

# N1-Acetyl-Spermidine ELISA kit – Serum, Plasma, Supernatant

Ref: IS-I-2400R

Polyamines are molecules derived from ornithine (Orn) (i.e., putrescine, spermine, spermidine) or arginine (Arg) (i.e., agmatine). While ornithine decarboxylase is responsible for ornithine degradation and spermidine production, cSAT and nSAT transform spermidine to **N1-acetylspermidine** (N1-AcSpdn). These molecules are involved in many critical processes such as cell proliferation, nucleic acid synthesis, and cytoprotection from oxidative stress<sup>1</sup>. Several studies have evidenced that polyamine metabolism is frequently increased in cancer<sup>2</sup> which can fuel tumor progression<sup>3</sup> and favor immune escape<sup>4</sup>. Elevated levels of polyamines in sera of cancer patients have been demonstrated to correlate with poor prognosis.

**Sample type** Plasma, Cell culture supernatant

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**Capacity** 96 tests

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**Sensitivity** 3.5nM

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**Range** 8 - 312.5nM

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**Assay time** Sample preparation 3h, ELISA overnight

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**Reactivity** Reacts with all species

## INFORMATIONS

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### Product overview

<b>Product name</b>	N1-Acetyl-Spermidine ELISA kit
<b>Description</b>	Competitive ELISA kit for the quantitative measurement of N1-Acetyl-Spermidine (N1-AcSpdn) in plasma samples. <b>For research use only</b>
<b>Format</b>	96-well plate
<b>Samples</b>	Plasma, Cell culture supernatant
<b>Minimal sample volume</b>	50µL
<b>Reactivity</b>	Reacts with all species
<b>Standard range</b>	8 - 312.5nM
<b>Sensitivity</b>	3.5nM
<b>Specificity</b>	No significant cross-reactivity was observed with N8-Acetyl-Spermidine, Spermidine, Spermine, Ornithine & Putrescine
<b>Assay time</b>	Sample preparation 3h and ELISA overnight
<b>Storage</b>	Store at 2-8°C for up to 6 months
<b>Datasheets</b>	<a href="#">Instructions for use</a> , <a href="#">Material Safety Datasheet</a>

For research use only - Do not use for diagnostic

## PROTOCOLS

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**Sample collection & storage**      EDTA Plasma  
Store samples at 2-8°C for up to 48h or -20°C for longer period (up to 6 months)

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**Sample preparation**      Sample preparation (3 hours)

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**ELISA**      N1-Acetyl-Spermidine antiserum overnight incubation, revelation and read steps (1h)

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**Detailed protocol**      [Download instructions for use](#)

## REFERENCES

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### Selected articles on N1-Acetyl-Spermidine

- Pegg A., [Functions of Polyamines in Mammals](#), J Biol Chem, 2016
- Handa et al., [Polyamines: Bio-Molecules with Diverse Functions in Plant and Human Health and Disease](#), Front Chem, 2018
- Murray-Stewart et al., [Targeting polyamine metabolism for cancer therapy and prevention](#), Biochem J, 2016
- Casero et al., [Polyamine metabolism and cancer: treatments, challenges and opportunities](#), Nat Rev Cancer, 2018
- Hibino et al., [Tumor cell-derived spermidine is an oncometabolite that suppresses TCR clustering for intratumoral CD8+ T cell activation](#), Proc Natl Acad Sci USA, 2023
- Soda K., [The mechanisms by which polyamines accelerate tumor spread](#), J Exp Clin Cancer Res, 2011

## Product pictures

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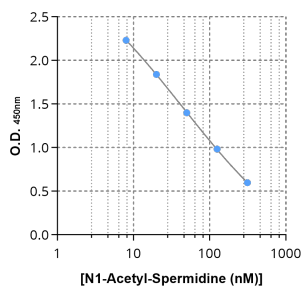


### N1-Acetyl-Spermidine ELISA kit

IS-I-2400R ELISA kit

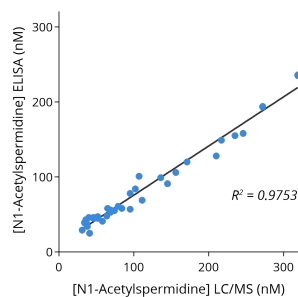


### N1-Acetyl-Spermidine ELISA kit



### Typical standard curve of N1-Acetyl-Spermidine ELISA

Typical standard curve obtained with the N1-AcSpdn ELISA kit. In this competitive enzyme immunoassay, optical density is inversely correlated with N1-AcSpdn levels within a linear range of 8 – 312.5nM. (example data - do not use for calculation).



### Cross-validation of N1-Acetyl-Spermidine ELISA and LC/MS data in human plasma samples

N1-AcSpdn was quantified in human plasma samples from healthy subjects using IS-I-2400R ELISA kit or by LC/MS. Correlation study showed  $R^2=0.9753$ , thereby confirming the accuracy of the immunoassay.

## Contact information

Immusmol  
229 Cours de l'Argonne

**To order, review, ask for technical support, visit product page at:**

<https://www.immusmol.com/shop/n1-acetyl-spermidine-elisa-kit/>