Ames MPF® 98/100
Ames MPF® PENTA 2
Ames MPF® Aqua

Ames MPF® mutagenicity assay is a miniaturized modification of the Ames fluctuation assay and is based on the same principle as the agar plate test (OECD 471), but offers several advantages.

Large range of ready to use kits, individual reagents and technical support to run the Ames mutagenicity assay in your own lab.

Ames mutagenicity assays are important for:

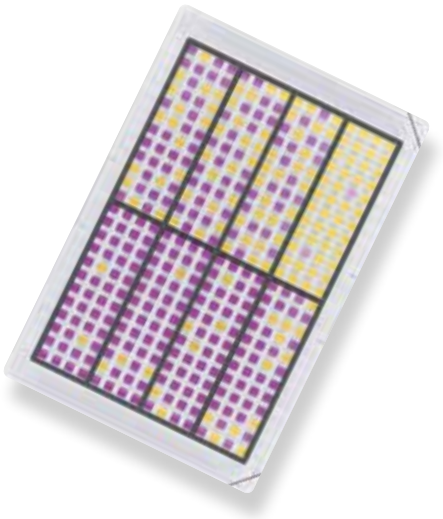
- the safety evaluation of cosmetics and pharmaceuticals
- the exclusion of genotoxic activity in chemicals or pesticides
- the exclusion of mutagenicity in medical devices
- the exclusion of micro-pollutants in drinking water
- the control of absence of genotoxic compounds in surface or waste water, air, soil or sediments
- the research in the field of food ingredients, food packaging material

XENOMETRIX

Swiss Commitment for Bioassays

Benefits of Ames MPF and Ames II

- Complete ready to use kits with strains, ampicilline, culture media, positive controls and S9
- Same test principle and same tester strains as agar plate test
- Miniaturized, liquid microplate format allowing simultaneous processing of several compounds and automation
- Detection of genotoxic activity in chemicals, medical devices, cosmetics, pharmaceuticals, food ingredients, water, air, soil or sediments
- Certificate of analysis provided: Quality controlled reagents, biologicals and strains (genotyped and phenotyped)
- High concordance with agar plate-based assay (see literature)



Ames MPF versus agar plate test: 1 compound, 5 strains, +/- S9, triplicates, neg. / pos. control

- Up to 4-fold less compound consumption: 55 mg versus 220 mg
- 5 times less operator intervention: 1.5 h versus 5 h hands-on-time
- At least 3-fold less contaminated waste: 30 plates versus 240 plates
- In line with 3R: Up to 11-fold less consumption of rat liver S9 and thus 11 fold less test animals: 0.45 ml versus 5.25 ml of rat liver S9
- In line with OECD 471, FDA and ICH M7
- Fast, easy and no error prone counting of revertants

Ames MPF ready-to-use kits

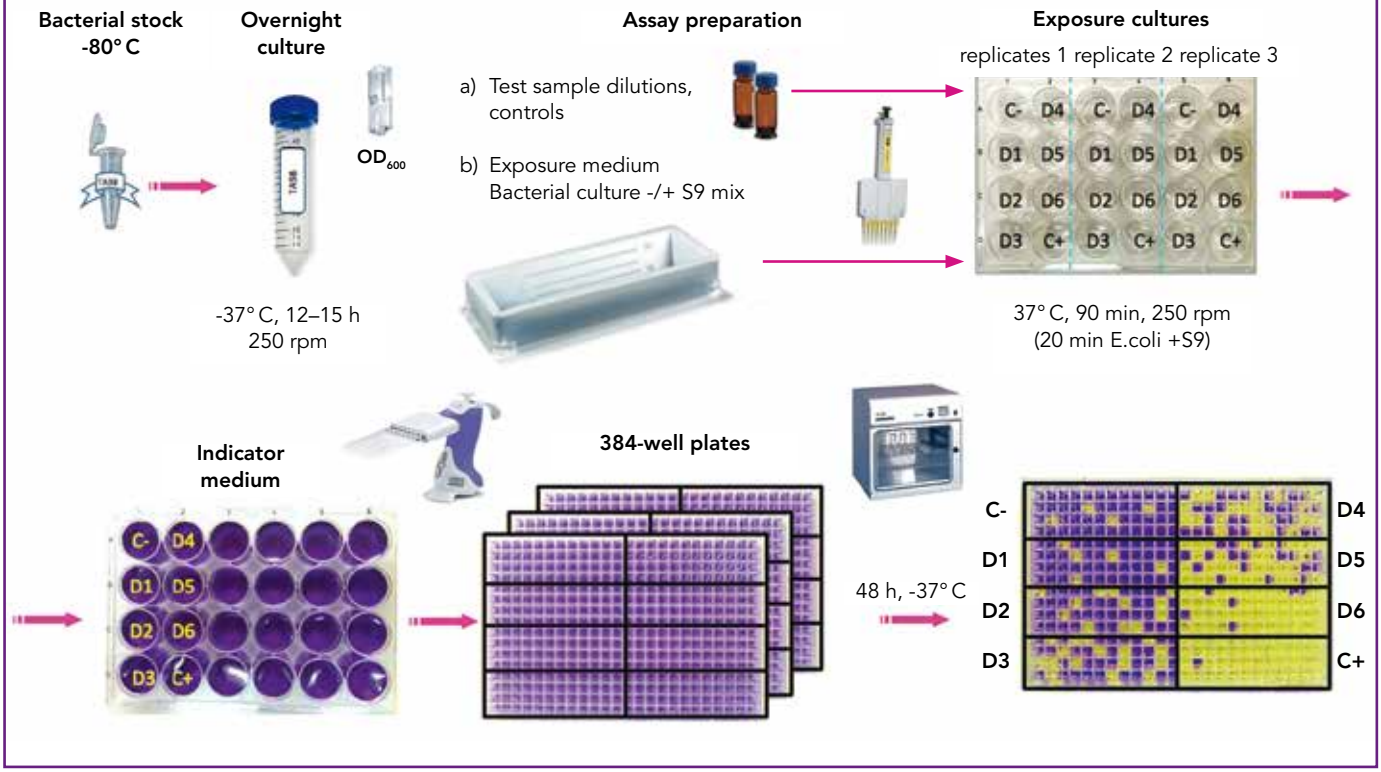
Article number	Product description	Kit configuration
A10-210	Ames MPF 98/100 (2 x 480 Measuring Points)	10 samples
A10-210-S2-P	Ames MPF 98/100 (2 x 480 Measuring Points)	10 samples + S9 + pos. contr.
E10-213	Ames II (2 x 480 Measuring Points)	10 samples
E10-213-S2-P	Ames II (2 x 480 Measuring Points)	10 samples + S9 + pos. contr.
B10-513	Ames MPF PENTA 2 (5 x 480 Measuring Points)	10 samples
B10-513-S2-P	Ames MPF PENTA 2 (5 x 480 Measuring Points)	10 samples + S9 + pos. contr.

S2= Phenobarbital/ß-Naphtoflavone (PB/BN)-induced rat liver microsomal fraction S9

Individual reagents

Article number	Product description	Quantity
Strains		
PSS-0110	TA98 - semisolid	250 µl
PSS-0111	TA100 - semisolid	250 µl
PSS-0112	TA1535 - semisolid	250 µl
PSS-0113	TA1537 - semisolid	250 µl
PSS-0114	TA97a - semisolid	250 µl
PSS-0120	TA102 - semisolid	250 µl
PLI-0114	TAMix liquid (TA7001–TA7006)	250 µl
PSS-0115	E.coli WP2 uvrA - semisolid	250 µl
PSS-0116	E.coli WP2 [pKM101] - semisolid	250 µl
PSS-0118	TA1535pSK1002 - semisolid	250 µl
PSS-0119	E.coli WP2 UvrA[pKM101] - semisolid	250 µl
PSS-0121	YG1041- semisolid	250 µl
PSS-0122	YG1042 - semisolid	250 µl
PSS-0123	YG7108 - semisolid	250 µl
Liquid Media		
PMM-GM00	Ames MPF / Ames II growth medium (RT)	50 ml
PMM-EM02	Ames MPF / Ames II exposure medium (RT)	50 ml
PMM-IM10	Ames MPF / Ames II indicator medium (RT)	550 ml
PME-EM22	Ames MPF E.coli exposure medium (RT)	50 ml
PME-IM31	Ames MPF E.coli indicator medium (RT)	550 ml
Microsomal fractions of rat liver S9, co-factors		
PRS-PB01	Lyophilized, PB/BN-induced rat liver S9	1 ml
PRS-PB02	Lyophilized, PB/BN-induced rat liver S9	2 ml
PCO-0800	S9 cofactor kit (Buffer Salts, G6P, NADP)	20 ml
PCO-1800	S9 cofactor kit (Buffer Salts, G6P, NADP)	70 ml
Positive Controls		
PPC-NF00	2-NF: 2-Nitrofluorene	20 µg
PPC-AA01	2-AA: 2-Aminoanthracene	100 µg
PPC-AA02	2-AA: 2-Aminoanthracene	2 mg
PPC-NQ02	4-NQO: 4-Nitroquinoline-N-oxide	50 µg
PPC-AC02	N4-ACT: N4-Aminocytidine	2.5 mg
PPC-AR05	9-AAC: 9-Aminoacridine	1000 µg
PPC-AF10	2-AF: 2-Aminofluorene	10 mg
PPC-IC01	ICR191	100 µg
PPC-MM04	MMS: Methyl Methanesulfonate	96 µl
Ampicillin		
PAM-0002	Ampicillin	120 µl

Procedure Ames Microplate Assay



Publications on Ames MPF

S. Flückiger-Isler and M. Kamber (2012) Direct comparison of the Ames microplate format (MPF) test in liquid medium with the standard Ames pre-incubation assay on agar plates by use of equivocal to weakly positive test compounds. Mutat Res. 747(1):36–45.

S. Flückiger-Isler et al., (2004) Assessment of the performace of the Ames II assay: a collaborative study with 19 coded compounds. Mutat Res 558:181–197.

M.B. Heringa et al., (2011) Formation and removal of genotoxic activity during UV/H2O2-GAC treatment of drinking water, Water Research 45, 366–374.

M. Kamber et al., (2009) Comparison of the Ames II and traditional Ames test responses with respect to mutagenicity, strain specificities, need for metabolism and correlation with rodent carcinogenicity. Mutagenesis vol. 24, no. 4, 359–366.

B. Rainer et al., (2021) Direct Comparison of the Lowest Effect Concentrations of Mutagenic Reference Substances in Two Ames Test Formats. Toxics. 2021; 9(7):152. https://doi.org/10.3390/toxics9070152

D. Spiliotopoulos et al., (2024) Assessment of the performance of the Ames MPF™ assay: A multicenter collaborative study with six coded chemicals. Mutat Res Genet Toxicol Environ Mutagen. 893:503718

D. Spiliotopoulos and C.Koelbert (2020) Assessment of the miniaturized liquid Ames microplate format (MPF™) for a selection of the test items from the recommended list of genotoxic and non-genotoxic chemicals. Mutat Res Genet Toxicol Environ Mutagen. 2020 Aug-Sep;856-857

C. Boglari and C. Koelbert (2023) Performance of miniaturized Ames assays indicate high predictive power for mutagenicity, Poster, EMGS 2023 Annual Meeting, Chicago, IL, USA | 9-13 September 2023 | Poster ID PS016

C. Boglari and C. Koelbert (2024) Investigation of nitrosamines using miniaturized Ames tests, Poster, EEMGS 2024 | Rovinj, Croatia | 23-27 September 2024 | Poster #08

C. Boglari and C. Koelbert (2024) Bacterial cell density as a crucial factor for the performance of the miniaturized Ames test systems, GUM Meeting| Poster #31 | 20-22 March 2024 | Kaiserslautern, Germany

C. Boglari and C. Koelbert (2025) Miniaturized Ames Assays to Assess the Mutagenicity of Nitrosamines under Enhanced Ames Test (EAT) Conditions Relevant for Food and Food Contact Materials, Poster, Advances in Safety Assessment of Packaging Materials – 2nd International Symposium, Vienna

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