

codon	wild-type	amino acid
1	atg	methionine
2	ggg	glycine
3	aag	lysine
4	aaa	lysine
5	gtg	valine
6	gcc	alanine
7	atc	isoleucine
8	att	isoleucine
9	gga	glycine
10	gct	alanine
11	ggt	glycine
12	gtg	valine
13	agt	serine
14	ggc	glycine
15	ttg	leucine
16	gcc	alanine
17	tcc	serine
18	atc	isoleucine
19	agg	arginine
20	agc	leucine
21	tgt	serine
22	ctg	cysteine
23	gaa	glutamic acid
24	gag	glutamic acid
25	ggg	glycine
26	ctg	leucine
27	gag	glutamic acid
28	ccc	proline
29	acc	threonine
30	tgc	cysteine
31	ttt	phenylalanine
32	gag	glutamic acid
33	aag	lysine
34	agc	serine
35	aat	asparagine
36	gac	aspartic acid
37	att	isoleucine
38	ggg	glycine
39	ggc	glycine
40	ctg	leucine
41	tgg	tryptophan
42	aaa	lysine
43	ttt	phenylalanine
44	tca	serine
45	gac	aspartic acid
46	cat	histidine
47	gca	alanine
48	gag	glutamic acid
49	gag	glutamic acid
50	ggc	glycine
51	agg	arginine
52	gct	alanine
53	agc	serine
54	att	isoleucine
55	tac	tyrosine

codon	wild-type	amino acid
56	aaa	lysine
57	tca	serine
58	gtc	valine
59	ttt	phenylalanine
60	tcc	serine
61	aac	asparagine
62	tct	serine
63	tcc	serine
64	aaa	lysine
65	gag	glutamic acid
66	atg	methionine
67	atg	methionine
68	tgt	cysteine
69	ttc	phenylalanine
70	cca	proline
71	gac	aspartic acid
72	ttc	phenylalanine
73	cca	proline
74	ttt	phenylalanine
75	ccc	proline
76	gat	aspartic acid
77	gac	aspartic acid
78	ttc	phenylalanine
79	ccc	proline
80	aac	asparagine
81	ttt	phenylalanine
82	atg	methionine
83	cac	histidine
84	aac	asparagine
85	agc	serine
86	aag	lysine
87	atc	isoleucine
88	cag	glutamine
89	gaa	glutamic acid
90	tat	tyrosine
91	atc	isoleucine
92	att	isoleucine
93	gca	alanine
94	ttt	phenylalanine
95	gcc	alanine
96	aaa	lysine
97	gaa	glutamic acid
98	aag	lysine
99	aac	asparagine
100	ctc	leucine
101	ctg	leucine
102	aag	lysine
103	tac	tyrosine
104	ata	isoleucine
105	caa	glutamine
106	ttt	phenylalanine
107	aag	lysine
108	aca	threonine
109	ttt	phenylalanine
110	gta	valine

codon	wild-type	amino acid
111	tcc	serine
112	agt	serine
113	gta	valine
114	aat	asparagine
115	aaa	lysine
116	cat	histidine
117	cct	proline
118	gat	aspartic acid
119	ttt	phenylalanine
120	gca	valine
121	act	threonine
122	act	threonine
123	ggc	glycine
124	cag	glutamine
125	tgg	tryptophan
126	gat	aspartic acid
127	gtt	valine
128	acc	threonine
129	act	threonine
130	gaa	glutamic acid
131	agg	arginine
132	gat	aspartic acid
133	ggt	glycine
134	aaa	lysine
135	aaa	lysine
136	gaa	glutamic acid
137	tcg	serine
138	gct	alanine
139	gtc	valine
140	ttt	phenylalanine
141	gat	aspartic acid
142	gct	alanine
143	gta	valine
144	atg	methionine
145	gtt	valine
146	tgt	cysteine
147	tcc	cysteine
148	gga	glycine
149	cat	histidine
150	cat	histidine
151	gtg	valine
152	tat	tyrosine
153	ccc	proline
154	aac	asparagine
155	cta	leucine
156	cca	proline
157	aaa	lysine
158	gag	glutamic acid
159	tcc	serine
160	ttt	phenylalanine
161	cca	proline
162	gga	glycine
163	cta	leucine
164	aac	asparagine
165	cac	histidine

codon	wild-type	amino acid
166	ttt	phenylalanine
167	aaa	lysine
168	ggc	glycine
169	aaa	lysine
170	tgc	cysteine
171	ttc	phenylalanine
172	cac	histidine
173	agc	serine
174	agg	arginine
175	gac	aspartic acid
176	tat	tyrosine
177	aaa	lysine
178	gaa	glutamic acid
179	cca	proline
180	ggt	glycine
181	gta	valine
182	ttc	phenylalanine
183	aat	asparagine
184	gga	glycine
185	aag	lysine
186	cgt	arginine
187	gtc	valine
188	ctg	leucine
189	gtg	valine
190	gtt	valine
191	ggc	glycine
192	ctg	leucine
193	ggg	glycine
194	aat	asparagine
195	tcg	serine
196	ggc	glycine
197	tgt	cysteine
198	gat	aspartic acid
199	att	isoleucine
200	gcc	alanine
201	aca	threonine
202	gaa	glutamic acid
203	ctc	leucine
204	agc	serine
205	cgc	arginine
206	aca	threonine
207	gca	alanine
208	gaa	glutamic acid
209	cag	glutamine
210	gtg	valine
211	atg	methionine
212	atc	isoleucine
213	agt	serine
214	tcc	serine
215	aga	arginine
216	agt	serine
217	ggc	glycine
218	tcc	serine
219	tgg	tryptophan
220	gtg	valine

codon	wild-type	amino acid
221	atg	methionine
222	agc	serine
223	cgg	arginine
224	gtc	valine
225	tgg	tryptophan
226	gac	aspartic acid
227	aat	asparagine
228	ggt	glycine
229	tat	tyrosine
230	cct	proline
231	tgg	tryptophan
232	gac	aspartic acid
233	atg	methionine
234	ctg	leucine
235	ctc	leucine
236	gtc	valine
237	act	threonine
238	cga	arginine
239	ttt	phenylalanine
240	gga	glycine
241	acc	threonine
242	ttc	phenylalanine
243	ctc	leucine
244	aag	lysine
245	aac	asparagine
246	aat	asparagine
247	tta	leucine
248	ccg	proline
249	aca	threonine
250	gcc	alanine
251	atc	isoleucine
252	tct	serine
253	gac	aspartic acid
254	tgg	tryptophan
255	ttg	leucine
256	tac	tyrosine
257	gtg	valine
258	aag	lysine
259	cag	glutamine
260	atg	methionine
261	aat	asparagine
262	gca	alanine
263	aga	arginine
264	ttc	phenylalanine
265	aag	lysine
266	cat	histidine
267	gaa	glutamic acid
268	aac	asparagine
269	tat	tyrosine
270	ggc	glycine
271	ttg	leucine
272	atg	methionine
273	cct	proline
274	tta	leucine
275	aat	asparagine

codon	wild-type	amino acid
276	gga	glycine
277	gtc	valine
278	gtg	leucine
279	agg	arginine
280	aaa	lysine
281	gag	glutamic acid
282	cct	proline
283	gta	valine
284	ttt	phenylalanine
285	aac	asparagine
286	gat	aspartic acid
287	gag	glutamic acid
288	ctc	leucine
289	cca	proline
290	gca	alanine
291	agc	serine
292	att	isoleucine
293	ctg	leucine
294	tgt	cysteine
295	ggc	glycine
296	att	isoleucine
297	gtg	valine
298	tcc	serine
299	gta	valine
300	aag	lysine
301	cct	proline
302	aac	asparagine
303	gtg	valine
304	aag	lysine
305	gaa	glutamic acid
306	ttc	phenylalanine
307	aca	threonine
308	gag	glutamic acid
309	acc	threonine
310	tcg	serine
311	gcc	alanine
312	att	isoleucine
313	ttt	phenylalanine
314	gag	glutamic acid
315	gat	aspartic acid
316	ggg	glycine
317	acc	threonine
318	ata	isoleucine
319	ttt	phenylalanine
320	gag	glutamic acid
321	ggc	glycine
322	att	isoleucine
323	gac	aspartic acid
324	tgt	cysteine
325	gta	valine
326	atc	isoleucine
327	ttt	phenylalanine
328	cga	alanine
329	aca	threonine
330	ggg	glycine

codon	wild-type	amino acid
331	tat	tyrosine
332	agt	serine
333	ttt	phenylalanine
334	gcc	alanine
335	tac	tyrosine
336	ccc	proline
337	ttc	phenylalanine
338	ctt	leucine
339	gat	aspartic acid
340	gag	glutamic acid
341	tct	serine
342	atc	isoleucine
343	atc	isoleucine
344	aaa	lysine
345	agc	serine
346	aga	arginine
347	aac	asparagine
348	aat	asparagine
349	gag	glutamic acid
350	atc	isoleucine
351	att	isoleucine
352	tta	leucine
353	ttt	phenylalanine
354	aaa	lysine
355	gga	glycine
356	gta	valine
357	ttt	phenylalanine
358	cgt	proline
359	cct	proline
360	cta	leucine
361	ctt	leucine
362	gag	glutamic acid
363	aag	lysine
364	tca	serine
365	acc	threonine
366	ata	isoleucine
367	gca	alanine
368	gtg	valine
369	att	isoleucine
370	ggc	glycine
371	ttt	phenylalanine
372	gtc	valine
373	cag	glutamine
374	tcc	serine
375	ctt	leucine
376	ggg	glycine
377	gct	alanine
378	gcc	alanine
379	att	isoleucine
380	ccc	proline
381	aca	threonine
382	gtt	valine
383	gac	aspartic acid
384	ctc	leucine
385	cag	glutamine

codon	wild-type	amino acid
386	tcc	serine
387	cgc	arginine
388	tgg	tryptophan
389	gca	alanine
390	gca	alanine
391	caa	glutamine
392	gta	valine
393	ata	isoleucine
394	aag	lysine
395	gga	glycine
396	act	threonine
397	tgt	cysteine
398	act	threonine
399	ttg	leucine
400	cct	proline
401	tct	serine
402	atg	methionine
403	gaa	glutamic acid
404	gac	aspartic acid
405	atg	methionine
406	atg	methionine
407	aat	asparagine
408	gat	aspartic acid
409	att	isoleucine
410	aat	asparagine
411	gag	glutamic acid
412	aaa	lysine
413	atg	methionine
414	gag	glutamic acid
415	aaa	lysine
416	aag	lysine
417	cgc	arginine
418	aaa	lysine
419	tgg	tryptophan
420	ttt	phenylalanine
421	ggc	glycine
422	aaa	lysine
423	agc	serine
424	gag	glutamic acid
425	acc	threonine
426	ata	isoleucine
427	cag	glutamine
428	aca	threonine
429	gat	aspartic acid
430	tac	tyrosine
431	att	isoleucine
432	gtt	valine
433	tat	tyrosine
434	atg	methionine
435	gat	aspartic acid
436	gaa	glutamic acid
437	ctc	leucine
438	tcc	serine
439	tcc	serine
440	ttc	phenylalanine

codon	wild-type	amino acid
441	att	isoleucine
442	ggg	glycine
443	gca	alanine
444	aag	lysine
445	ccc	proline
446	aac	asparagine
447	atc	isoleucine
448	cca	proline
449	tgg	tryptophan
450	ctg	leucine
451	ttt	phenylalanine
452	ctc	leucine
453	aca	threonine
454	gat	aspartic acid
455	ccc	proline
456	aaa	lysine
457	ttg	leucine
458	gcc	alanine
459	atg	methionine
460	gaa	glutamic acid
461	gtt	valine
462	tat	tyrosine
463	ttt	phenylalanine
464	ggc	glycine
465	cct	proline
466	tgt	cysteine
467	agt	serine
468	ccc	proline
469	tac	tyrosine
470	cag	glutamine
471	ttt	phenylalanine
472	agg	arginine
473	ctg	leucine
474	ctg	valine
475	ggc	glycine
476	cca	proline
477	ggg	glycine
478	cag	glutamine
479	tgg	tryptophan
480	cca	proline
481	gga	glycine
482	gcc	alanine
483	aga	arginine
484	aat	asparagine
485	gcc	alanine
486	ata	isoleucine
487	gtg	leucine
488	acc	threonine
489	cag	glutamine
490	tgg	tryptophan
491	gac	aspartic acid
492	cgg	arginine
493	tcg	serine
494	ttg	leucine
495	aaa	lysine

codon	wild-type	amino acid
496	ccc	proline
497	atg	methionine
498	cag	methionine
499	aca	threonine
500	cga	arginine
501	gtg	valine
502	gtc	valine
503	ggg	glycine
504	aga	arginine
505	ctt	leucine
506	cag	glutamine
507	aag	lysine
508	cct	proline
509	tgc	cysteine
510	ttc	phenylalanine
511	ttt	phenylalanine
512	ttc	phenylalanine
513	cat	histidine
514	tgc	tryptophan
515	ctg	leucine
516	aag	lysine
517	ctc	leucine
518	ttt	phenylalanine
519	gca	alanine
520	att	isoleucine
521	cct	proline
522	att	isoleucine
523	ctg	leucine
524	tta	leucine
525	atc	isoleucine
526	gtc	alanine
527	gtt	valine
528	ttc	phenylalanine
529	ctt	leucine
530	gtg	valine
531	ttg	leucine
532	acc	threonine
533	taa	stop codon