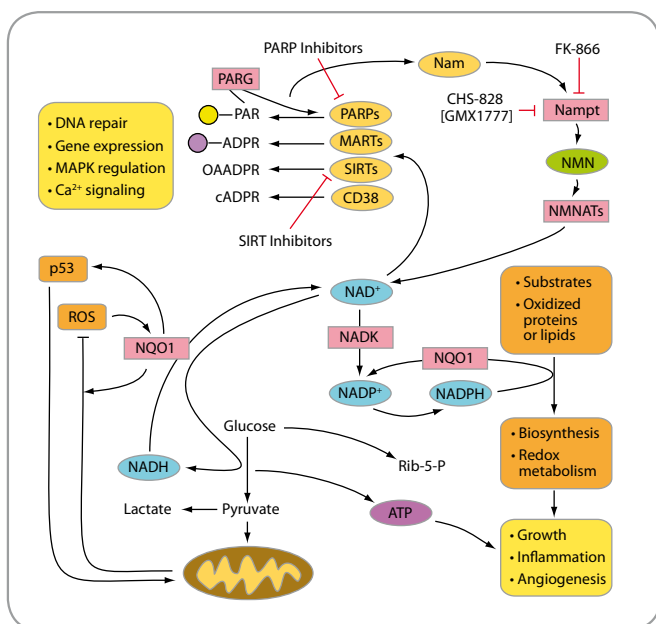


NAD⁺ Metabolome

Linking NAD⁺ Signaling & Cancer



Many and various NAD⁺-dependent signaling pathways regulate fundamental processes such as transcription, DNA repair, cell cycle progression, apoptosis, proliferation, survival and metabolism, which are linked to cancer development. NAD⁺-dependent signaling reactions involve the degradation of NAD, therefore permanent nucleotide resynthesis through different biosynthetic pathways is crucial for incessant cancer cell proliferation. Targeting the NAD metabolism, its synthesis and signaling pathways (PARPs, SIRT6, MARTs, CD38) show several effects on cancer cells and are therefore new and promising concepts for cancer treatment.

LITERATURE REFERENCES: Nampt: Linking NAD biology, metabolism and cancer: A. Garten, et al.; Trends Endocrinol. Metab. 20, 130 (2009) • The blockade of immune checkpoints in cancer immunotherapy: D.M. Pardoll; Nat. Rev. Canc. 12, 253 (2012)

Nicotinamide Phosphoribosyltransferase (Nampt)

Nampt (Visfatin; PBEF) converts nicotinamide (Nam), that arises endogenously from NAD⁺-dependent signaling processes, to nicotinamide mononucleotide (NMN), which is further converted to NAD⁺ through NMNATs. Nampt has recently drawn much attention in several fields, including NAD biology, metabolism, type 2 diabetes, inflammation and cancer. It regulates the activity of NAD-consuming enzymes such as sirtuins and influences a variety of metabolic and stress responses.



Nampt (Visfatin/PBEF) ELISA Kits

Nampt (Visfatin/PBEF) (human) ELISA Kit

AG-45A-0006EK-KI01		96 wells
AG-45A-0006TP-KI01	TwinPlex	2 x 96 wells
AG-45A-0006PP-KI01	PentaPlex	5 x 96 wells

Nampt (Visfatin/PBEF) (human) (IntraCellular) ELISA Kit

AG-45A-0008EK-KI01		96 wells
AG-45A-0008TP-KI01	TwinPlex	2 x 96 wells

Nampt (Visfatin/PBEF) (mouse/rat) Dual ELISA Kit

AG-45A-0007EK-KI01		96 wells
AG-45A-0007TP-KI01	TwinPlex	2 x 96 wells
AG-45A-0007PP-KI01	PentaPlex	5 x 96 wells

Nampt (Visfatin/PBEF) (mouse/rat) (IntraCellular) Dual ELISA Kit

AG-45A-0009EK-KI01		96 wells
AG-45A-0009TP-KI01	TwinPlex	2 x 96 wells

Nampt (Visfatin/PBEF) Proteins

PID	PRODUCT NAME	SIZE	SOURCE	PURITY (SDS-PAGE)	ENDOTOXIN (LAL TEST)
AG-40A-0031	Nampt (Visfatin/PBEF) (human) (rec.)	10 µg 50 µg	HEK 293 cells	≥95%	<0.1EU/µg
AG-40A-0031AA	Nampt (Visfatin/PBEF) (human) (rec.) (BULK)	500 µg	HEK 293 cells	≥95%	<0.1EU/µg
AG-40A-0018	Nampt (Visfatin/PBEF) (human) (rec.) (His)	50 µg	E. coli	≥90%	<1EU/µg
AG-40A-0018AA	Nampt (Visfatin/PBEF) (human) (rec.) (His) (BULK)	500 µg	E. coli	≥90%	<1EU/µg
AG-40A-0056	Nampt (Visfatin/PBEF) (mouse) (rec.)	10 µg 50 µg	HEK 293 cells	≥90%	<0.1EU/µg
AG-40A-0017	Nampt (Visfatin/PBEF) (mouse) (rec.) (His)	50 µg	E. coli	≥90%	<1EU/µg
AG-40A-0058	Nampt (Visfatin/PBEF) (rat) (rec.)	10 µg 50 µg	HEK 293 cells	≥90%	<0.1EU/µg
AG-40A-0027	Nampt (Visfatin/PBEF) (rat) (rec.) (His)	50 µg	E. coli	≥90%	<1EU/µg

Nampt (Visfatin/PBEF) Antibodies

PID	PRODUCT NAME	SIZE	SOURCE/ ISOTYPE	APPLICATION	SPECIES
AG-25A-0025	Nampt (Visfatin/PBEF) (human), pAb	100 µg	Rb	ELISA, IHC, WB	Hu
AG-25A-0025B	Nampt (Visfatin/PBEF) (human), pAb (Biotin)	50 µg	Rb	ELISA, IHC, WB	Hu
AG-25A-0027	Nampt (Visfatin/PBEF) (human), pAb (CT)	100 µg	Rb	ELISA, WB	Hu
AG-25A-0026	Nampt (Visfatin/PBEF) (human), pAb (NT)	100 µg	Rb	ELISA, IHC	Hu
AG-25A-0028	Nampt (Visfatin/PBEF) (mouse), pAb	100 µg	Rb	ELISA, WB	Ms
AG-25A-0033	Nampt (Visfatin/PBEF) (rat), pAb	100 µg	Rb	ELISA, WB	Rt
AG-20A-0034	Nampt (Visfatin/PBEF), mAb (OMNI379)	50 µg 100 µg	Ms IgG2ak	ELISA, FACS, ICC, IHC, IP, WB	Hu, Ms, Rt
AG-20A-0034B	Nampt (Visfatin/PBEF), mAb (OMNI379) (Biotin)	50 µg	Ms IgG2ak	ELISA, ICC, IHC, WB	Hu, Ms, Rt

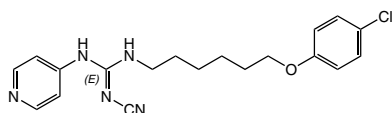
Abbreviations: Hu = Human; Gp = Guinea Pig; Ms = Mouse; Rb = Rabbit; Rt = Rat

Nampt (Visfatin/PBEF) Inhibitors – from the Manufacturer

CHS-828 [GMX1778]

AG-CR1-0064

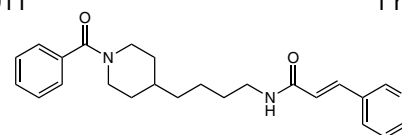
5 mg | 25 mg



FK-866

AG-CR1-0011

1 mg | 5 mg



NEW Biologically Active NAD Kinase & NMNAT Proteins

NAD Kinase (human) (rec.) (His) (highly active)

AG-40T-0091

50 µg

NAD Kinase (catalytic domain) (human) (rec.) (His) (highly active)

AG-40T-0090

50 µg

NMNAT1 (human) (rec.) (His) (highly active)

AG-40T-0092

100 µg

NMNAT1 (human) (rec.) (His)

AG-40A-0120

10 µg | 50 µg | 3 x 50 µg

NMNAT2 (human) (rec.) (His)

AG-40A-0153

10 µg | 50 µg

NMNAT3 (human) (rec.) (His) (highly active)

AG-40T-0093

10 µg | 50 µg | 3 x 50 µg

Also available:

anti-NMNAT2 (human), mAb (Nady-1)

AG-20A-0087

50 µg | 100 µg

anti-NMNAT2 (human), pAb

AG-25A-0113

100 µg

Sirtuins (SIRT) and Cancer

NAD⁺-dependent deacetylation by sirtuins results in the modulation of target protein activity, stability or localization. Sirtuins establish a direct link between metabolic and bioenergetic homeostasis and gene regulation. They were shown to be involved in the development of diabetes, obesity, metabolic syndrome and cancer.

Sirtuin ELISA Kits

Sirtuin 1 (human) (IntraCellular) ELISA Kit

AG-45A-0029EK-KI01 96 wells
AG-45A-0029TP-KI01 TwinPlex 2 x 96 wells

Sirtuin 2 (human) (IntraCellular) ELISA Kit

AG-45A-0030EK-KI01 96 wells
AG-45A-0030TP-KI01 TwinPlex 2 x 96 wells

Sirtuin Proteins

PID	PRODUCT NAME	SIZE	SOURCE	PURITY (SDS-PAGE)	ENDOTOXIN (LAL TEST)
AG-40A-0117	Sirtuin 1 (human) (rec.) (His)	10 µg 50 µg	E. coli	≥95%	<1EU/µg
AG-40A-0149	Sirtuin 1 (mouse) (rec.) (His)	10 µg 50 µg	E. coli	≥90%	N/A
AG-40A-0121	Sirtuin 2 (human) (rec.) (His)	10 µg 50 µg	E. coli	≥90%	<1EU/µg
AG-40A-0144	Sirtuin 5 (human) (rec.) (His)	10 µg 50 µg	E. coli	≥90%	N/A
AG-40A-0139	Sirtuin 5 (intact form) (human) (rec.) (His)	10 µg 50 µg	E. coli	≥90%	<1EU/µg
AG-40A-0140	Sirtuin 6 (human) (rec.) (His)	10 µg 50 µg	E. coli	≥90%	N/A
AG-40A-0147	Sirtuin 7 (human) (rec.) (His)	10 µg 50 µg	E. coli	≥90%	N/A

Sirtuin Antibodies

PID	PRODUCT NAME	SIZE	SOURCE/ ISOTYPE	APPLICATION	SPECIES
AG-20A-0081	anti-Sirtuin 1 (human), mAb (SR119-1AG)	50 µg 100 µg	Ms IgG1k	ELISA, WB	Hu
AG-20A-0082	anti-Sirtuin 1 (human), mAb (SR128-6AG)	50 µg 100 µg	Ms IgG1k	ELISA, WB	Hu
AG-25A-0082	anti-Sirtuin 1 (human), pAb	100 µg	Rb	ELISA, WB	Hu
AG-20A-0076	anti-Sirtuin 2 (human), mAb (S2R233-1)	50 µg 100 µg	Ms IgG2bk	ELISA, WB	Hu
AG-25A-0083	anti-Sirtuin 2 (human), pAb	100 µg	Rb	ELISA, WB	Hu
AG-20A-0084	anti-Sirtuin 5 (human), mAb (S5R37-3)	50 µg 100 µg	Ms IgG2bk	ELISA, WB	Hu
AG-25A-0100	anti-Sirtuin 5 (human), pAb	100 µg	Rb	ELISA, WB	Hu
AG-20A-0091	anti-Sirtuin 6 (human), mAb (S6R82-2)	50 µg 100 µg	Ms IgG2bk	ELISA, WB	Hu
AG-25A-0101	anti-Sirtuin 6 (human), pAb	100 µg	Rb	ELISA, WB	Hu

Abbreviations: Hu = Human; Ms = Mouse; Rb = Rabbit

Sirtuin Modulators

[AK-7](#) (Brain-permeable SIRT2 inhibitor)

AG-CR1-3511 5 mg | 25 mg

[Hyperforin . DCHA](#) (Potent SIRT1 and SIRT2 inhibitor)

AG-CN2-0008 500 µg | 1 mg

[Piceatannol](#) (Activator of human deacetylase SIRT1)

AG-CN2-0086 1 mg | 5 mg | 25 mg

[Resveratrol](#) (Potent SIRT1 activator)

AG-CN2-0033 50 mg | 100 mg | 500 mg

[Resveratrol \(synthetic\)](#) (Potent SIRT1 activator)

AG-CN2-0036 50 mg | 100 mg | 500 mg

[Sirtinol](#) (Specific cell permeable SIRT1 inhibitor)

AG-CR1-0055 1 mg | 5 mg | 25 mg

[Splitomicin](#) (Potent inhibitor of yeast Sir2p)

AG-CR1-0088 1 mg | 5 mg | 25 mg

[Suramin . hexasodium salt](#) (SIRT1 and SIRT5 inhibitor)

AG-CR1-3575 50 mg | 250 mg | 1 g

Poly(ADP ribose) Polymerases (PARPs)

In the context of NAD⁺-dependent signaling in tumorigenesis, polyADP ribosylation is the most promising target for cancer therapy. Poly(ADP ribose) polymerases (PARPs) contribute to cell transformation by regulating the activity of key transcription factors that are involved in cell cycle regulation and apoptosis. Given that the activity of these transcription factors is significantly affected by poly(ADP ribose) formation, NAD⁺ consumption by PARPs seems to be central in regulating transcriptional events that are relevant to neoplastic transformation.

NEW Biologically Active PARP and PARG Proteins

PID	PRODUCT NAME	SIZE	SOURCE/ISOTYPE	PURITY (SDS-PAGE)	ACTIVITY
AG-40T-0011	PARP-1 [ARTD1] (human) (rec.) (His) (high purity)	10 µg	Sf21 cells	≥98%	≥1200U/mg Protein
AG-40T-0010	PARP-1 [ARTD1] (catalytic domain) (human) (rec.) (His)	20 µg	Sf21 cells	≥90%	~50ng * ¹
AG-40T-0015	PARP-1 [ARTD1] (E998K Mutant) (human) (rec.) Control	10 µg	Sf21 cells	≥95%	0.5% of WT PARP-1
AG-40T-0012	PARP-2 [ARTD2] (mouse) (rec.) (His) (high purity)	10 µg	Sf21 cells	≥98%	≥600U/mg Protein
AG-40T-0013	PARP-3 [ARTD3] (human) (rec.) (His) (high purity)	10 µg	Sf21 cells	≥98%	≥10U/mg Protein
AG-40T-0022	PARG (human) (rec.) (His) (highly active)	2 µg	Sf21 cells	≥95%	~100ng * ²

*¹ = required for PAR formation; *² = required for PAR degradation

NEW Specific PARP & PAR Antibodies

PID	PRODUCT NAME	SIZE	SOURCE/ISOTYPE	APPLICATION	SPECIES
AG-25T-0002	anti-PARP-1 [ARTD1] (human), pAb	100 µl	Rb	ICC, IHC, IP, WB	Hu
AG-25T-0001	anti-PARP-1 [ARTD1] (mouse), pAb	100 µl	Rb	ICC, IHC, IP, WB	Ms
AG-25T-0003	anti-PARP-2 [ARTD2] (mouse), pAb	100 µl	Rb	ICC, IHC, IP, WB	Ms
AG-20T-0001	anti-Poly(ADP-ribose) [PAR], mAb (10H)	50 µg 100 µg	Ms IgG3k	FACS, ICC, IHC, WB	Dr, Hu, Ms, Rt

Abbreviations: Dr = Drosophila; Hu = Human; Ms = Mouse; Rb = Rabbit; Rt = Rat; PF = Preservative Free

PARP Inhibitors

1,5-Isoquinolinediol

AG-CR1-0024 5 mg | 25 mg | 100 mg

PJ-34

AG-CR1-0100 1 mg | 5 mg | 25 mg

DPQ

AG-CR1-0037 1 mg | 5 mg

NQO1 Reagents

NQO1 catalyzes the reduction of highly reactive quinone metabolites and their derivatives by using NAD(P)H as an electron donor. NQO1 is abnormally elevated in many types of solid tumors and may represent a useful biomarker of pancreatic cancer.

NQO1 (human) (IntraCellular) ELISA Kit	AG-45A-0036
NQO1 (human) (rec.) (His)	AG-40A-0152
anti-NQO1 (human), mAb (Skiny-1)	AG-20A-0086
anti-NQO1 (human), pAb	AG-25A-0105

CD38 Antibodies

CD38 is the major NAD glycohydrolase and ADP-ribosyl cyclase, producing ADPR, cyclic ADPR and NAADP. CD38 has been identified as a negative prognostic marker in chronic lymphocytic leukaemia (CLL).

CD38 (human), mAb (AT1)	ANC-187-020
CD38 (human), mAb (AT1) (PF)	ANC-187-820
CD38 (human), mAb (AT1) (Biotin)	ANC-187-030
CD38 (human), mAb (AT1) (FITC)	ANC-187-040
CD38 (human), mAb (AT1) (R-PE)	ANC-187-050

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