

MOD1 – DNA ENGINEERING

Engelward, Fall 2009

Day 7

Basic Statistics

Paper Discussion: Sonoda

Expressing Genes in Mammalian Cells

Basic Statistics

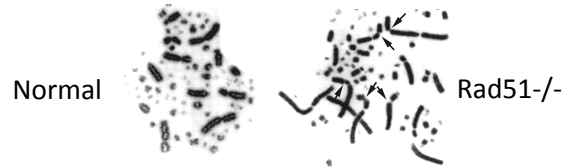
t Table

cum. prob. one-tail two-tail	$t_{.90}$	$t_{.80}$	$t_{.70}$	$t_{.60}$	$t_{.50}$	$t_{.40}$	$t_{.30}$	$t_{.20}$	$t_{.10}$	$t_{.05}$	$t_{.025}$	$t_{.01}$	$t_{.005}$	$t_{.001}$	$t_{.0005}$
df	0.000	1.000	1.376	1.963	3.078	6.314	12.71	31.82	63.66	118.31	636.62				
2	0.000	0.816	1.061	1.386	1.886	2.924	4.303	6.965	9.925	22.327	31.599				
3	0.000	0.766	0.978	1.250	1.638	2.353	3.182	4.541	6.841	10.215	12.924				
4	0.000	0.741	0.941	1.190	1.533	2.132	2.776	3.747	4.604	7.173	8.610				
5	0.000	0.727	0.920	1.156	1.476	2.016	2.571	3.365	4.032	5.893	6.965				
6	0.000	0.718	0.906	1.134	1.440	1.943	2.447	3.143	3.707	5.208	5.959				
7	0.000	0.711	0.896	1.119	1.415	1.886	2.366	2.968	3.499	4.785	5.408				
8	0.000	0.706	0.889	1.108	1.397	1.860	2.306	2.896	3.355	4.501	5.041				
9	0.000	0.703	0.883	1.100	1.383	1.833	2.262	2.821	3.250	4.297	4.781				
10	0.000	0.700	0.878	1.093	1.372	1.812	2.228	2.764	3.169	4.144	4.587				
11	0.000	0.697	0.874	1.088	1.363	1.796	2.201	2.718	3.106	4.025	4.437				
12	0.000	0.695	0.873	1.083	1.356	1.782	2.179	2.681	3.055	3.933	4.318				
13	0.000	0.694	0.870	1.079	1.350	1.771	2.160	2.660	3.012	3.882	4.241				
14	0.000	0.692	0.868	1.075	1.345	1.761	2.145	2.624	2.977	3.787	4.140				
15	0.000	0.691	0.866	1.074	1.341	1.753	2.131	2.602	2.947	3.733	4.071				
16	0.000	0.690	0.865	1.071	1.337	1.746	2.120	2.581	2.921	3.686	4.015				
17	0.000	0.689	0.863	1.069	1.333	1.740	2.110	2.567	2.898	3.646	3.966				
18	0.000	0.688	0.862	1.067	1.330	1.734	2.101	2.552	2.876	3.610	3.925				
19	0.000	0.688	0.861	1.066	1.328	1.729	2.093	2.539	2.861	3.579	3.883				
20	0.000	0.687	0.860	1.064	1.325	1.725	2.086	2.528	2.846	3.552	3.848				
21	0.000	0.686	0.859	1.063	1.323	1.721	2.080	2.518	2.831	3.527	3.819				
22	0.000	0.686	0.858	1.061	1.321	1.717	2.074	2.508	2.819	3.505	3.792				
23	0.000	0.685	0.858	1.060	1.319	1.714	2.069	2.500	2.807	3.485	3.768				
24	0.000	0.685	0.857	1.059	1.318	1.711	2.064	2.492	2.797	3.467	3.745				
25	0.000	0.684	0.856	1.058	1.316	1.708	2.060	2.485	2.787	3.450	3.725				
26	0.000	0.684	0.856	1.058	1.315	1.706	2.056	2.479	2.779	3.435	3.707				
27	0.000	0.684	0.855	1.057	1.314	1.703	2.052	2.473	2.771	3.421	3.690				
28	0.000	0.683	0.855	1.056	1.313	1.701	2.048	2.467	2.763	3.408	3.674				
29	0.000	0.683	0.854	1.055	1.311	1.699	2.045	2.462	2.756	3.396	3.659				
30	0.000	0.683	0.854	1.055	1.310	1.697	2.042	2.457	2.750	3.385	3.646				
40	0.000	0.681	0.851	1.050	1.303	1.684	2.021	2.423	2.704	3.307	3.561				
60	0.000	0.679	0.848	1.045	1.296	1.671	2.000	2.390	2.640	3.232	3.460				
80	0.000	0.678	0.846	1.043	1.292	1.664	1.990	2.374	2.629	3.195	3.416				
100	0.000	0.677	0.845	1.042	1.290	1.660	1.984	2.364	2.626	3.174	3.396				
1000	0.000	0.675	0.842	1.037	1.282	1.648	1.962	2.330	2.581	3.098	3.300				
Z	0.000	0.674	0.842	1.036	1.282	1.645	1.960	2.326	2.576	3.090	3.291				
	0%	20%	40%	60%	80%	90%	95%	98%	99%	99.5%	99.8%				

Confidence Level

Paper Discussion

Why you owe Your Life to Homologous Recombination...



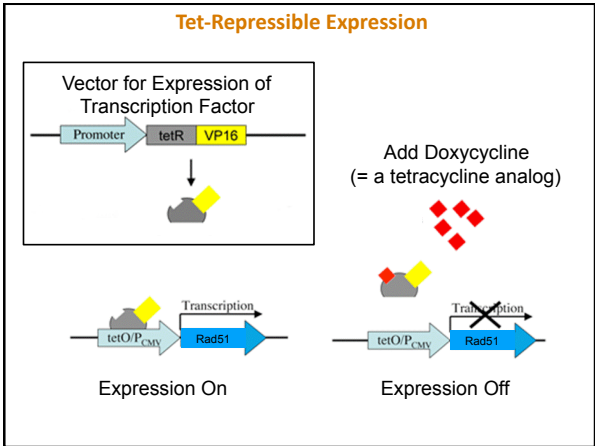
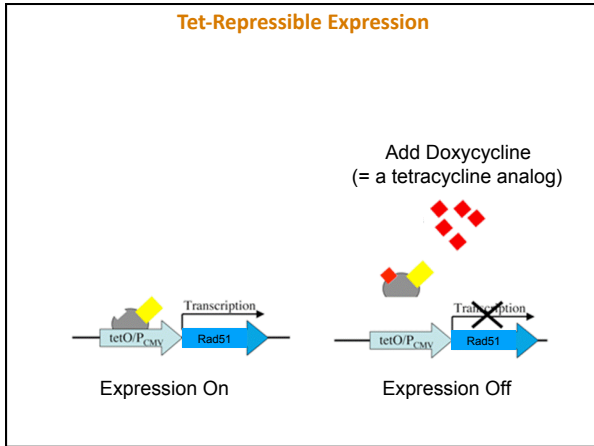
But how do we that cells cannot survive without HR?

Sonada *et al.*, *EMBO J.* **17**, 598–608 (1998).

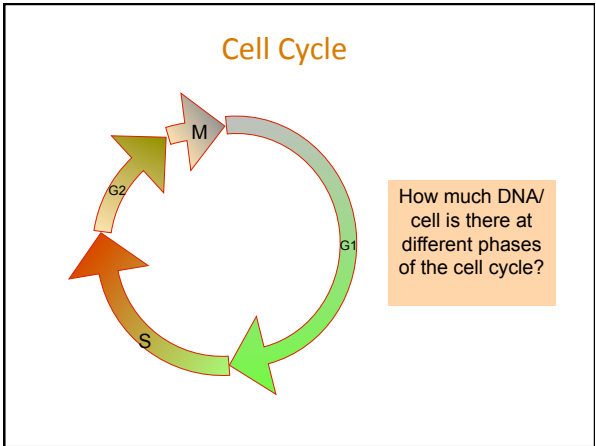
Conditional Expression: Tet-Repressible Expression

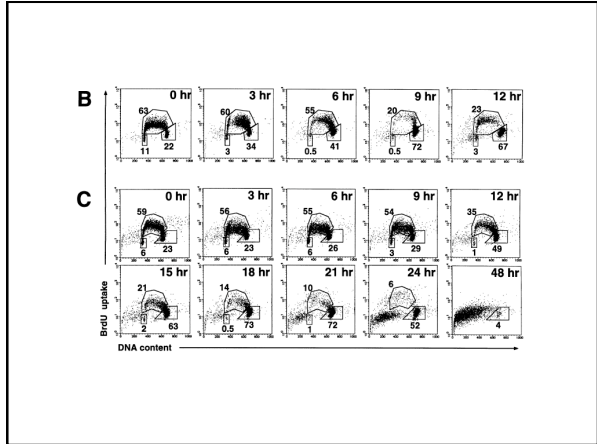
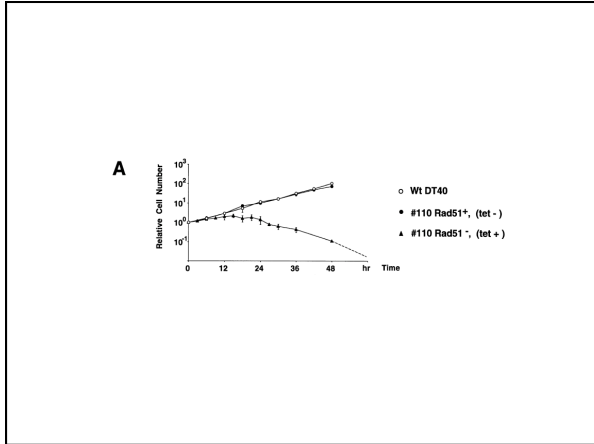
Tet-Repressible Expression





Cell Cycle Analysis





**Expressing Genes
 in Mammalian Cells**

Lipofection
 Transient
 Replicating
 Integrated
 Targeted