Supplementary Data

The TP53 web site: an integrative resource centre for the TP53 mutation database and TP53 mutant analysis.

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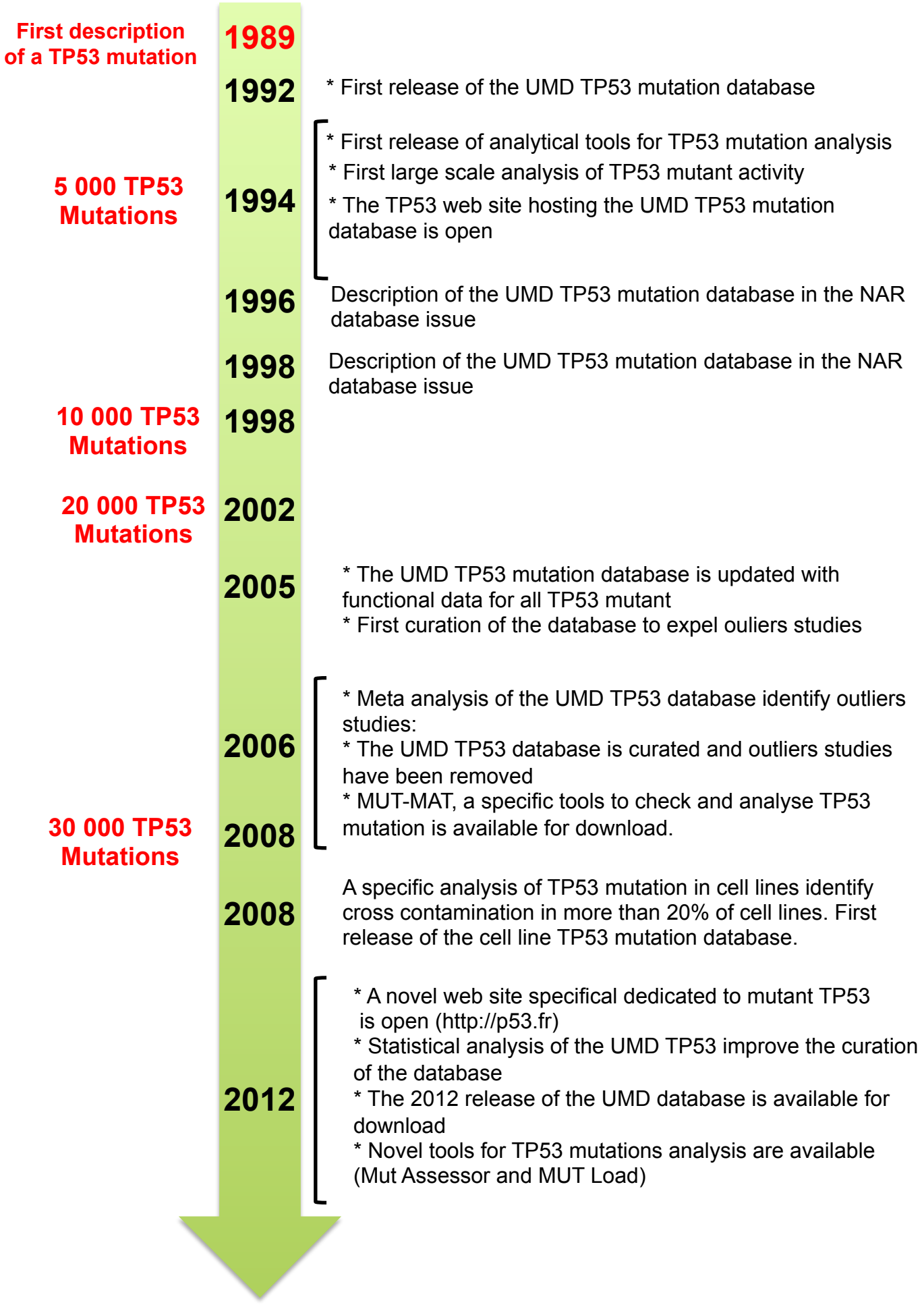
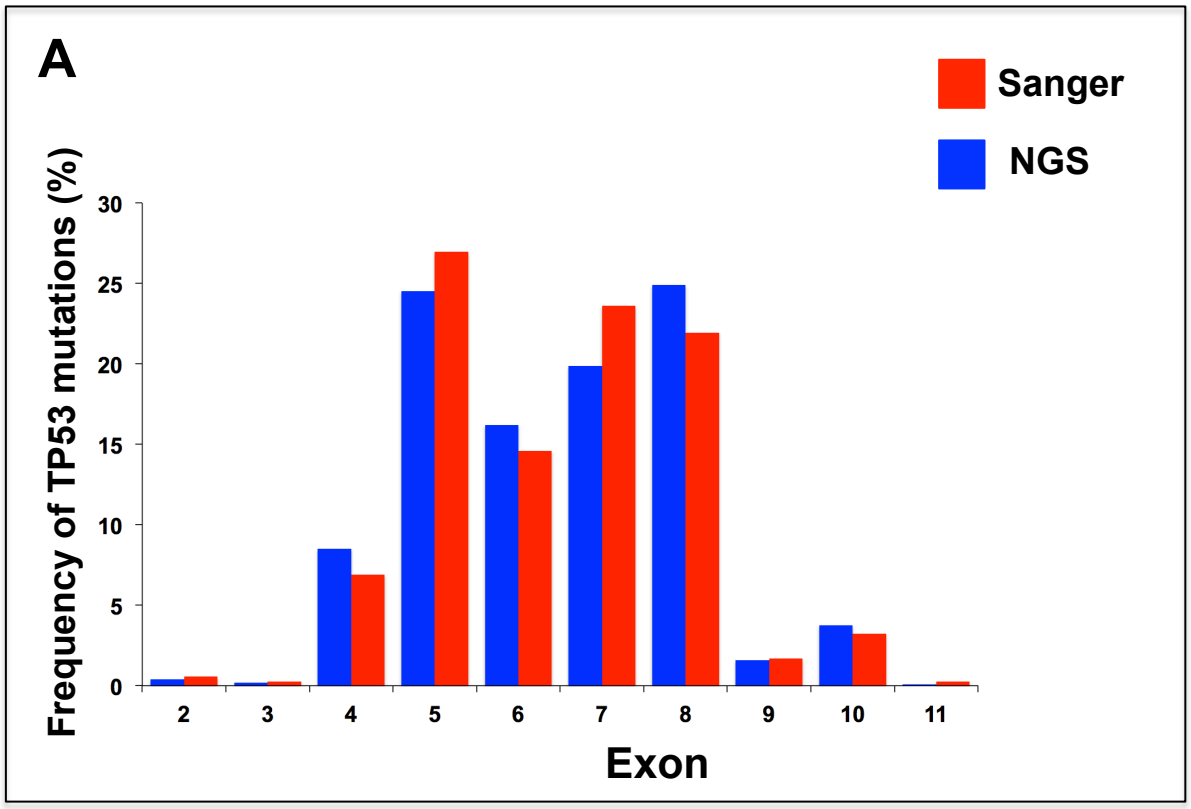
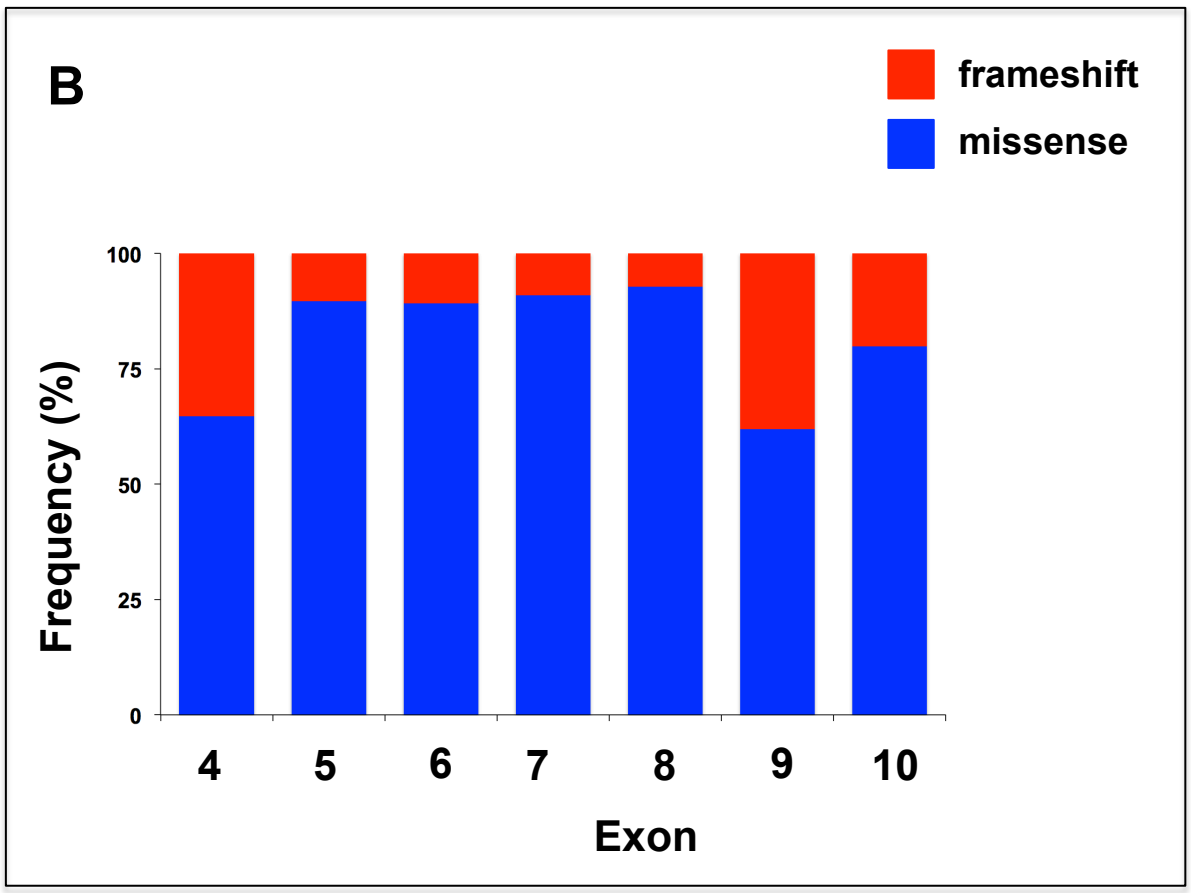
Table of Content

1. Soussi,T. (2011) TP53 Mutations in Human Cancer: Database Reassessment and Prospects for the Next Decade. *Adv Cancer Res* 110, 107-139.



Supplemental Figure S1





Supplemental Figure S2

Supplementary table 1: Relationship between TP53 gene mutations and exposure to carcinogens.

Type of cancer	Characteristics of TP53 mutations[1]	Genotoxic agent incriminated	Comments	References
Urothelial malignancy	High frequency of A:T -> T:A transversions	Aristolochic acids	Exposure of cells to Aristolochic acid leads to similar mutational events	{Grollman et al., 2007, #102859; Nedelko et al., 2009, #83731}
Hepatocellular carcinoma	Specific G->T transversions in codon 249	Aflatoxin B1	Aflatoxin B1 binds specifically to codon 249	{Puisieux et al., 1991, #42441 ;Staib et al., 2003, #79650}
Hepatic angiosarcoma	High frequency of A:T -> T:A transversions	Vinyl chloride		{Hollstein et al., 1994, #26675}
Lung cancer	High frequency of G->T transversions[2] Hot spot on codons 157 and 158	Benzo(a)pyrene (cigarette smoke)	Benzo(a)pyrene has a particular affinity for codons 157 and 158	{Denissenko et al., 1996, #34661 ;Toyooka et al., 2003, #58714}
Skin cancer (BCC and SCC)	Very high frequency of mutations on pyrimidine dimers High frequency of tandem mutations	Ultraviolet radiation	Photo-induced mutations	{Brash et al., 1991, #1302 ;Tornaletti et al., 1993, #22774}
Wilson's disease, hemochromatosis	Specific G->T transversions in codon 249	In these diseases related to iron or copper overload, overproduction of free radicals leads to high oxidative stress	Exposure of cells to a carcinogen derived from lipid peroxidation leads to alterations on codon 249 of the TP53 gene.	{Hussain et al., 2000, #45371 ;Marrogi et al., 2001, #78923}

[1] compared to TP53 mutations observed in the absence of exposure to the agent incriminated.
[2] this high frequency of transversion is also observed in cancers of the esophagus and head and neck cancers associated with drinking and smoking.
Only the most striking observations are summarized in this table. For more details, the reader can refer to the review by Hofseth et al. {Hofseth et al., 2004, #86888}
Adapated from {Soussi, 2011, #11392} with permission.

	1	2	3	4	5
Colorectal ca.	R175H (9.7)	R248Q (5.9)	R273H (5.4)	R282W (5.1)	R248W (4.9)
Breast ca.	R175H (4.0)	R248Q (3.5)	R273H (3)	R248W (2.4)	Y220C (1.7)
Lung (NSCLC)	**R248L (2.3)**	**R158L (2.1)**	R273H (1.9)	**V157F (1.9)**	R249S (1.8)
Bladder ca.	E285K (4.7)	**R280T (3.2)**	R248Q (3.1)	R175H (2.3)	R280K (2)
HNSCC	R248Q (2.9)	R175H (2.8)	R273H (2.3)	R282W (2)	Y220C (1.9)
HCC	**R249S (33.5)**	**V157F (2.1)**	R273C (1.7)	Y220C (1.2)	R248Q (0.9)
Ovarian ca.	R175H (4.6)	R273H (4.1)	Y220C (2.8)	R248Q (2.6)	R273C (2.6)
Gastric ca.	R175H (6.9)	R282W (4.9)	R273H (3.5)	R248Q (3.5)	G245S (3.3)
Prostate ca.	R273C (4)	R175H (2.5)	R273H (2.2)	**I251S (1.9)**	R248W (1.5)

Supplemental Table 2

Transcription	Structure	Cell Biology	Gain of Function
Transactivation	Binding to hsp 70	Growth arrest	Mutant-specific transactivation
Dominant negative activity for transactivation	Binding to PAb1620	Apoptosis	Interference with p73/p63 activity
In vitro DNA binding	Binding to PAb 240	Dominant negative activity for growth arrest	Mutant-specific DNA binding
In vivo DNA binding	Oligomerization	Dominant negative activity for apoptosis	Mutant-specific protein binding
	Folding	Localization	Mutant-specific activity
	Oligomerization	Mitochondrial apoptosis	Mutant p53 Ko phenotype
	Protein binding	Autophagy	
	Modification		
	Exonuclease		

Supplemental Table 3