

Table S1. Mutagenicity of water extracts in *Salmonella* TA98

Extract	Dose (L-eq/plate)	Rev/plate ^a					
		-S9			+S9		
		Exp 1	Exp 2	Exp 3	Exp 1	Exp 2	Exp 3
PennSwamp	0	21	28		27	34	
	0.1	18	28		37	42	
	0.25	25	29		22	42	
	0.5	24	27		24	30	
WestClearCk	0	21	28		27	34	
	0.1	21	34		34	35	
	0.25	20	26		27	36	
	0.5	18	36		33	31	
NSycamoreCk	0	21	38		27	34	
	0.1	19	41		35	27	
	0.25	28	30		35	42	
	0.5	36	40		34	38	
NewR	0	21	28		27	34	27
	0.1	32	41		20	40	33
	0.25	43	44		39	72	44
	0.5	46	73		44 ^b	49 ^b	40 ^b
SantaAnaR	0	21	28		27	34	27
	0.1	25	34		39	51	19
	0.25	27	51		43	54	41
	0.5	24	39		54	56	28
SycamoreSl	0	21	28		27	34	
	0.1	34	28		32	47	
	0.25	28	34		30	49	
	0.5	28	39		31	50	
SPlatte	0	21	28	17	27	34	
	0.1	28	36	25	33	37	
	0.25	24	50	25	35	43	
	0.5	29	43	35	49	52	
C-111	0	21	28		27	34	
	0.1	21	30		30	41	
	0.25	30	44		35	53	
	0.5	21	34		31	53	

TembladeroSl	0	21	28		27	34	27
	0.1	24	54		42	53	40
	0.25	44	63		50	59	53
	0.5	68	71		54 ^b	66 ^b	56 ^b
DeepCk	0	21	28		27	34	
	0.1	30	33		33	41	
	0.25	28	28		32	50	
	0.5	28	33		39	55	
PerkiomenCk	0	21	28	17	27	34	
	0.1	31	37	31	38	42	
	0.25	38	47	31	48	53	
	0.5	46	52	38	59 ^b	56 ^b	
ChicagoSSC	0	21	28	17	27	34	
	0.1	33	32	21	53	42	
	0.25	54	45	33	58	65	
	0.5	30 ^b	54 ^b	38 ^b	64 ^b	55 ^b	
FallCk	0	21	28	17	27	34	
	0.1	33	29	23	37	54	
	0.25	25	41	38	31	48	
	0.5	40	50	31	39	48	
EnoreeR	0	21	28		27	34	
	0.1	25	30		33	39	
	0.25	22	34		32	43	
	0.5	18	36		28	50	
HiteCk	0	21	28	17	27	34	
	0.1	22	41	29	29	45	
	0.25	37	50	36	41	49	
	0.5	33 ^b	49 ^b	38 ^b	42	48	
IowaR	0	21	28	17	27	34	
	0.1	18	39	28	33	43	
	0.25	27	43	38	33	40	
	0.5	31 ^b	53 ^b	33 ^b	36	52	
RushCk	0	21	28	17	27	34	
	0.1	31	48	28	42	28	
	0.25	29	41	33	47	36	
	0.5	31	61	26	40	54	

SwiftcurrentCk	0	21	28		27	34	
	0.1	42	37		44	35	
	0.25	28	36		39	35	
	0.5	29	47		42	41	
DMSO		22	35	18	33	30	25
		21	24	13	25	41	27
		19	25	19	22	32	30
2-NF (3 µg/plate)		309	376	257			
		277	377	251			
		288	390	244			
2-AA (0.5 µg/plate)					623	369	506
					660	546	539
					586	356	514

^aNumbers are rev/plate. The DMSO controls had 3 plates per experiment, and all 3 values for each DMSO control are shown at the bottom of the table. The values next to the zero dose are the average of those 3 plates. Likewise, there were 3 plates for each positive control, and those values are also shown at the bottom of the table. All other values represent a single plate. 2-NF (2-nitrofluorene) was the positive control in the absence of S9, and 2-AA (2-aminoanthracene) was the positive control in the presence of S9.

^bData not used in the linear regression because the r^2 -value was reduced by inclusion of those data.

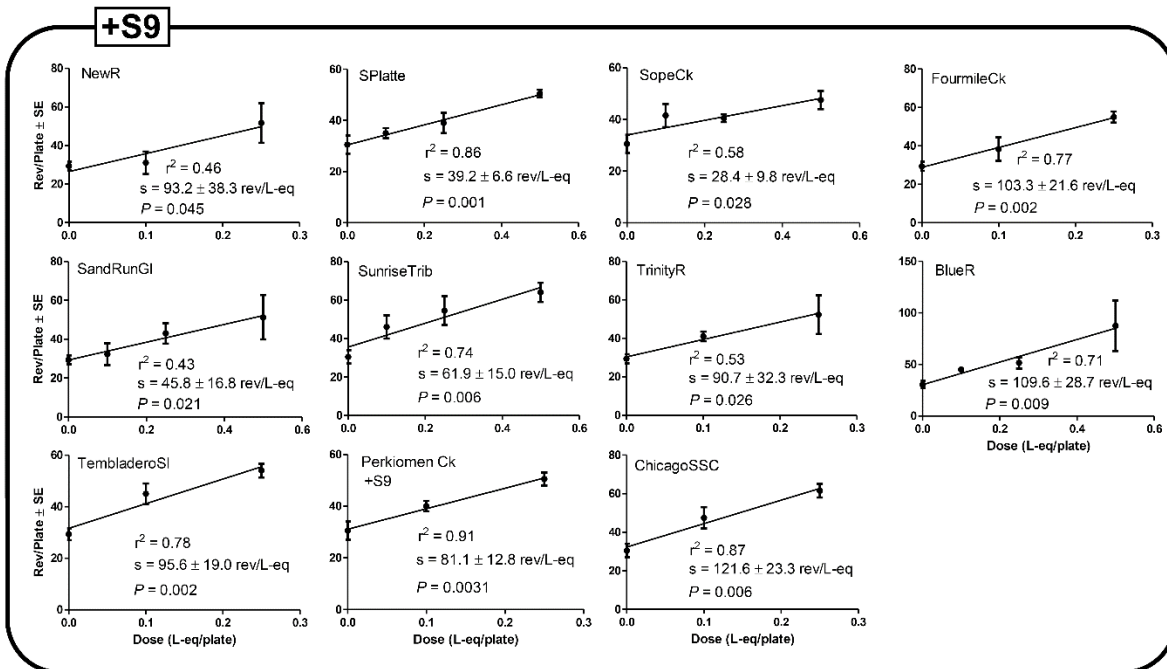
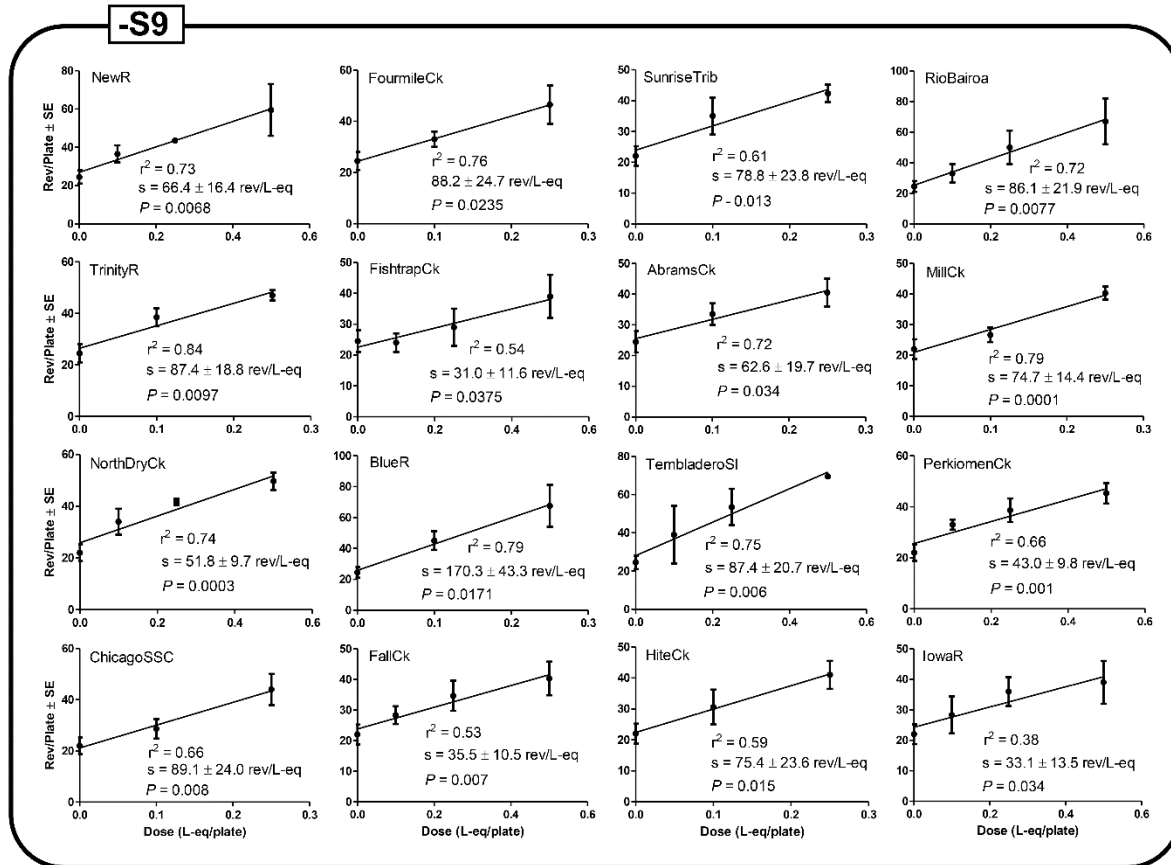


Figure S1. Linear regressions of mutagenicity dose-response curves of mutagenic samples; data from Table S1. Non-mutagenic samples are not shown.

Table S2. Mutagenic Potencies of USGS Surface Waters in <i>Salmonella</i> TA98^a			
Sample (abbreviation)		Rev/L-eq ± SE	
No.	Name	-S9	+S9
1	Penn Swamp Branch (PennSwamp)	0.0	0.0
2	West Clear Creek (WestClearCk)	0.0	0.0
3	North Sylamore Creek (NSylamoreCk)	0.0	0.0
4	New River (NewR)	66.4 ± 16.4	93.2 ± 38.3
5	Santa Ana River (SantaAnaR)	0.0	0.0
6	Sycamore Slough (SycamoreSl)	0.0	0.0
7	South Platte River (SPlatte)	0.0	39.2 ± 6.6
8	C-111 Canal (C-111)	0.0	0.0
9	Hillsboro Canal (HillsboroCa)	0.0	0.0
10	Sope Creek (SopeCk)	0.0	28.4 ± 9.8
11	Fourmile Creek (FourmileCk)	88.2 ± 24.7	103.3 ± 21.6
12	Sand Run Gulch (SandRunGl)	0.0	45.8 ± 16.8
13	South Fork Zumbro River (Zumbro)	0.0	0.0
14	Sunrise River Tributary (SunriseTrib)	78.8 ± 23.8	61.9 ± 15.0
15	Hohokus Brook (Hohokus)	0.0	0.0
17	Chisholm Creek (ChisholmCk)	0.0	0.0
19	Rio Bairoa (RioBairoa)	86.1 ± 21.9	0.0
20	Trinity River (TrinityR)	87.4 ± 18.8	90.7 ± 32.3
21	Hawksbill Creek (HawksbillCk)	0.0	0.0
22	Fishtrap Creek (FishtrapCk)	31.0 ± 11.6	0.0
23	Rio Fajardo (RioFajardo)	0.0	0.0
24	Abrams Creek (AbramsCk)	62.6 ± 19.7	0.0
25	Mill Creek (MillCk)	74.7 ± 14.4	0.0
26	North Dry Creek (NorthDryCk)	51.8 ± 9.7	0.0
27	Jordan Creek (JordanCk)	0.0	0.0
28	Blue River (BlueR)	170.3 ± 43.3	109.6 ± 28.7
29	Tembladero Slough (TembladeroSl)	87.4 ± 20.7	95.6 ± 19.0
30	Deep Creek (DeepCk)	0.0	0.0
31	East Branch Perkiomen Creek (PerkiomenCk)	43.0 ± 9.8 ^b	81.1 ± 12.8 ^b
32	Chicago Sanitary Ship Canal (ChicagoSSC)	89.1 ± 24.0	121.6 ± 23.3
33	Fall Creek (FallCk)	35.5 ± 10.5	0.0
34	Enoree River (EnoreeR)	0.0	0.0
35	Hite Creek (HiteCk)	75.4 ± 23.6	0.0
36	South Fork Iowa River (IowaR)	33.1 ± 13.5	0.0
37	Rush Creek (RushCk)	0.0	0.0
38	Swiftcurrent Creek and Swiftcurrent Lake (SwiftcurrentCk)	0.0	0.0

^aData are the slopes of the linear regressions shown in Figure S1.

^bAmong those samples that were mutagenic in both + and – S9, the mutagenic potency of only sample 31 (PerkiomenCk) was significantly different between + and – S9 ($P = 0.035$).