Table S1. Analysis of variance of H_2 and O_2 production under different chemical supplement treatments presented in Table 1.

Dependent variable	Source	Type III Sum of Squares	df	Mean Square	F	p-values	Partial Eta Squared
H_2 production rate	Chemical supplements	0.481	18	0.027	244.175	<0.001	0.991
O_2 production rate	Chemical supplements	320.499	18	17.806	783.544	<0.001	0.997
Maximum cumulative H_2 yield	Chemical supplements	117.648	18	6.536	641.280	<0.001	0.997
Maximum cumulative O_2 yield	Chemical supplements	8117.970	18	450.998	778.274	<0.001	0.997

Table S2. Statistical analysis of H_2 and O_2 production rates presented in Figure 1.

Dependent variable	Source	Type III Sum of Squares	df	Mean Square	F	p-values	Partial Eta Squared
H_2 production rate	Glucose concentration	0.396	8	0.050	462.457	<0.001	0.995
O_2 production rate	Glucose concentration	39.465	8	4.933	432.201	<0.001	0.995

Table S3. Statistical analysis of H_2 and O_2 production rates presented in Figure 2.

Dependent variable	Source	Type III Sum of Squares	df	Mean Square	F	p-values	Partial Eta Squared
H_2 production rate	Sodium dithionite concentration	0.071	6	0.012	111.997	<0.001	0.980
O_2 production rate	Sodium dithionite concentration	8.711	6	1.452	124.437	<0.001	0.982

Table S4. Statistical analysis of H_2 and O_2 production rates presented in Figure 3.

Dependent variable	Source	Type III Sum of Squares	df	Mean Square	F	p-values	Partial Eta Squared
H_2 production rate	DTT concentration	0.063	6	0.010	86.073	<0.001	0.974
O_2 production rate	DTT concentration	13.348	6	2.225	413.860	<0.001	0.994

Table S5. Statistical analysis of H_2 production rates presented in Figure 4.

Dependent variable	Source	Type III Sum of Squares	df	Mean Square	F	p-values	Partial Eta Squared
H_2 production rate	Type of stimulants	58.851	6	9.809	4981.486	<0.001	1.000

Table S6. Statistical analysis of H_2 and O_2 production, cumulative gas yields, and hydrogenase activity under different conditions presented in Table 2.

Dependent variable	Source	Type III Sum of Squares	df	Mean Square	F	p-values	Partial Eta Squared
H_2 production rate	Conditions	0.232	4	0.058	167.644	<0.001	0.985
O_2 production rate	Conditions	13.007	4	3.252	886.739	<0.001	0.997
Maximum cumulative H_2 yield	Conditions	52.126	4	13.032	262.946	<0.001	0.991
Maximum cumulative O_2 yield	Conditions	206.046	4	51.511	408.951	<0.001	0.994
Hydrogenase activity	Conditions	0.128	4	0.032	48.172	<0.001	0.951