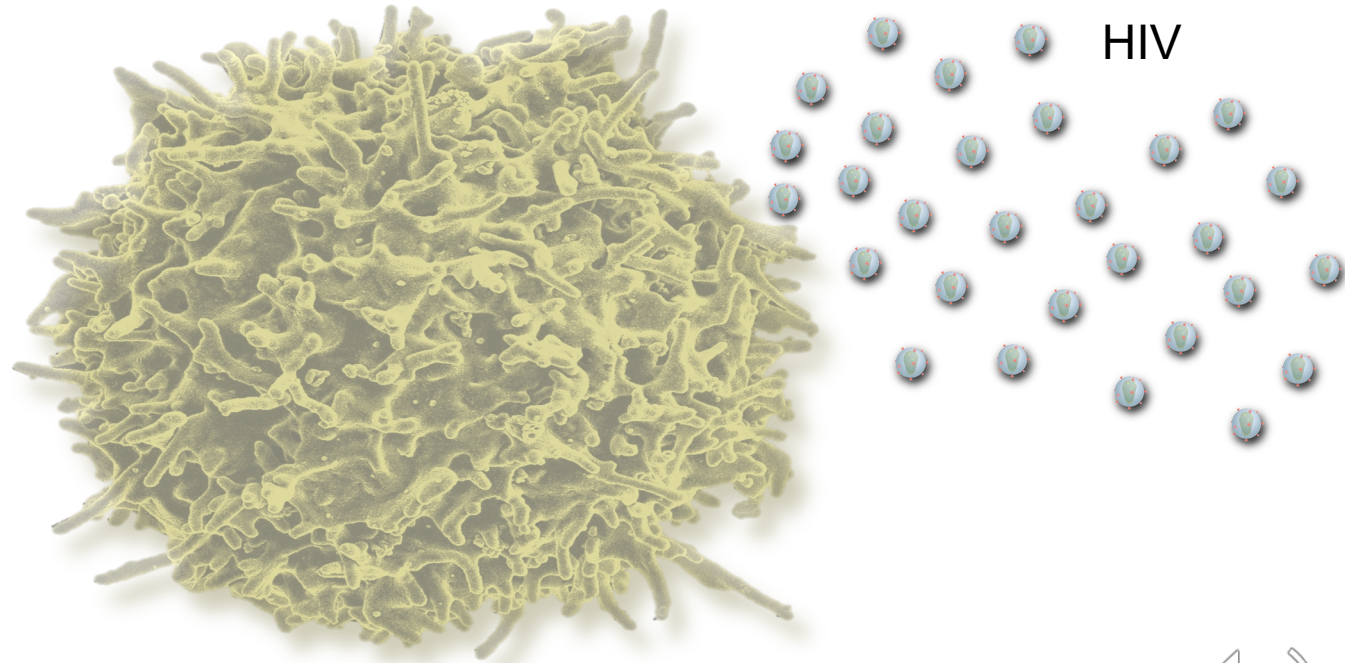
HIV



Human T-cell Lymphocyte

Source for T-cell Image: NIAID/HHI

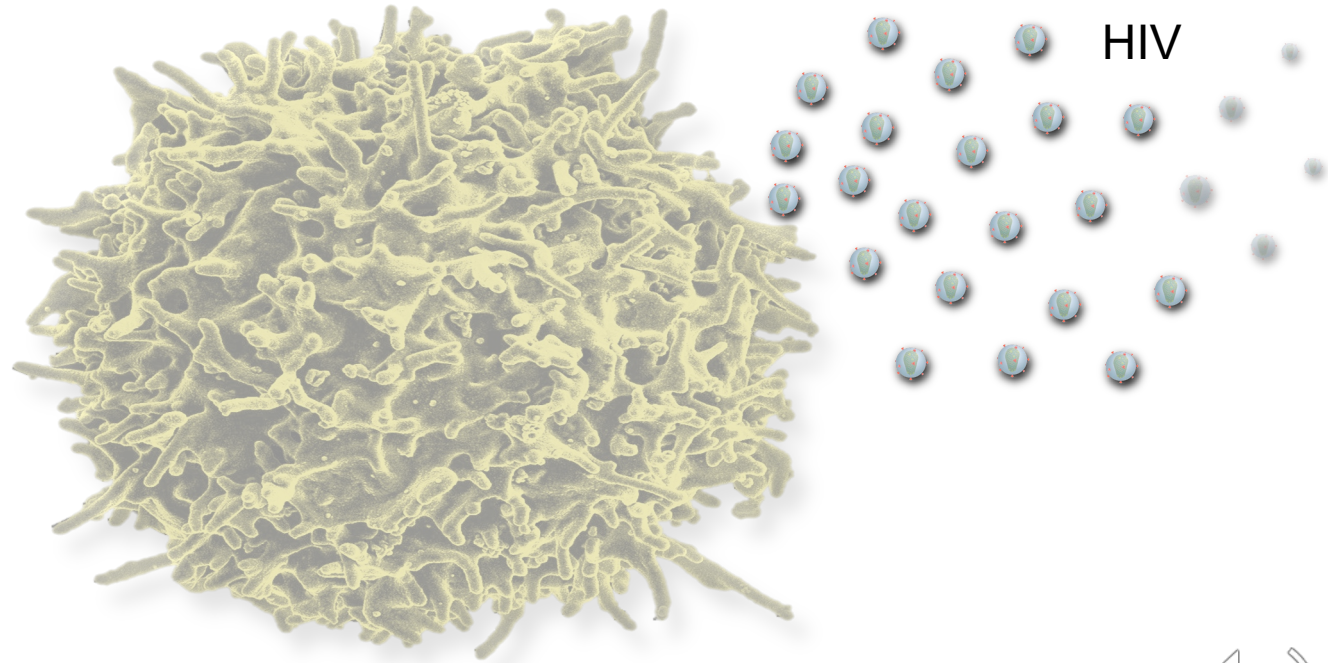
HIV Life Cycle



Human T-cell Lymphocyte

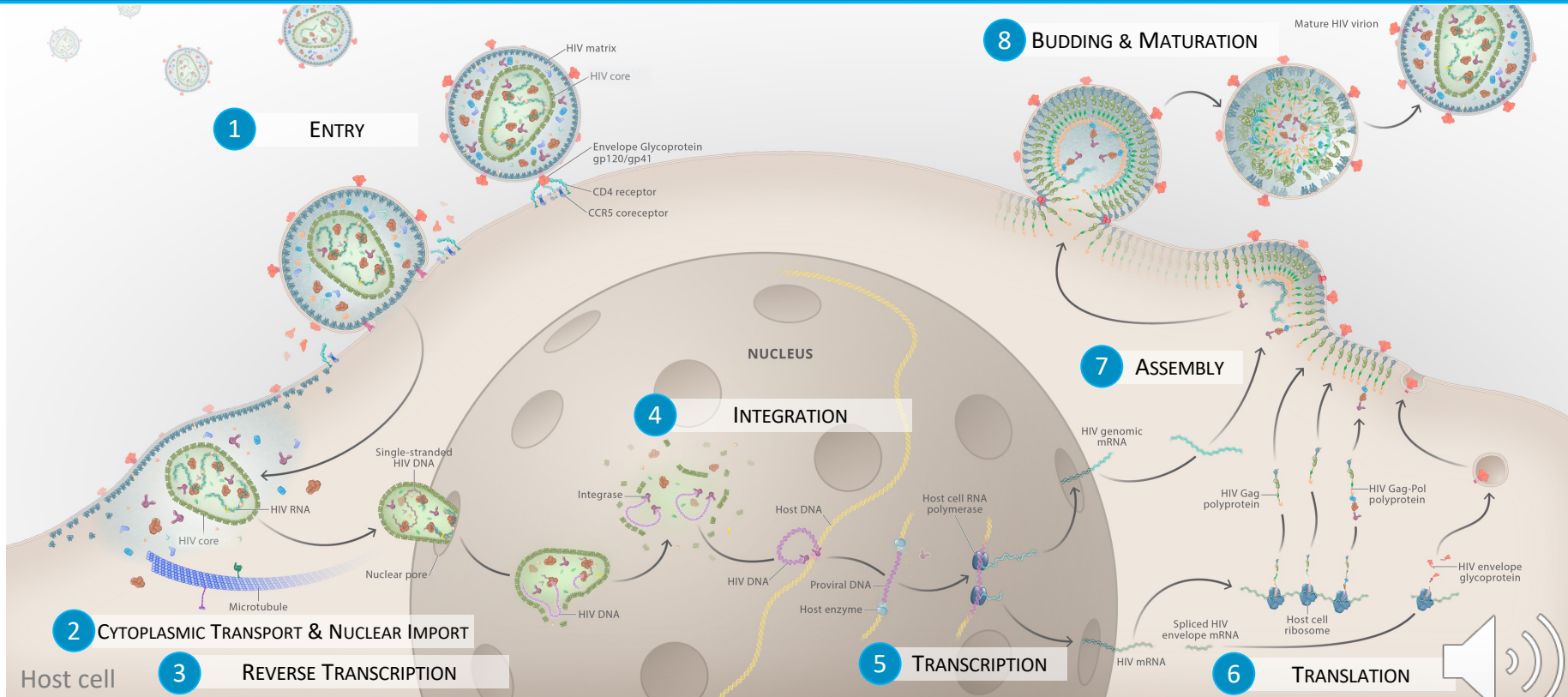
Source for T-cell Image: NIAID/HHI

HIV Life Cycle



Human T-cell Lymphocyte

HIV Life Cycle



Acknowledgments

The production of this **National HIV Curriculum** Mini-Lecture was supported by Grant U1OHA32104 from the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS). Its contents are solely the responsibility of University of Washington IDEA Program and do not necessarily represent the official views of HRSA or HHS.

