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## Acrylamide Mutagenicity Summary - Annex 1 Table 2

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### In Vitro Gene Mutation (Bacterial)

#### Acrylamide Positive

YANG2005: Yang HJ;Lee SH;Jin Y;Choi JH;Han CH;Lee MH; (2005) Genotoxicity and toxicological effects of acrylamide on reproductive system in male rats, *J Vet Sci* 6(2):103-109

#### Acrylamide Negative

EMMERT2006: Emmert B;Bunger J;Keuch K;Muller M;Emmert S;Hallier E;Westphal GA; (2006) Mutagenicity of cytochrome P450 2E1 substrates in the Ames test with the metabolic competent *S. typhimurium* strain YG7108pin3ERb5, *Toxicology* 228(1):66-76

### In Vitro Gene Mutation (Mammalian)

#### Acrylamide Positive

BESARATINIA2003: Besaratinia A;Pfeifer GP; (2003) Weak yet distinct mutagenicity of acrylamide in mammalian cells, *J Natl Cancer Inst* 95(12):889-896

#### Acrylamide Positive

#### Glycidamide Positive

BESARATINIA2004: Besaratinia A;Pfeifer GP; (2004) Genotoxicity of acrylamide and glycidamide, *J Natl Cancer Inst* 96(13):1023-1029

#### Acrylamide Negative

#### Glycidamide Positive

BAUM2005A: Baum M;Fauth E;Fritzen S;Herrmann A;Mertes P;Merz K;Rudolphi M;Zankl H;Eisenbrand G; (2005) Acrylamide and glycidamide: genotoxic effects in V79-cells and human blood, *Mutat Res* 580(1-2):61-69

#### Glycidamide Positive

JOHANSSON2005: Johansson F;Lundell T;Rydberg P;Erixon K;Jenssen D; (2005) Mutagenicity and DNA repair of glycidamide-induced adducts in mammalian cells, *Mutat Res* 580(1-2):81-89

#### Not Applicable

SILVAR2005: Silvari V;Haglund J;Jenssen D;Golding BT;Ehrenberg L;Tornqvist M; (2005) Reaction-kinetic parameters of glycidamide as determinants of mutagenic potency, *Mutat Res* 580(1-2):91-101

#### Acrylamide Equivocal

#### Glycidamide Positive

KOYAMA2006: Koyama N;Sakamoto H;Sakuraba M;Koizumi T;Takashima Y;Hayashi M;Matsufuji H;Yamagata K;Masuda S;Kinae N;Honma M; (2006) Genotoxicity of acrylamide and glycidamide in human lymphoblastoid TK6 cells, *Mutat Res* 603(2):151-158

#### Glycidamide Positive

THIELEN2006: Thielen S;Baum M;Hoffmann M;Loeppky RN;Eisenbrand G; (2006) Genotoxicity of glycidamide in comparison to (+/-)-anti-benzo[a]pyrene-7,8-dihydrodiol-9,10-epoxide and alpha-acetoxy-N-nitroso-diethanolamine in human blood and in mammalian V79-cells, *Mol Nutr Food Res* 50(4-5):430-436

#### Acrylamide Positive

#### Glycidamide Positive

MEI2007: Mei N; Hu J; Churchwell MI; Guo L; Moore M; Doerge DR;Chen T (2007) Genotoxic effects of acrylamide and glycidamide in mouse lymphoma cells, *Food Chem Toxicol E Pub*

### In Vitro Cell Transformation

#### Acrylamide Positive

PARK2002: Park J;Kamendulis LM;Friedman MA;Klaunig JE; (2002) Acrylamide-induced cellular transformation, *Toxicol Sci* 65(2):177-183

### In Vitro Chromosomal Aberrations

#### Acrylamide Positive

GLATT2005: Glatt H;Schneider H;Liu Y; (2005) V79-hCYP2E1-hSULT1A1, a cell line for the sensitive detection of genotoxic effects induced by carbohydrate pyrolysis products and other food-borne chemicals, *Mutat Res* 580(1-2):41-52

#### Acrylamide Positive

YANG2005: Yang HJ;Lee SH;Jin Y;Choi JH;Han CH;Lee MH; (2005) Genotoxicity and toxicological effects of acrylamide on reproductive system in male rats, *J Vet Sci* 6(2):103-109

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**Acrylamide Positive**  
**Glycidamide Positive**

MARTINS2007: Martins C;Oliveira NG;Pingarilho M;Gamboa dC;Martins V;Marques MM;Beland FA;Churchwell MI;Doerge DR;Rueff J;Gaspar JF; (2007) Cytogenetic damage induced by acrylamide and glycidamide in mammalian cells: correlation with specific glycidamide-DNA adducts, *Toxicol Sci* 95(2):383-390

**In Vitro Micronucleus**

**Acrylamide Positive**

JIE2001: Jie YM;Jia C; (2001) Chromosomal composition of micronuclei in mouse NIH 3T3 cells treated with acrylamide, extract of *Tripterygium hypoglaucum* (level) hutch, mitomycin C and colchicine, detected by multicolor FISH with centromeric and telomeric DNA probes, *Mutagenesis* 16(2):145-149

**Acrylamide Negative**  
**Glycidamide Negative**

BAUM2005A: Baum M;Fauth E;Fritzen S;Herrmann A;Mertes P;Merz K;Rudolphi M;Zankl H;Eisenbrand G; (2005) Acrylamide and glycidamide: genotoxic effects in V79-cells and human blood, *Mutat Res* 580(1-2):61-69

**Acrylamide Equivocal**  
**Glycidamide Positive**

KOYAMA2006: Koyama N;Sakamoto H;Sakuraba M;Koizumi T;Takashima Y;Hayashi M;Matsufuji H;Yamagata K;Masuda S;Kinae N;Honma M; (2006) Genotoxicity of acrylamide and glycidamide in human lymphoblastoid TK6 cells, *Mutat Res* 603(2):151-158

**In Vitro DNA Damage**

**Acrylamide Positive (human) Acrylamide Negative (rat)**

BJORGE1996: Bjorge C;Brunborg G;Wiger R;Holme JA;Scholz T;Dybing E;Soderlund EJ; (1996) A comparative study of chemically induced DNA damage in isolated human and rat testicular cells, *Reprod Toxicol* 10(6):509-519

**Acrylamide Positive**

MA2003: Ma XX;Yao GD;Cheng H;Zeng QL;Chen Q; (2003) [Effects of acrylamide on DNA damage in human keratinocytes], *Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi* 21(2):96-98

**Acrylamide Positive**

BLASIAK2004: Blasiak J;Gloc E;Wozniak K;Czechowska A; (2004) Genotoxicity of acrylamide in human lymphocytes, *Chem Biol Interact* 149(2-3):137-149

**Acrylamide Negative**  
**Glycidamide Positive**

BAUM2005A: Baum M;Fauth E;Fritzen S;Herrmann A;Mertes P;Merz K;Rudolphi M;Zankl H;Eisenbrand G; (2005) Acrylamide and glycidamide: genotoxic effects in V79-cells and human blood, *Mutat Res* 580(1-2):61-69

**Glycidamide Positive**

JOHANSSON2005: Johansson F;Lundell T;Rydberg P;Erixon K;Jenssen D; (2005) Mutagenicity and DNA repair of glycidamide-induced adducts in mammalian cells, *Mutat Res* 580(1-2):81-89

**Acrylamide Positive (human & hamster) Acrylamide Negative (rat)**  
**Glycidamide Positive (human, hamster & rat)**

PUPPEL2005: Puppel N;Tjaden Z;Fueller F;Marko D; (2005) DNA strand breaking capacity of acrylamide and glycidamide in mammalian cells, *Mutat Res* 580(1-2):71-80

**Acrylamide Positive**

CHICO2006: Chico G;Massart C;Jin L;Vanvooren V;Cailliet-Fauquet P;Andry G;Lothaire P;Dequanter D;Friedman M;Van Sande J; (2006) Acrylamide, an in vivo thyroid carcinogenic agent, induces DNA damage in rat thyroid cell lines and primary cultures, *Mol Cell Endocrinol* 257-258:6-14

**Acrylamide Negative**  
**Glycidamide Positive**

KOYAMA2006: Koyama N;Sakamoto H;Sakuraba M;Koizumi T;Takashima Y;Hayashi M;Matsufuji H;Yamagata K;Masuda S;Kinae N;Honma M; (2006) Genotoxicity of acrylamide and glycidamide in human lymphoblastoid TK6 cells, *Mutat Res* 603(2):151-158

**Glycidamide Positive**

THIELEN2006: Thielen S;Baum M;Hoffmann M;Loeppky RN;Eisenbrand G; (2006) Genotoxicity of glycidamide in comparison to (+/-)-anti-benzo[a]pyrene-7,8-dihydrodiol-9,10-epoxide and alpha-acetoxy-N-nitroso-diethanolamine in human blood and in mammalian V79-cells, *Mol Nutr Food Res* 50(4-5):430-436

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## In Vitro DNA Adducts

### **Acrylamide Positive +S9 (N7-GA-Gua)**

SEGERBACK1995: Segerback D;Calleman CJ;Schroeder JL;Costa LG;Faustman EM; (1995) Formation of N-7-(2-carbamoyl-2-hydroxyethyl)guanine in DNA of the mouse and the rat following intraperitoneal administration of [<sup>14</sup>C]acrylamide, *Carcinogenesis* 16(5):1161-1165

### **Glycidamide Positive (N7-GA-Gua > N3-GA-Ade and N1-GA-dA)**

GAMBOA2003: Gamboa dC;Churchwell MI;Hamilton LP;Von Tungeln LS;Beland FA;Marques MM;Doerge DR; (2003) DNA adduct formation from acrylamide via conversion to glycidamide in adult and neonatal mice, *Chem Res Toxicol* 16(10):1328-1337

### **Glycidamide Positive (N3-GA-dThd and N3-GA-Cyd)**

BACKMAN2004: Backman J;Sjoholm R;Kronberg L; (2004) Characterization of the adducts formed in the reactions of glycidamide with thymidine and cytidine, *Chem Res Toxicol* 17(12):1652-1658

### **Glycidamide Positive (N1-GA-dG, N1-GA-dA, N6-GA-dA and N1-GA-dI)**

BACKMAN2007: Backman J;Kronberg L; (2007) Reaction of glycidamide with 2'-deoxyadenosine and 2'-deoxyguanosine--mechanism for the amide hydrolysis, *Nucleosides Nucleotides Nucleic Acids* 26(2):129-148

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## In Vitro DNA Adducts (Cultured Cells)

### **Acrylamide Positive**

BESARATINIA2003: Besaratinia A;Pfeifer GP; (2003) Weak yet distinct mutagenicity of acrylamide in mammalian cells, *J Natl Cancer Inst* 95(12):889-896

### **Acrylamide Positive**

### **Glycidamide Positive**

BESARATINIA2004: Besaratinia A;Pfeifer GP; (2004) Genotoxicity of acrylamide and glycidamide, *J Natl Cancer Inst* 96(13):1023-1029

### **Acrylamide Positive (N7-GA-Gua)**

### **Glycidamide Positive (N7-GA-Gua and N3-GA-Ade)**

MARTINS2007: Martins C;Oliveira NG;Pingarilho M;Gamboa dC;Martins V;Marques MM;Beland FA;Churchwell MI;Doerge DR;Rueff J;Gaspar JF; (2007) Cytogenetic damage induced by acrylamide and glycidamide in mammalian cells: correlation with specific glycidamide-DNA adducts, *Toxicol Sci* 95(2):383-390

### **Acrylamide Negative -S9**

### **Glycidamide Positive (N3-GA-Ade and N7-GA-Gua)**

MEI2007: Mei N; Hu J; Churchwell MI; Guo L; Moore M; Doerge DR;Chen T (2007) Genotoxic effects of acrylamide and glycidamide in mouse lymphoma cells, *Food Chem Toxicol E Pub*

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## In Vivo DNA Adducts

### **Acrylamide Positive (N7-GA-Gua; Mouse & Rat)**

SEGERBACK1995: Segerback D;Calleman CJ;Schroeder JL;Costa LG;Faustman EM; (1995) Formation of N-7-(2-carbamoyl-2-hydroxyethyl)guanine in DNA of the mouse and the rat following intraperitoneal administration of [<sup>14</sup>C]acrylamide, *Carcinogenesis* 16(5):1161-1165

### **Acrylamide Positive (N7-GA-Gua and N3-GA-Ade)**

### **Glycidamide Positive (N7-GA-Gua and N3-GA-Ade)**

GAMBOA2003: Gamboa dC;Churchwell MI;Hamilton LP;Von Tungeln LS;Beland FA;Marques MM;Doerge DR; (2003) DNA adduct formation from acrylamide via conversion to glycidamide in adult and neonatal mice, *Chem Res Toxicol* 16(10):1328-1337

### **Acrylamide Positive (N7-GA-Gua)**

TWADDLE2004: Twaddle NC;Churchwell MI;McDaniel LP;Doerge DR; (2004) Autoclave sterilization produces acrylamide in rodent diets: implications for toxicity testing, *J Agric Food Chem* 52(13):4344-4349

### **Acrylamide Positive (N7-GA-Gua)**

### **Glycidamide Positive (N7-GA-Gua)**

DOERGE2005a: Doerge DR;Young JF;McDaniel LP;Twaddle NC;Churchwell MI; (2005) Toxicokinetics of acrylamide and glycidamide in B6C3F1 mice, *Toxicol Appl Pharmacol* 202(3):258-267

### **Acrylamide Positive (N7-GA-Gua)**

### **Glycidamide Positive (N7-GA-Gua)**

DOERGE2005b: Doerge DR;Young JF;McDaniel LP;Twaddle NC;Churchwell MI; (2005) Toxicokinetics of acrylamide and glycidamide in Fischer 344 rats, *Toxicol Appl Pharmacol* 208(3):199-209

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**Acrylamide Positive (N7-GA-Gua; acute & sub-chronic)****Glycidamide Positive (N7-GA-Gua and N3-GA-Ade; acute & sub-chronic)**

DOERGE2005c: Doerge DR;da Costa GG;McDaniel LP;Churchwell MI;Twaddle NC;Beland FA; (2005) DNA adducts derived from administration of acrylamide and glycidamide to mice and rats, *Mutat Res* 580(1-2):131-141

**Acrylamide Positive (N7-GA-Gua)**

FARMER2005: Farmer PB;Brown K;Tompkins E;Emms VL;Jones DJ;Singh R;Phillips DH; (2005) DNA adducts: Mass spectrometry methods and future prospects, *Toxicol Appl Pharmacol* 207(2 Suppl):293-301

**Acrylamide Positive (CYP2E1+/+; N7-GA-Gua and N3-GA-Ade)****Acrylamide Positive (CYP2E1-/-; N7-GA-Gua)**

GHANAYEM2005: Ghanayem BI;McDaniel LP;Churchwell MI;Twaddle NC;Snyder R;Fennell TR;Doerge DR; (2005) Role of CYP2E1 in the epoxidation of acrylamide to glycidamide and formation of DNA and hemoglobin adducts, *Toxicol Sci* 88(2):311-318

**Acrylamide Positive (N7-GA-Gua and N3-GA-Ade)**

MANIERE2005: Maniere I;Godard T;Doerge DR;Churchwell MI;Guffroy M;Laurentie M;Poul JM; (2005) DNA damage and DNA adduct formation in rat tissues following oral administration of acrylamide, *Mutat Res* 580(1-2):119-129

**Acrylamide Positive (N7-GA-Gua; rapid repair)**

TAREKE2006: Tareke E;Twaddle NC;McDaniel LP;Churchwell MI;Young JF;Doerge DR; (2006) Relationships between biomarkers of exposure and toxicokinetics in Fischer 344 rats and B6C3F1 mice administered single doses of acrylamide and glycidamide and multiple doses of acrylamide, *Toxicol Appl Pharmacol* 217(1):63-75

**Acrylamide Positive (N7-GA-Gua)**

FENNELL2007: Fennell, T.R., Snyder, R.W. and Friedman, M.A. (2007) Unpublished results, (Abstract Only)

**In Vivo Gene Mutation****Acrylamide Negative**

KREBS1997: Krebs O;Favor J; (1997) Somatic and germ cell mutagenesis in lambda lacZ transgenic mice treated with acrylamide or ethylnitrosourea, *Mutat Res* 388(2-3):239-248

**Acrylamide Positive****Glycidamide Positive**

MANJANATHA2006: Manjanatha MG;Aidoo A;Shelton SD;Bishop ME;McDaniel LP;Lyn-Cook LE;Doerge DR; (2006) Genotoxicity of acrylamide and its metabolite glycidamide administered in drinking water to male and female Big Blue mice, *Environ Mol Mutagen* 47(1):6-17

**Acrylamide Positive****Glycidamide Positive**

MANJANATHA2006: Manjanatha MG;Aidoo A;Shelton SD;Bishop ME;McDaniel LP;Lyn-Cook LE;Doerge DR; (2006) Genotoxicity of acrylamide and its metabolite glycidamide administered in drinking water to male and female Big Blue mice, *Environ Mol Mutagen* 47(1):6-17

**In Vivo Chromosomal Aberrations****Acrylamide Positive**

KLIGERMAN1991: Kligerman AD;Atwater AL;Bryant MF;Erexson GL;Kwanyuen P;Dearfield KL; (1991) Cytogenetic studies of ethyl acrylate using C57BL/6 mice, *Mutagenesis* 6(2):137-141

**Acrylamide Negative**

KRISHNA1995: Krishna G;Theiss JC; (1995) Concurrent analysis of cytogenetic damage in vivo: a multiple endpoint-multiple tissue approach, *Environ Mol Mutagen* 25(4):314-320

**Acrylamide Positive**

GASSNER1996: Gassner P;Adler ID; (1996) Induction of hypoploidy and cell cycle delay by acrylamide in somatic and germinal cells of male mice, *Mutat Res* 367(4):195-202

**Acrylamide Positive**

NESTEROVA1999: Nesterova EV;Durnev AD;Seredenin SB; (1999) Verapamil contributes to the clastogenic effects of acrylamide, cyclophosphamide, and dioxidine on somatic cells of BALB/C and C57BL/6 mice, *Mutat Res* 440(2):171-179

**In Vivo Micronucleus****Acrylamide Positive**

KLIGERMAN1991: Kligerman AD;Atwater AL;Bryant MF;Erexson GL;Kwanyuen P;Dearfield KL; (1991) Cytogenetic studies of ethyl acrylate using C57BL/6 mice, *Mutagenesis* 6(2):137-141

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## Acrylamide Negative

KRISHNA1995: Krishna G;Theiss JC; (1995) Concurrent analysis of cytogenetic damage in vivo: a multiple endpoint-multiple tissue approach, *Environ Mol Mutagen* 25(4):314-320

## Acrylamide Positive (Clastogenic & Aneugenic)

SCHRIEVERSCHWEM1997: Schriever-Schwemmer G;Kliesch U;Adler ID; (1997) Extruded micronuclei induced by colchicine or acrylamide contain mostly lagging chromosomes identified in paintbrush smears by minor and major mouse DNA probes, *Mutagenesis* 12(4):201-207

## Acrylamide Negative

DOBRZYNSKA2000: Dobrzynska MM;Gajewski AK; (2000) Induction of micronuclei in bone marrow and sperm head abnormalities after combined exposure of mice to low doses of X-rays and acrylamide, *Teratog Carcinog Mutagen* 20(3):133-140

## Acrylamide Positive (mouse) Acrylamide Negative (rat)

PAULSSON2002: Paulsson B;Grawe J;Tornqvist M; (2002) Hemoglobin adducts and micronucleus frequencies in mouse and rat after acrylamide or N-methylolacrylamide treatment, *Mutat Res* 516(1-2):101-111

## Acrylamide Positive

ABRAMSSONZETTER2003: Abramsson-Zetterberg L; (2003) The dose-response relationship at very low doses of acrylamide is linear in the flow cytometer-based mouse micronucleus assay, *Mutat Res* 535(2):215-222

## Glycidamide Positive (mouse) Glycidamide Equivocal (rat)

PAULSSON2003A: Paulsson B;Kotova N;Grawe J;Henderson A;Granath F;Golding B;Tornqvist M; (2003) Induction of micronuclei in mouse and rat by glycidamide, genotoxic metabolite of acrylamide, *Mutat Res* 535(1):15-24

## Acrylamide Negative

ABRAMSSONZETTER2005: Abramsson-Zetterberg L;Wong J;Ilback NG; (2005) Acrylamide tissue distribution and genotoxic effects in a common viral infection in mice, *Toxicology* 211(1-2):70-76

## Acrylamide Positive (CYP2E1+/+) Acrylamide Negative (CYP2E1-/-)

GHANAYEM2005A: Ghanayem BI;Witt KL;Kissling GE;Tice RR;Recio L; (2005) Absence of acrylamide-induced genotoxicity in CYP2E1-null mice: evidence consistent with a glycidamide-mediated effect, *Mutat Res* 578(1-2):284-297

## Acrylamide Positive

### Glycidamide Positive

HUSOY2005: Husoy T;Abramsson-Zetterberg L;Olstorn HB;Paulsen JE;Alexander J; (2005) Adenomatous polyposis coli influences micronuclei induction by PhIP and acrylamide in mouse erythrocytes, *Mutat Res* 580(1-2):111-118

## Acrylamide Positive

YANG2005: Yang HJ;Lee SH;Jin Y;Choi JH;Han CH;Lee MH; (2005) Genotoxicity and toxicological effects of acrylamide on reproductive system in male rats, *J Vet Sci* 6(2):103-109

## Acrylamide Positive

### Glycidamide Positive

MANJANATHA2006: Manjanatha MG;Aidoo A;Shelton SD;Bishop ME;McDaniel LP;Lyn-Cook LE;Doerge DR; (2006) Genotoxicity of acrylamide and its metabolite glycidamide administered in drinking water to male and female Big Blue mice, *Environ Mol Mutagen* 47(1):6-17

## Acrylamide Positive

DAVIS2007: Davis, J. and Recio, L. (2007) Determination of a Micronuclei Frequency Peripheral Blood of B6C3F1 Mice Exposed Acrylamide for Four Weeks, *ILS Report C155-01*

## In Vivo DNA Damage

### Acrylamide Positive (CYP2E1+/+) Acrylamide Negative (CYP2E1-/-)

GHANAYEM2005A: Ghanayem BI;Witt KL;Kissling GE;Tice RR;Recio L; (2005) Absence of acrylamide-induced genotoxicity in CYP2E1-null mice: evidence consistent with a glycidamide-mediated effect, *Mutat Res* 578(1-2):284-297

### Acrylamide Positive (rat thyroid and adrenal)

KLAUNIG2005: Klaunig JE;Kamendulis LM; (2005) Mechanisms of acrylamide induced rodent carcinogenesis, *Adv Exp Med Biol* 561:49-62

## Acrylamide Positive

MANIERE2005: Maniere I;Godard T;Doerge DR;Churchwell MI;Guffroy M;Laurentie M;Poul JM; (2005) DNA damage and DNA adduct formation in rat tissues following oral administration of acrylamide, *Mutat Res* 580(1-2):119-129

## Acrylamide Positive

ZAMORANOPONCE2006: Zamorano-Ponce E;Morales C;Ramos D;Sepulveda C;Cares S;Rivera P;Fernandez J;Carballo MA; (2006) Anti-genotoxic effect of Aloysia triphylla infusion against acrylamide-induced DNA damage as shown by the comet assay technique, *Mutat Res* 603(2):145-150

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## In Vivo DNA Synthesis

### **Acrylamide Positive (thyroid, adrenal medulla & testes) Acrylamide Negative (liver & adrenal cortex)**

LAFFERTY2004: Lafferty, J. S., Kamendulis, L. M., Kaster, J., Jiang, J., and Klaunig, J. E. (2004) Subchronic acrylamide treatment induces a tissue-specific increase in DNA synthesis in the rat., *Toxicol Lett* 154(1-2):95-103

### **Acrylamide Positive (thyroid, adrenal medulla & testes) Acrylamide Negative (liver & adrenal cortex)**

KLAUNIG2005: Klaunig JE;Kamendulis LM; (2005) Mechanisms of acrylamide induced rodent carcinogenesis, *Adv Exp Med Biol* 561:49-62

## In Vivo Human Biomonitoring

### **Acrylamide Negative**

KJUUS2005: Kjuus H;Hansteen IL;Ryberg D;Goffeng LO;Ovrebø S;Skaug V; (2005) Chromosome aberrations in tunnel workers exposed to acrylamide and N-methylolacrylamide, *Scand J Work Environ Health* 31(4):300-306

## In Vivo Germ Cell Mutation

### **Glycidamide Positive**

GENEROSO1996: Generoso WM;Sega GA;Lockhart AM;Hughes LA;Cain KT;Cacheiro NL;Shelby MD; (1996) Dominant lethal mutations, heritable translocations, and unscheduled DNA synthesis induced in male mouse germ cells by glycidamide, a metabolite of acrylamide, *Mutat Res* 371(3-4):175-183

### **Acrylamide Positive**

ADLER2004: Adler ID;Gonda H;Hrabe dA;Jentsch I;Otten IS;Speicher MR; (2004) Heritable translocations induced by dermal exposure of male mice to acrylamide, *Cytogenet Genome Res* 104(1-4):271-276

### **Acrylamide Positive (CYP2E1+/+) Acrylamide Negative (CYP2E1-/-)**

GHANAYEM2005B: Ghanayem BI;Witt KL;El Hadri L;Hoffler U;Kissling GE;Shelby MD;Bishop JB; (2005) Comparison of germ cell mutagenicity in male CYP2E1-null and wild-type mice treated with acrylamide: evidence supporting a glycidamide-mediated effect, *Biol Reprod* 72(1):157-163

## In Vivo Germ Cell Dominant Lethal

### **Acrylamide Positive**

WORKING1987: Working PK;Bentley KS;Hurt ME;Mohr KL; (1987) Comparison of the dominant lethal effects of acrylonitrile and acrylamide in male Fischer 344 rats, *Mutagenesis* 2(3):215-220

### **Acrylamide Positive**

DOBZYNSKA1990: Dobzynska M;Lenarczyk M;Gajewski AK; (1990) Induction of dominant lethal mutations by combined X-ray-acrylamide treatment in male mice, *Mutat Res* 232(2):209-215

### **Glycidamide Positive**

GENEROSO1996: Generoso WM;Sega GA;Lockhart AM;Hughes LA;Cain KT;Cacheiro NL;Shelby MD; (1996) Dominant lethal mutations, heritable translocations, and unscheduled DNA synthesis induced in male mouse germ cells by glycidamide, a metabolite of acrylamide, *Mutat Res* 371(3-4):175-183

### **Acrylamide Positive**

HOLLAND1999: Holland N;Ahlborn T;Turteltaub K;Markee C;Moore D;Wyrobek AJ;Smith MT; (1999) Acrylamide causes preimplantation abnormalities in embryos and induces chromatin-adducts in male germ cells of mice, *Reprod Toxicol* 13(3):167-178

### **Acrylamide Positive**

ADLER2000: Adler ID;Baumgartner A;Gonda H;Friedman MA;Skerhut M; (2000) 1-Aminobenzotriazole inhibits acrylamide-induced dominant lethal effects in spermatids of male mice, *Mutagenesis* 15(2):133-136

### **Acrylamide Positive**

TYL2003: Tyl RW;Friedman MA; (2003) Effects of acrylamide on rodent reproductive performance, *Reprod Toxicol* 17(1):1-13

### **Acrylamide Positive**

ADLER2004: Adler ID;Gonda H;Hrabe dA;Jentsch I;Otten IS;Speicher MR; (2004) Heritable translocations induced by dermal exposure of male mice to acrylamide, *Cytogenet Genome Res* 104(1-4):271-276

## In Vivo Germ Cell Embryo Abnormalities

### **Acrylamide Positive**

HOLLAND1999: Holland N;Ahlborn T;Turteltaub K;Markee C;Moore D;Wyrobek AJ;Smith MT; (1999) Acrylamide causes preimplantation abnormalities in embryos and induces chromatin-adducts in male germ cells of mice, *Reprod Toxicol* 13(3):167-178

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## In Vivo Germ Cell Chromosomal Aberrations

### Acrylamide Positive

GASSNER1996: Gassner P;Adler ID; (1996) Induction of hypoploidy and cell cycle delay by acrylamide in somatic and germinal cells of male mice, *Mutat Res* 367(4):195-202

### Acrylamide Positive

MARCHETTI1996: Marchetti F;Lowe X;Moore DH;Bishop J;Wyrobek AJ; (1996) Paternally inherited chromosomal structural aberrations detected in mouse first-cleavage zygote metaphases by multicolour fluorescence in situ hybridization painting, *Chromosome Res* 4(8):604-613

### Acrylamide Positive

MARCHETTI1997: Marchetti F;Lowe X;Bishop J;Wyrobek AJ; (1997) Induction of chromosomal aberrations in mouse zygotes by acrylamide treatment of male germ cells and their correlation with dominant lethality and heritable translocations, *Environ Mol Mutagen* 30(4):410-417

### Acrylamide Negative

SCHMID1999: Schmid TE;Xu W;Adler ID; (1999) Detection of aneuploidy by multicolor FISH in mouse sperm after in vivo treatment with acrylamide, colchicine, diazepam or thiabendazole, *Mutagenesis* 14(2):173-179

## In Vivo Embryo Micronucleus

### Acrylamide Positive

TITENKAHOLLAND1998: Titenka-Holland, N., Ahlborn, Thomas, Lowe, Xiu, Shang, Nang, Smith, Marilyn T., and Wyrobek, Andrew J. (1998) Micronuclei and Developmental Abnormalities in 4-Day Mouse Embryos After Paternal treatment with Acrylamide, *Environmental and Molecular Mutagenesis* 31:206-217

## In Vivo Germ Cell DNA Adducts

### Acrylamide Positive

HOLLAND1999: Holland N;Ahlborn T;Turteltaub K;Markee C;Moore D;Wyrobek AJ;Smith MT; (1999) Acrylamide causes preimplantation abnormalities in embryos and induces chromatin-adducts in male germ cells of mice, *Reprod Toxicol* 13(3):167-178

### Acrylamide Positive

XIE2006: Xie Q;Sun H;Liu Y;Ding X;Fu D;Liu K; (2006) Adduction of biomacromolecules with acrylamide (AA) in mice at environmental dose levels studied by accelerator mass spectrometry, *Toxicol Lett* 163(2):101-108

## In Vivo Germ Cell UDS

### Glycidamide Positive

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## In Vivo Germ Cell Other

### Acrylamide Positive

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## In Vivo Gene Mutation (Drosophila)

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### Acrylamide Negative

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