TABLE 2. Quantities of individual aminoacyl-tRNA molecules in cells of various strains of *E. coli*[a]

Amino acid	Aminoacyl-tRNA (molecules per cell) in the following *E. coli* strain:			
	trpS9969	Ymel	trpS9969 revertant	K38
Ala	2,030	3,510	5,030	4,000
Arg	1,970	2,210	2,880	2,480
Asn	380	360	720	1,230
Asp	2,330	2,760	3,960	3,670
Cys	1,320	2,570	4,100	2,000
Gln	1,130	1,230	910	730
Glu	1,170	1,020	320	880
Gly	1,920	2,150	3,070	4,370
His	2,200	1,300	1,480	1,900
Ile	6,130	4,580	5,130	4,930
Leu	3,870	4,180	5,110	5,330
Lys	4,620	4,710	4,150	4,300
Met	2,560	2,000	2,140	4,020
Phe	1,370	1,650	1,370	1,830
Pro	2,270	2,700	2,600	2,620
Ser	5,730	5,580	5,550	6,270
Thr	4,870	5,970	5,300	4,700
Trp	475	830	785	790
Tyr	420	1,490	805	1,030
Val	5,600	5,940	5,460	7,910

[a] Small (1-ml) cultures of *E. coli* were labeled with 10.5 μM, ^{3}H-amino acid for 2 min at 37°C. ^{3}H-aminoacyl-tRNA was extracted and assayed as described in the text. The counting efficiency of ^{3}H-aminoacyl-tRNAs on glass fiber filters was 31%. The level of aminoacyl-tRNAs in strain trpS9969 was determined in the presence of 10 μM Trp. The initial rate of protein synthesis in trpS9969 cells does not depend on Trp concentration above 5 μM (15). Similar results were obtained at 100 μM Trp in several selected tests. Most of the values (80%) were obtained from two to four independent determinations both of the base-sensitive fraction of ^{3}H-amino acid-labeled RNA and of ^{3}H-amino acid released from the labeled RNA upon base treatment (only the data for asparaginyl-tRNA, cysteinyl-tRNA, and argininyl-tRNA were obtained exclusively by determination of base-sensitive fraction of ^{3}H-amino acid-labeled RNA).