

Supplementary Tables S2-S5: selected EEG biomarkers

S2. Supplementary Tables: selected EEG biomarkers for each drug comparison (all alpha values combined)

Supplementary Table S2.1. selected EEG biomarkers for the ketamine, thiopental, and placebo comparison (all alpha values combined)

EEG biomarker	# of selections	% of selections
avg_standards_20to50hz_post_stim_post_sub_pre_slope	20	100.00%
Pow_1-250ms_betaHz_PostSubPre	13	65.00%
Pow_1-500ms_thetaHz_PostSubPre	10	50.00%
avg_standards_delta_pre_stim_post_sub_pre_peak_pw_0s	10	50.00%
EvokedPow_251_500ms_Full_spect_PostInf	9	45.00%
Pow_1-500ms_betaHz_PostSubPre	5	25.00%
Pow_-250--1ms_betaHz_PostSubPre	4	20.00%
Pow_1-250ms_thetaHz_PostSubPre	2	10.00%
avg_standards_20to50hz_pre_stim_post_sub_pre_slope	2	10.00%
Pow_1-500ms_alphaHz_PostSubPre	2	10.00%
avg_standards_20to50hz_post_stim_post_inf_slope	2	10.00%
Pow_1-250ms_betaHz_PostInf	1	5.00%
Peak_raw_251_500ms_Full_spect_PostSubPre	1	5.00%
SNR_rms_raw_251_500ms_Full_spect_PostInf	1	5.00%
avg_standards_beta_pre_stim_post_sub_pre_peak_cf_0s	1	5.00%
Pow_-250--1ms_gamma2Hz_PostSubPre	1	5.00%
Peak_raw_251_500ms_Full_spect_PostInf	1	5.00%
Pow_251-500ms_betaHz_PostSubPre	1	5.00%
avg_standards_alpha_post_stim_post_sub_pre_peak_cf_0s	1	5.00%
Pow_-250--1ms_betaHz_PostInf	1	5.00%
Pow_-250--1ms_thetaHz_PostSubPre	1	5.00%
avg_standards_gammato50_post_stim_post_sub_pre_peak_pw_0s	1	5.00%
avg_standards_alpha_post_stim_post_sub_pre_peak_pw_1s	1	5.00%
LZC_Sig_251-500ms_fullspectHz_PostSubPre	1	5.00%
avg_standards_theta_pre_stim_post_sub_pre_peak_pw_0s	1	5.00%
avg_standards_beta_post_stim_post_sub_pre_peak_pw_1s	1	5.00%
Pow_251-500ms_deltaHz_PostInf	1	5.00%

Supplementary Table S2.2. selected EEG biomarkers for the ketamine and placebo comparison (all alpha values combined)

EEG biomarker	# of selections	% of selections
avg_standards_20to50hz_post_stim_post_sub_pre_slope	19	95.00%
avg_standards_delta_pre_stim_post_sub_pre_peak_pw_0s	11	55.00%
Pow_1-250ms_betaHz_PostSubPre	9	45.00%
avg_standards_20to50hz_post_stim_post_inf_slope	6	30.00%
Pow_251-500ms_deltaHz_PostInf	6	30.00%
Pow_-250--1ms_betaHz_PostSubPre	6	30.00%
Pow_1-500ms_betaHz_PostSubPre	6	30.00%
Peak_raw_251_500ms_Full_spect_PostSubPre	5	25.00%
avg_standards_delta_post_stim_post_inf_peak_pw_1s	4	20.00%
Pow_1-500ms_alphaHz_PostSubPre	3	15.00%
avg_standards_alpha_post_stim_post_inf_peak_cf_0s	3	15.00%
avg_standards_beta_pre_stim_post_sub_pre_peak_bw_0s	3	15.00%
avg_standards_beta_post_stim_post_sub_pre_peak_pw_1s	3	15.00%
avg_standards_beta_post_stim_post_inf_peak_bw_1s	3	15.00%
Pow_1-500ms_deltaHz_PostInf	2	10.00%
avg_standards_alpha_post_stim_post_sub_pre_peak_cf_0s	2	10.00%
avg_standards_beta_pre_stim_post_inf_peak_cf_0s	2	10.00%
avg_standards_delta_pre_stim_post_inf_peak_pw_0s	2	10.00%
avg_standards_delta_post_stim_post_sub_pre_peak_cf_1s	2	10.00%
avg_standards_alpha_post_stim_post_sub_pre_peak_pw_1s	2	10.00%
avg_standards_20to50hz_pre_stim_post_inf_slope	2	10.00%
Peak_raw_251_500ms_Full_spect_PostInf	2	10.00%
avg_standards_gammato50_post_stim_post_inf_peak_pw_0s	1	5.00%
avg_standards_delta_post_stim_post_sub_pre_peak_pw_0s	1	5.00%
EvokedPow_251_500ms_Full_spect_PostSubPre	1	5.00%
Pow_1-250ms_thetaHz_PostSubPre	1	5.00%
avg_standards_delta_pre_stim_post_sub_pre_peak_cf_0s	1	5.00%
EvokedPow_251_500ms_Full_spect_PostInf	1	5.00%
Pow_251-500ms_deltaHz_PostSubPre	1	5.00%
Pow_-250--1ms_alphaHz_PostSubPre	1	5.00%
Pow_-250--1ms_deltaHz_PostInf	1	5.00%
avg_standards_gammato50_pre_stim_post_inf_peak_pw_1s	1	5.00%
avg_standards_beta_post_stim_post_sub_pre_peak_bw_0s	1	5.00%
avg_standards_20to50hz_pre_stim_post_sub_pre_slope	1	5.00%
avg_standards_gammato50_pre_stim_post_sub_pre_peak_pw_0s	1	5.00%
avg_standards_theta_pre_stim_post_sub_pre_peak_bw_0s	1	5.00%
avg_standards_gammato50_post_stim_post_sub_pre_peak_cf_1s	1	5.00%
avg_standards_beta_pre_stim_post_sub_pre_peak_bw_1s	1	5.00%
avg_standards_alpha_post_stim_post_sub_pre_peak_cf_1s	1	5.00%
Pow_1-250ms_alphaHz_PostSubPre	1	5.00%

Supplementary Table S2.3. selected EEG biomarkers for the thiopental and placebo comparison (all alpha values combined)

EEG biomarker	# of selections	% of selections
Pow_1-500ms_thetaHz_PostSubPre	13	65.00%
avg_standards_20to50hz_post_stim_post_sub_pre_slope	12	60.00%
Pow_1-250ms_betaHz_PostSubPre	11	55.00%
Pow_-250--1ms_betaHz_PostSubPre	9	45.00%
Pow_251-500ms_thetaHz_PostSubPre	9	45.00%
LZC_Sig_251-500ms_fullspectHz_PostSubPre	7	35.00%
avg_standards_delta_pre_stim_post_sub_pre_peak_pw_0s	6	30.00%
avg_standards_20to50hz_pre_stim_post_sub_pre_slope	6	30.00%
EvokedPow_251_500ms_Full_spect_PostInf	6	30.00%
SNR_rms_raw_251_500ms_Full_spect_PostInf	5	25.00%
Pow_251-500ms_thetaHz_PostInf	4	20.00%
Pow_1-500ms_betaHz_PostSubPre	3	15.00%
LZC_Sig_251-500ms_fullspectHz_PostInf	3	15.00%
avg_standards_theta_pre_stim_post_sub_pre_peak_cf_0s	3	15.00%
Pow_251-500ms_deltaHz_PostSubPre	3	15.00%
Peak_raw_251_500ms_Full_spect_PostInf	3	15.00%
SNR_rms_raw_251_500ms_Full_spect_PostSubPre	2	10.00%
avg_standards_20to50hz_pre_stim_post_inf_slope	2	10.00%
Pow_1-250ms_thetaHz_PostInf	2	10.00%
Pow_-250--1ms_alphaHz_PostSubPre	2	10.00%
Peak_raw_1_250ms_Full_spect_PostInf	1	5.00%
avg_standards_alpha_post_stim_post_sub_pre_peak_pw_0s	1	5.00%
Pow_1-250ms_thetaHz_PostSubPre	1	5.00%
avg_standards_20to50hz_post_stim_post_inf_slope	1	5.00%
avg_standards_delta_pre_stim_post_inf_peak_cf_0s	1	5.00%
avg_standards_theta_pre_stim_post_inf_peak_bw_0s	1	5.00%
Pow_1-500ms_alphaHz_PostSubPre	1	5.00%
Pow_1-250ms_betaHz_PostInf	1	5.00%
Peak_raw_251_500ms_Full_spect_PostSubPre	1	5.00%
avg_standards_beta_post_stim_post_inf_peak_pw_0s	1	5.00%
avg_standards_delta_pre_stim_post_sub_pre_peak_cf_0s	1	5.00%
avg_standards_delta_pre_stim_post_inf_peak_pw_0s	1	5.00%
avg_standards_beta_post_stim_post_inf_peak_cf_1s	1	5.00%
avg_standards_gammato50_pre_stim_post_sub_pre_peak_pw_1s	1	5.00%

Supplementary Table S2.4. selected EEG biomarkers for the ketamine and thiopental comparison (all alpha values combined)

EEG biomarker	# of selections	% of selections
avg_standards_20to50hz_post_stim_post_sub_pre_slope	20	100.00%
Pow_1-250ms_betaHz_PostSubPre	10	50.00%
Pow_1-500ms_betaHz_PostSubPre	3	15.00%
Pow_-250--1ms_betaHz_PostSubPre	1	5.00%
Pow_-250--1ms_thetaHz_PostSubPre	1	5.00%
Pow_251-500ms_betaHz_PostSubPre	1	5.00%

S3. Supplementary Tables: selected EEG biomarkers for each drug comparison across alpha values

Supplementary Table S3.1. selected EEG biomarkers for the ketamine, thiopental, and placebo comparison at alpha = 0.01

EEG biomarker	# of selections	% of selections
Pow_1-250ms_betaHz_PostSubPre	5	100.00%
avg_standards_20to50hz_post_stim_post_sub_pre_slope	5	100.00%
Pow_1-500ms_thetaHz_PostSubPre	5	100.00%
EvokedPow_251_500ms_Full_spect_PostInf	4	80.00%
Pow_1-500ms_betaHz_PostSubPre	4	80.00%
avg_standards_delta_pre_stim_post_sub_pre_peak_pw_0s	4	80.00%
Pow_-250--1ms_betaHz_PostSubPre	3	60.00%
avg_standards_20to50hz_post_stim_post_inf_slope	2	40.00%
Pow_1-500ms_alphaHz_PostSubPre	2	40.00%
avg_standards_20to50hz_pre_stim_post_sub_pre_slope	2	40.00%
Pow_-250--1ms_thetaHz_PostSubPre	1	20.00%
Pow_-250--1ms_gamma2Hz_PostSubPre	1	20.00%
Peak_raw_251_500ms_Full_spect_PostInf	1	20.00%
Pow_251-500ms_betaHz_PostSubPre	1	20.00%
Pow_1-250ms_betaHz_PostInf	1	20.00%
Pow_-250--1ms_betaHz_PostInf	1	20.00%
avg_standards_theta_pre_stim_post_sub_pre_peak_pw_0s	1	20.00%
avg_standards_gammato50_post_stim_post_sub_pre_peak_pw_0s	1	20.00%
avg_standards_alpha_post_stim_post_sub_pre_peak_pw_1s	1	20.00%
LZC_Sig_251-500ms_fullspectHz_PostSubPre	1	20.00%
avg_standards_alpha_post_stim_post_sub_pre_peak_cf_0s	1	20.00%
avg_standards_beta_post_stim_post_sub_pre_peak_pw_1s	1	20.00%
avg_standards_beta_pre_stim_post_sub_pre_peak_cf_0s	1	20.00%

Supplementary Table S3.2. selected EEG biomarkers for the Ketamine, Thiopental, and Placebo Comparison at Alpha = 0.1

EEG biomarker	# of selections	% of selections
Pow_1-250ms_betaHz_PostSubPre	5	100.00%
avg_standards_20to50hz_post_stim_post_sub_pre_slope	5	100.00%
avg_standards_delta_pre_stim_post_sub_pre_peak_pw_0s	4	80.00%
EvokedPow_251_500ms_Full_spect_PostInf	3	60.00%
Pow_1-500ms_thetaHz_PostSubPre	3	60.00%
Pow_1-250ms_thetaHz_PostSubPre	2	40.00%
SNR_rms_raw_251_500ms_Full_spect_PostInf	1	20.00%
Pow_1-500ms_betaHz_PostSubPre	1	20.00%
Pow_-250--1ms_betaHz_PostSubPre	1	20.00%
Peak_raw_251_500ms_Full_spect_PostSubPre	1	20.00%
Pow_251-500ms_deltaHz_PostInf	1	20.00%

Supplementary Table S3.3. selected EEG biomarkers for the ketamine, thiopental, and placebo comparison at alpha = 0.2

EEG biomarker	# of selections	% of selections
avg_standards_20to50hz_post_stim_post_sub_pre_slope	5	100.00%
Pow_1-250ms_betaHz_PostSubPre	3	60.00%
Pow_1-500ms_thetaHz_PostSubPre	2	40.00%
avg_standards_delta_pre_stim_post_sub_pre_peak_pw_0s	2	40.00%
EvokedPow_251_500ms_Full_spect_PostInf	2	40.00%

Supplementary Table S3.4. selected EEG biomarkers for the ketamine, thiopental, and placebo comparison at alpha = 0.5

EEG biomarker	# of selections	% of selections
avg_standards_20to50hz_post_stim_post_sub_pre_slope	5	100.00%

Supplementary Table S3.5. selected EEG biomarkers for the ketamine and placebo comparison at alpha = 0.01

EEG biomarker	# of selections	% of selections
Pow_1-250ms_betaHz_PostSubPre	5	100.00%
avg_standards_delta_pre_stim_post_sub_pre_peak_pw_0s	5	100.00%
avg_standards_20to50hz_post_stim_post_sub_pre_slope	5	100.00%
avg_standards_delta_post_stim_post_inf_peak_pw_1s	4	80.00%
avg_standards_20to50hz_post_stim_post_inf_slope	4	80.00%
Pow_251-500ms_deltaHz_PostInf	4	80.00%
Pow_-250--1ms_betaHz_PostSubPre	3	60.00%
Pow_1-500ms_alphaHz_PostSubPre	3	60.00%
Pow_1-500ms_betaHz_PostSubPre	3	60.00%
avg_standards_delta_post_stim_post_sub_pre_peak_cf_1s	2	40.00%
avg_standards_beta_pre_stim_post_inf_peak_cf_0s	2	40.00%
avg_standards_beta_post_stim_post_inf_peak_bw_1s	2	40.00%
avg_standards_alpha_post_stim_post_sub_pre_peak_cf_0s	2	40.00%
avg_standards_beta_post_stim_post_sub_pre_peak_pw_1s	2	40.00%
avg_standards_beta_pre_stim_post_sub_pre_peak_bw_0s	2	40.00%
Peak_raw_251_500ms_Full_spect_PostInf	2	40.00%
avg_standards_alpha_post_stim_post_sub_pre_peak_pw_1s	2	40.00%
avg_standards_alpha_post_stim_post_inf_peak_cf_0s	2	40.00%
avg_standards_20to50hz_pre_stim_post_inf_slope	2	40.00%
avg_standards_gammato50_pre_stim_post_inf_peak_pw_1s	1	20.00%
avg_standards_delta_post_stim_post_sub_pre_peak_pw_0s	1	20.00%
EvokedPow_251_500ms_Full_spect_PostSubPre	1	20.00%
Pow_1-250ms_thetaHz_PostSubPre	1	20.00%
avg_standards_delta_pre_stim_post_sub_pre_peak_cf_0s	1	20.00%
EvokedPow_251_500ms_Full_spect_PostInf	1	20.00%
Pow_251-500ms_deltaHz_PostSubPre	1	20.00%
Pow_-250--1ms_alphaHz_PostSubPre	1	20.00%
avg_standards_gammato50_post_stim_post_inf_peak_pw_0s	1	20.00%
Pow_1-500ms_deltaHz_PostInf	1	20.00%
avg_standards_beta_pre_stim_post_sub_pre_peak_bw_1s	1	20.00%
Pow_-250--1ms_deltaHz_PostInf	1	20.00%
Peak_raw_251_500ms_Full_spect_PostSubPre	1	20.00%
avg_standards_beta_post_stim_post_sub_pre_peak_bw_0s	1	20.00%
avg_standards_delta_pre_stim_post_inf_peak_pw_0s	1	20.00%
avg_standards_20to50hz_pre_stim_post_sub_pre_slope	1	20.00%
avg_standards_gammato50_pre_stim_post_sub_pre_peak_pw_0s	1	20.00%
avg_standards_theta_pre_stim_post_sub_pre_peak_bw_0s	1	20.00%
avg_standards_gammato50_post_stim_post_sub_pre_peak_cf_1s	1	20.00%
avg_standards_alpha_post_stim_post_sub_pre_peak_cf_1s	1	20.00%
Pow_1-250ms_alphaHz_PostSubPre	1	20.00%

Supplementary Table S3.6 selected EEG biomarkers for the ketamine and placebo comparison at alpha = 0.1

EEG biomarker	# of selections	% of selections
avg_standards_20to50hz_post_stim_post_sub_pre_slope	5	100.00%
Pow_1-250ms_betaHz_PostSubPre	3	60.00%
avg_standards_delta_pre_stim_post_sub_pre_peak_pw_0s	3	60.00%
Pow_-250--1ms_betaHz_PostSubPre	2	40.00%
Peak_raw_251_500ms_Full_spect_PostSubPre	2	40.00%
Pow_251-500ms_deltaHz_PostInf	2	40.00%
avg_standards_beta_pre_stim_post_sub_pre_peak_bw_0s	1	20.00%
avg_standards_alpha_post_stim_post_inf_peak_cf_0s	1	20.00%
Pow_1-500ms_betaHz_PostSubPre	1	20.00%
avg_standards_delta_pre_stim_post_inf_peak_pw_0s	1	20.00%
avg_standards_beta_post_stim_post_inf_peak_bw_1s	1	20.00%
avg_standards_beta_post_stim_post_sub_pre_peak_pw_1s	1	20.00%
avg_standards_20to50hz_post_stim_post_inf_slope	1	20.00%

Supplementary Table S3.7. selected EEG biomarkers for the ketamine and placebo comparison at alpha = 0.2

EEG biomarker	# of selections	% of selections
avg_standards_20to50hz_post_stim_post_sub_pre_slope	4	80.00%
avg_standards_delta_pre_stim_post_sub_pre_peak_pw_0s	3	60.00%
Pow_1-500ms_betaHz_PostSubPre	2	40.00%
Peak_raw_251_500ms_Full_spect_PostSubPre	2	40.00%
Pow_1-250ms_betaHz_PostSubPre	1	20.00%
Pow_-250--1ms_betaHz_PostSubPre	1	20.00%
Pow_1-500ms_deltaHz_PostInf	1	20.00%
avg_standards_20to50hz_post_stim_post_inf_slope	1	20.00%

Supplementary Table S3.8. selected EEG biomarkers for the ketamine and placebo comparison at alpha = 0.5

EEG biomarker	# of selections	% of selections
avg_standards_20to50hz_post_stim_post_sub_pre_slope	5	100.00%

Supplementary Table S3.9. selected EEG biomarkers for the thiopental and placebo comparison at alpha = 0.01

EEG biomarker	# of selections	% of selections
Pow_-250--1ms_betaHz_PostSubPre	5	100.00%
Pow_1-250ms_betaHz_PostSubPre	5	100.00%
SNR_rms_raw_251_500ms_Full_spect_PostInf	5	100.00%
avg_standards_delta_pre_stim_post_sub_pre_peak_pw_0s	5	100.00%
avg_standards_20to50hz_post_stim_post_sub_pre_slope	5	100.00%
LZC_Sig_251-500ms_fullspectHz_PostSubPre	5	100.00%
Pow_251-500ms_thetaHz_PostSubPre	5	100.00%
Pow_1-500ms_thetaHz_PostSubPre	4	80.00%
avg_standards_20to50hz_pre_stim_post_sub_pre_slope	4	80.00%
Pow_1-500ms_betaHz_PostSubPre	3	60.00%
Pow_251-500ms_thetaHz_PostInf	3	60.00%
LZC_Sig_251-500ms_fullspectHz_PostInf	3	60.00%
Pow_251-500ms_deltaHz_PostSubPre	2	40.00%
avg_standards_20to50hz_pre_stim_post_inf_slope	2	40.00%
EvokedPow_251_500ms_Full_spect_PostInf	2	40.00%
SNR_rms_raw_251_500ms_Full_spect_PostSubPre	2	40.00%
Pow_1-250ms_thetaHz_PostInf	2	40.00%
avg_standards_theta_pre_stim_post_sub_pre_peak_cf_0s	2	40.00%
Pow_-250--1ms_alphaHz_PostSubPre	2	40.00%
Pow_1-500ms_alphaHz_PostSubPre	1	20.00%
avg_standards_delta_pre_stim_post_inf_peak_pw_0s	1	20.00%
avg_standards_delta_pre_stim_post_sub_pre_peak_cf_0s	1	20.00%
avg_standards_beta_post_stim_post_inf_peak_pw_0s	1	20.00%
Peak_raw_251_500ms_Full_spect_PostSubPre	1	20.00%
Pow_1-250ms_betaHz_PostInf	1	20.00%
avg_standards_delta_pre_stim_post_inf_peak_cf_0s	1	20.00%
avg_standards_theta_pre_stim_post_inf_peak_bw_0s	1	20.00%
Peak_raw_251_500ms_Full_spect_PostInf	1	20.00%
avg_standards_20to50hz_post_stim_post_inf_slope	1	20.00%
Pow_1-250ms_thetaHz_PostSubPre	1	20.00%
avg_standards_alpha_post_stim_post_sub_pre_peak_pw_0s	1	20.00%
Peak_raw_1_250ms_Full_spect_PostInf	1	20.00%
avg_standards_beta_post_stim_post_inf_peak_cf_1s	1	20.00%

Supplementary Table S3.10. selected EEG biomarkers for the thiopental and placebo comparison at alpha = 0.1

EEG biomarker	# of selections	% of selections
avg_standards_20to50hz_post_stim_post_sub_pre_slope	5	100.00%
EvokedPow_251_500ms_Full_spect_PostInf	3	60.00%
Pow_1-250ms_betaHz_PostSubPre	3	60.00%
Pow_1-500ms_thetaHz_PostSubPre	3	60.00%
Pow_251-500ms_thetaHz_PostSubPre	2	40.00%
LZC_Sig_251-500ms_fullspectHz_PostSubPre	2	40.00%
Pow_-250--1ms_betaHz_PostSubPre	1	20.00%
avg_standards_delta_pre_stim_post_sub_pre_peak_pw_0s	1	20.00%
Peak_raw_251_500ms_Full_spect_PostInf	1	20.00%
avg_standards_gammato50_pre_stim_post_sub_pre_peak_pw_1s	1	20.00%
avg_standards_20to50hz_pre_stim_post_sub_pre_slope	1	20.00%
avg_standards_theta_pre_stim_post_sub_pre_peak_cf_0s	1	20.00%
Pow_251-500ms_deltaHz_PostSubPre	1	20.00%

Supplementary Table S3.11. selected EEG biomarkers for the thiopental and placebo comparison at alpha = 0.2

EEG biomarker	# of selections	% of selections
Pow_1-500ms_thetaHz_PostSubPre	4	80.00%
Pow_-250--1ms_betaHz_PostSubPre	2	40.00%
Pow_1-250ms_betaHz_PostSubPre	2	40.00%
Peak_raw_251_500ms_Full_spect_PostInf	1	20.00%
Pow_251-500ms_thetaHz_PostSubPre	1	20.00%
Pow_251-500ms_thetaHz_PostInf	1	20.00%
EvokedPow_251_500ms_Full_spect_PostInf	1	20.00%
avg_standards_20to50hz_post_stim_post_sub_pre_slope	1	20.00%

Supplementary Table S3.12. selected EEG biomarkers for the thiopental and placebo comparison at alpha = 0.5

EEG biomarker	# of selections	% of selections
Pow_1-500ms_thetaHz_PostSubPre	2	40.00%
Pow_251-500ms_thetaHz_PostSubPre	1	20.00%
Pow_-250--1ms_betaHz_PostSubPre	1	20.00%
Pow_1-250ms_betaHz_PostSubPre	1	20.00%
avg_standards_20to50hz_pre_stim_post_sub_pre_slope	1	20.00%
avg_standards_20to50hz_post_stim_post_sub_pre_slope	1	20.00%

Supplementary Table S3.13. selected EEG biomarkers for the ketamine and thiopental comparison at alpha = 0.01

EEG biomarker	# of selections	% of selections
Pow_1-250ms_betaHz_PostSubPre	5	100.00%
avg_standards_20to50hz_post_stim_post_sub_pre_slope	5	100.00%
Pow_1-500ms_betaHz_PostSubPre	3	60.00%
Pow_-250--1ms_betaHz_PostSubPre	1	20.00%
Pow_-250--1ms_thetaHz_PostSubPre	1	20.00%
Pow_251-500ms_betaHz_PostSubPre	1	20.00%

Supplementary Table S3.14. selected EEG biomarkers for the ketamine and thiopental comparison at alpha = 0.1

EEG biomarker	# of selections	% of selections
Pow_1-250ms_betaHz_PostSubPre	5	100.00%
avg_standards_20to50hz_post_stim_post_sub_pre_slope	5	100.00%

Supplementary Table S3.15. selected EEG biomarkers for the ketamine and thiopental comparison at alpha = 0.2

EEG biomarker	# of selections	% of selections
avg_standards_20to50hz_post_stim_post_sub_pre_slope	5	100.00%

Supplementary Table S3.16. selected EEG biomarkers for the ketamine and thiopental comparison at alpha = 0.5

EEG biomarker	# of selections	% of selections
avg_standards_20to50hz_post_stim_post_sub_pre_slope	5	100.00%

S4. Supplementary Tables: selected EEG biomarkers across alpha values (all drug comparisons combined)

Supplementary Table S4.1. selected EEG biomarkers at alpha = 0.01 (all drug comparisons combined)

EEG biomarker	# of selections	% of selections
Pow_1-250ms_betaHz_PostSubPre	20	100.00%
avg_standards_20to50hz_post_stim_post_sub_pre_slope	20	100.00%
avg_standards_delta_pre_stim_post_sub_pre_peak_pw_0s	14	70.00%
Pow_1-500ms_betaHz_PostSubPre	13	65.00%
Pow_-250--1ms_betaHz_PostSubPre	12	60.00%
Pow_1-500ms_thetaHz_PostSubPre	9	45.00%
EvokedPow_251_500ms_Full_spect_PostInf	7	35.00%
avg_standards_20to50hz_post_stim_post_inf_slope	7	35.00%
avg_standards_20to50hz_pre_stim_post_sub_pre_slope	7	35.00%
Pow_1-500ms_alphaHz_PostSubPre	6	30.00%
LZC_Sig_251-500ms_fullspectHz_PostSubPre	6	30.00%
Pow_251-500ms_thetaHz_PostSubPre	5	25.00%
SNR_rms_raw_251_500ms_Full_spect_PostInf	5	25.00%
avg_standards_20to50hz_pre_stim_post_inf_slope	4	20.00%
Pow_251-500ms_deltaHz_PostInf	4	20.00%
avg_standards_delta_post_stim_post_inf_peak_pw_1s	4	20.00%
Peak_raw_251_500ms_Full_spect_PostInf	4	20.00%
avg_standards_beta_post_stim_post_sub_pre_peak_pw_1s	3	15.00%
avg_standards_alpha_post_stim_post_sub_pre_peak_cf_0s	3	15.00%
avg_standards_alpha_post_stim_post_sub_pre_peak_pw_1s	3	15.00%
Pow_-250--1ms_alphaHz_PostSubPre	3	15.00%
Pow_251-500ms_deltaHz_PostSubPre	3	15.00%
Pow_251-500ms_thetaHz_PostInf	3	15.00%
LZC_Sig_251-500ms_fullspectHz_PostInf	3	15.00%
SNR_rms_raw_251_500ms_Full_spect_PostSubPre	2	10.00%
Pow_1-250ms_thetaHz_PostInf	2	10.00%
avg_standards_theta_pre_stim_post_sub_pre_peak_cf_0s	2	10.00%
Pow_1-250ms_thetaHz_PostSubPre	2	10.00%
avg_standards_delta_pre_stim_post_sub_pre_peak_cf_0s	2	10.00%
Peak_raw_251_500ms_Full_spect_PostSubPre	2	10.00%
avg_standards_delta_pre_stim_post_inf_peak_pw_0s	2	10.00%
avg_standards_beta_pre_stim_post_inf_peak_cf_0s	2	10.00%
avg_standards_beta_post_stim_post_inf_peak_bw_1s	2	10.00%
avg_standards_beta_pre_stim_post_sub_pre_peak_bw_0s	2	10.00%
avg_standards_alpha_post_stim_post_inf_peak_cf_0s	2	10.00%
Pow_251-500ms_betaHz_PostSubPre	2	10.00%
Pow_1-250ms_betaHz_PostInf	2	10.00%
Pow_-250--1ms_thetaHz_PostSubPre	2	10.00%
avg_standards_delta_post_stim_post_sub_pre_peak_cf_1s	2	10.00%
Pow_1-250ms_alphaHz_PostSubPre	1	5.00%
avg_standards_gammato50_post_stim_post_inf_peak_pw_0s	1	5.00%
EvokedPow_251_500ms_Full_spect_PostSubPre	1	5.00%
avg_standards_delta_post_stim_post_sub_pre_peak_pw_0s	1	5.00%
avg_standards_delta_pre_stim_post_inf_peak_cf_0s	1	5.00%
Peak_raw_1_250ms_Full_spect_PostInf	1	5.00%

avg_standards_alpha_post_stim_post_sub_pre_peak_pw_0s	1	5.00%
avg_standards_gammat50_pre_stim_post_inf_peak_pw_1s	1	5.00%
avg_standards_theta_pre_stim_post_inf_peak_bw_0s	1	5.00%
avg_standards_beta_post_stim_post_inf_peak_pw_0s	1	5.00%
Pow_1-500ms_deltaHz_PostInf	1	5.00%
avg_standards_theta_pre_stim_post_sub_pre_peak_bw_0s	1	5.00%
Pow_-250--1ms_deltaHz_PostInf	1	5.00%
avg_standards_beta_post_stim_post_sub_pre_peak_bw_0s	1	5.00%
avg_standards_gammat50_pre_stim_post_sub_pre_peak_pw_0s	1	5.00%
avg_standards_gammat50_post_stim_post_sub_pre_peak_cf_1s	1	5.00%
avg_standards_beta_pre_stim_post_sub_pre_peak_bw_1s	1	5.00%
avg_standards_alpha_post_stim_post_sub_pre_peak_cf_1s	1	5.00%
avg_standards_beta_pre_stim_post_sub_pre_peak_cf_0s	1	5.00%
Pow_-250--1ms_gamma2Hz_PostSubPre	1	5.00%
Pow_-250--1ms_betaHz_PostInf	1	5.00%
avg_standards_gammat50_post_stim_post_sub_pre_peak_pw_0s	1	5.00%
avg_standards_theta_pre_stim_post_sub_pre_peak_pw_0s	1	5.00%
avg_standards_beta_post_stim_post_inf_peak_cf_1s	1	5.00%

Supplementary Table S4.2. selected EEG biomarkers at alpha = 0.1 (all drug comparisons combined)

EEG biomarker	# of selections	% of selections
avg_standards_20to50hz_post_stim_post_sub_pre_slope	20	100.00%
Pow_1-250ms_betaHz_PostSubPre	16	80.00%
avg_standards_delta_pre_stim_post_sub_pre_peak_pw_0s	8	40.00%
EvokedPow_251_500ms_Full_spect_PostInf	6	30.00%
Pow_1-500ms_thetaHz_PostSubPre	6	30.00%
Pow_-250--1ms_betaHz_PostSubPre	4	20.00%
Peak_raw_251_500ms_Full_spect_PostSubPre	3	15.00%
Pow_251-500ms_deltaHz_PostInf	3	15.00%
Pow_251-500ms_thetaHz_PostSubPre	2	10.00%
LZC_Sig_251-500ms_fullspectHz_PostSubPre	2	10.00%
Pow_1-250ms_thetaHz_PostSubPre	2	10.00%
Pow_1-500ms_betaHz_PostSubPre	2	10.00%
avg_standards_20to50hz_post_stim_post_inf_slope	1	5.00%
avg_standards_theta_pre_stim_post_sub_pre_peak_cf_0s	1	5.00%
avg_standards_20to50hz_pre_stim_post_sub_pre_slope	1	5.00%
avg_standards_gammatto50_pre_stim_post_sub_pre_peak_pw_1s	1	5.00%
Peak_raw_251_500ms_Full_spect_PostInf	1	5.00%
SNR_rms_raw_251_500ms_Full_spect_PostInf	1	5.00%
avg_standards_beta_post_stim_post_sub_pre_peak_pw_1s	1	5.00%
avg_standards_beta_post_stim_post_inf_peak_bw_1s	1	5.00%
avg_standards_delta_pre_stim_post_inf_peak_pw_0s	1	5.00%
avg_standards_alpha_post_stim_post_inf_peak_cf_0s	1	5.00%
avg_standards_beta_pre_stim_post_sub_pre_peak_bw_0s	1	5.00%
Pow_251-500ms_deltaHz_PostSubPre	1	5.00%

Supplementary Table S4.3. selected EEG biomarkers at alpha = 0.2 (all drug comparisons combined)

EEG biomarker	# of selections	% of selections
avg_standards_20to50hz_post_stim_post_sub_pre_slope	15	75.00%
Pow_1-250ms_betaHz_PostSubPre	6	30.00%
Pow_1-500ms_thetaHz_PostSubPre	6	30.00%
avg_standards_delta_pre_stim_post_sub_pre_peak_pw_0s	5	25.00%
EvokedPow_251_500ms_Full_spect_PostInf	3	15.00%
Pow_-250--1ms_betaHz_PostSubPre	3	15.00%
Pow_1-500ms_betaHz_PostSubPre	2	10.00%
Peak_raw_251_500ms_Full_spect_PostSubPre	2	10.00%
Pow_1-500ms_deltaHz_PostInf	1	5.00%
avg_standards_20to50hz_post_stim_post_inf_slope	1	5.00%
Peak_raw_251_500ms_Full_spect_PostInf	1	5.00%
Pow_251-500ms_thetaHz_PostSubPre	1	5.00%
Pow_251-500ms_thetaHz_PostInf	1	5.00%

Supplementary Table S4.4. selected EEG biomarkers at alpha = 0.5 (all drug comparisons combined)

EEG biomarker	# of selections	% of selections
avg_standards_20to50hz_post_stim_post_sub_pre_slope	16	80.00%
Pow_1-500ms_thetaHz_PostSubPre	2	10.00%
Pow_251-500ms_thetaHz_PostSubPre	1	5.00%
Pow_-250--1ms_betaHz_PostSubPre	1	5.00%
Pow_1-250ms_betaHz_PostSubPre	1	5.00%
avg_standards_20to50hz_pre_stim_post_sub_pre_slope	1	5.00%

Supplementary Table S5. selected EEG biomarkers (all drug comparisons and alpha values combined)

EEG biomarker	# of selections	% of selections
avg_standards_20to50hz_post_stim_post_sub_pre_slope	71	88.75%
Pow_1-250ms_betaHz_PostSubPre	43	53.75%
avg_standards_delta_pre_stim_post_sub_pre_peak_pw_0s	27	33.75%
Pow_1-500ms_thetaHz_PostSubPre	23	28.75%
Pow_-250--1ms_betaHz_PostSubPre	20	25.00%
Pow_1-500ms_betaHz_PostSubPre	17	21.25%
EvokedPow_251_500ms_Full_spect_PostInf	16	20.00%
avg_standards_20to50hz_pre_stim_post_sub_pre_slope	9	11.25%
Pow_251-500ms_thetaHz_PostSubPre	9	11.25%
avg_standards_20to50hz_post_stim_post_inf_slope	9	11.25%
LZC_Sig_251-500ms_fullspectHz_PostSubPre	8	10.00%
Peak_raw_251_500ms_Full_spect_PostSubPre	7	8.75%
Pow_251-500ms_deltaHz_PostInf	7	8.75%
Pow_1-500ms_alphaHz_PostSubPre	6	7.50%
Peak_raw_251_500ms_Full_spect_PostInf	6	7.50%
SNR_rms_raw_251_500ms_Full_spect_PostInf	6	7.50%
avg_standards_20to50hz_pre_stim_post_inf_slope	4	5.00%
Pow_251-500ms_thetaHz_PostInf	4	5.00%
Pow_251-500ms_deltaHz_PostSubPre	4	5.00%
Pow_1-250ms_thetaHz_PostSubPre	4	5.00%
avg_standards_delta_post_stim_post_inf_peak_pw_1s	4	5.00%
avg_standards_beta_post_stim_post_sub_pre_peak_pw_1s	4	5.00%
avg_standards_alpha_post_stim_post_sub_pre_peak_cf_0s	3	3.75%
avg_standards_alpha_post_stim_post_sub_pre_peak_pw_1s	3	3.75%
avg_standards_alpha_post_stim_post_inf_peak_cf_0s	3	3.75%
avg_standards_beta_pre_stim_post_sub_pre_peak_bw_0s	3	3.75%
avg_standards_beta_post_stim_post_inf_peak_bw_1s	3	3.75%
avg_standards_delta_pre_stim_post_inf_peak_pw_0s	3	3.75%
Pow_-250--1ms_alphaHz_PostSubPre	3	3.75%
LZC_Sig_251-500ms_fullspectHz_PostInf	3	3.75%
avg_standards_theta_pre_stim_post_sub_pre_peak_cf_0s	3	3.75%
Pow_1-500ms_deltaHz_PostInf	2	2.50%
SNR_rms_raw_251_500ms_Full_spect_PostSubPre	2	2.50%
Pow_1-250ms_thetaHz_PostInf	2	2.50%
avg_standards_delta_pre_stim_post_sub_pre_peak_cf_0s	2	2.50%
Pow_1-250ms_betaHz_PostInf	2	2.50%
avg_standards_beta_pre_stim_post_inf_peak_cf_0s	2	2.50%
Pow_251-500ms_betaHz_PostSubPre	2	2.50%
Pow_-250--1ms_thetaHz_PostSubPre	2	2.50%
avg_standards_delta_post_stim_post_sub_pre_peak_cf_1s	2	2.50%
avg_standards_gammato50_pre_stim_post_inf_peak_pw_1s	1	1.25%
avg_standards_beta_post_stim_post_inf_peak_cf_1s	1	1.25%
avg_standards_beta_post_stim_post_inf_peak_pw_0s	1	1.25%
avg_standards_theta_pre_stim_post_inf_peak_bw_0s	1	1.25%
avg_standards_delta_pre_stim_post_inf_peak_cf_0s	1	1.25%
avg_standards_alpha_post_stim_post_sub_pre_peak_pw_0s	1	1.25%

Peak_raw_1_250ms_Full_spect_PostInf	1	1.25%
Pow_1-250ms_alphaHz_PostSubPre	1	1.25%
avg_standards_delta_post_stim_post_sub_pre_peak_pw_0s	1	1.25%
EvokedPow_251_500ms_Full_spect_PostSubPre	1	1.25%
avg_standards_gammat50_post_stim_post_inf_peak_pw_0s	1	1.25%
avg_standards_beta_post_stim_post_sub_pre_peak_bw_0s	1	1.25%
Pow_-250--1ms_deltaHz_PostInf	1	1.25%
avg_standards_gammat50_pre_stim_post_sub_pre_peak_pw_0s	1	1.25%
avg_standards_theta_pre_stim_post_sub_pre_peak_bw_0s	1	1.25%
avg_standards_gammat50_post_stim_post_sub_pre_peak_cf_1s	1	1.25%
avg_standards_beta_pre_stim_post_sub_pre_peak_bw_1s	1	1.25%
avg_standards_alpha_post_stim_post_sub_pre_peak_cf_1s	1	1.25%
avg_standards_beta_pre_stim_post_sub_pre_peak_cf_0s	1	1.25%
Pow_-250--1ms_gamma2Hz_PostSubPre	1	1.25%
Pow_-250--1ms_betaHz_PostInf	1	1.25%
avg_standards_gammat50_post_stim_post_sub_pre_peak_pw_0s	1	1.25%
avg_standards_theta_pre_stim_post_sub_pre_peak_pw_0s	1	1.25%
avg_standards_gammat50_pre_stim_post_sub_pre_peak_pw_1s	1	1.25%

Supplementary Tables S6-S9: selected EEG biomarker categories

S6. Supplementary Tables: selected EEG biomarker categories for each drug comparison (all alpha values combined)

Supplementary Table S6.1. Selected EEG biomarker categories for the ketamine, thiopental, and placebo comparison (all alpha values combined)

Biomarker category	# of selections	% of selections
PSD exponent (aperiodic)	20	100.00%
Beta power (total)	13	65.00%
Theta power (total)	12	60.00%
Delta power 1 st peak (periodic)	10	50.00%
P300 evoked power	9	45.00%
P300 peak amplitude	2	10.00%
Alpha power (total)	2	10.00%
Theta power 1 st peak (periodic)	1	5.00%
Delta power (total)	1	5.00%
Beta power 2 nd peak (periodic)	1	5.00%
Alpha center frequency 1 st peak (periodic)	1	5.00%
Gamma 2 power (total)	1	5.00%
Alpha power 2 nd peak (periodic)	1	5.00%
Lempel-Ziv complexity	1	5.00%
Beta center frequency 1 st peak (periodic)	1	5.00%
Gamma power 1 st peak (periodic)	1	5.00%
P300 signal-to-noise ratio	1	5.00%

Supplementary Table S6.2. Selected EEG biomarker categories for the ketamine and placebo comparison (all alpha values combined)

Biomarker category	# of selections	% of selections
PSD exponent (aperiodic)	19	95.00%
Beta power (total)	13	65.00%
Delta power 1 st peak (periodic)	12	60.00%
P300 peak amplitude	7	35.00%
Delta power (total)	7	35.00%
Delta power 2 nd peak (periodic)	4	20.00%
Alpha power (total)	4	20.00%
Beta bandwidth 2 nd peak (periodic)	4	20.00%
Alpha center frequency 1 st peak (periodic)	4	20.00%
Beta bandwidth 1 st peak (periodic)	3	15.00%
Beta power 2 nd peak (periodic)	3	15.00%
Alpha power 2 nd peak (periodic)	2	10.00%
Gamma power 1 st peak (periodic)	2	10.00%
Delta center frequency 2 nd peak (periodic)	2	10.00%
P300 evoked power	2	10.00%
Beta center frequency 1 st peak (periodic)	2	10.00%
Gamma power 2 nd peak (periodic)	1	5.00%
Alpha center frequency 2 nd peak (periodic)	1	5.00%
Theta power (total)	1	5.00%
Delta center frequency 1 st (periodic)	1	5.00%
Gamma center frequency 2 nd (periodic)	1	5.00%
Theta bandwidth 1 st peak (periodic)	1	5.00%

Supplementary Table S6.3. Selected EEG biomarker categories for the thiopental and placebo comparison (all alpha values combined)

Biomarker category	# of selections	% of selections
Theta power (total)	18	90.00%
Beta power (total)	15	75.00%
PSD exponent (aperiodic)	13	65.00%
Lempel-Ziv complexity	7	35.00%
Delta power 1 st peak (periodic)	6	30.00%
P300 evoked power	6	30.00%
P300 signal-to-noise ratio	5	25.00%
P300 peak amplitude	4	20.00%
Delta power (total)	3	15.00%
Alpha power (total)	3	15.00%
Theta center frequency 1 st peak (periodic)	3	15.00%
Delta center frequency 1 st peak (periodic)	2	10.00%
N100 peak amplitude	1	5.00%
Theta bandwidth 1 st peak (periodic)	1	5.00%
Beta center frequency 2 nd peak (periodic)	1	5.00%
Beta power 1 st peak (periodic)	1	5.00%
Alpha power 1 st peak (periodic)	1	5.00%
Gamma power 2 nd peak (periodic)	1	5.00%

Supplementary Table S6.4. Selected EEG biomarker categories for the ketamine and thiopental comparison (all alpha values combined)

Biomarker category	# of selections	% of selections
PSD exponent (aperiodic)	20	100.00%
Beta power (total)	10	50.00%
Theta power (total)	1	5.00%

S7. Supplementary Tables: selected EEG biomarker categories for each drug comparison across alpha values

Supplementary Table S7.1. Selected EEG biomarker categories for the ketamine, thiopental, and placebo comparison at alpha = 0.01

Biomarker category	# of selections	% of selections
Beta power (total)	5	100.00%
Theta power (total)	5	100.00%
PSD exponent (aperiodic)	5	100.00%
P300 evoked power	4	80.00%
Delta power 1 st peak (periodic)	4	80.00%
Alpha power (total)	2	40.00%
Gamma power 1 st peak (periodic)	1	20.00%
Gamma 2 power (total)	1	20.00%
Beta center frequency 1 st peak (periodic)	1	20.00%
P300 peak amplitude	1	20.00%
Lempel-Ziv complexity	1	20.00%
Alpha power 2 nd peak (periodic)	1	20.00%
Theta power 1 st peak (periodic)	1	20.00%
Alpha center frequency 1 st peak (periodic)	1	20.00%
Beta power 2 nd peak (periodic)	1	20.00%

Supplementary Table S7.2. Selected EEG biomarker categories for the ketamine, thiopental, and placebo comparison at alpha = 0.1

Biomarker category	# of selections	% of selections
PSD exponent (aperiodic)	5	100.00%
Beta power (total)	5	100.00%
Theta power (total)	5	100.00%
Delta power 1 st peak (periodic)	4	80.00%
P300 evoked power	3	60.00%
P300 peak amplitude	1	20.00%
Delta power (total)	1	20.00%
P300 signal-to-noise ratio	1	20.00%

Supplementary Table S7.3. Selected EEG biomarker categories for the ketamine, thiopental, and placebo comparison at alpha = 0.2

Biomarker category	# of selections	% of selections
PSD exponent (aperiodic)	5	100.00%
Beta power (total)	3	60.00%
Theta power (total)	2	40.00%
P300 evoked power	2	40.00%
Delta power 1 st peak (periodic)	2	40.00%

Supplementary Table S7.4. Selected EEG biomarker categories for the ketamine, thiopental, and placebo comparison at alpha = 0.5

Biomarker category	# of selections	% of selections
PSD exponent (aperiodic)	5	100.00%

Supplementary Table S7.5. Selected EEG biomarker categories for the ketamine and placebo comparison at alpha = 0.01

Biomarker category	# of selections	% of selections
Beta power (total)	5	100.00%
Delta power 1 st peak (periodic)	5	100.00%
PSD exponent (aperiodic)	5	100.00%
Delta power 2 nd peak (periodic)	4	80.00%
Alpha power (total)	4	80.00%
Delta power (total)	4	80.00%
Alpha center frequency 1 st peak (periodic)	3	60.00%
Beta bandwidth 2 nd peak (periodic)	3	60.00%
P300 peak amplitude	3	60.00%
Beta bandwidth 1 st peak (periodic)	2	40.00%
P300 evoked power	2	40.00%
Gamma power 1 st peak (periodic)	2	40.00%
Alpha power 2 nd peak (periodic)	2	40.00%
Beta center frequency 1 st peak (periodic)	2	40.00%
Delta center frequency 2 nd peak (periodic)	2	40.00%
Beta power 2 nd peak (periodic)	2	40.00%
Gamma power 2 nd peak (periodic)	1	20.00%
Alpha center frequency 2 nd peak (periodic)	1	20.00%
Theta power (total)	1	20.00%
Delta center frequency 1 st peak (periodic)	1	20.00%
Gamma center frequency 2 nd peak (periodic)	1	20.00%
Theta bandwidth 1 st peak (periodic)	1	20.00%

Supplementary Table S7.6 selected EEG biomarker categories for the ketamine and placebo comparison at alpha = 0.1

Biomarker category	# of selections	% of selections
PSD exponent (aperiodic)	5	100.00%
Beta power (total)	4	80.00%
Delta power 1 st peak (periodic)	4	80.00%
P300 peak amplitude	2	40.00%
Delta power (total)	2	40.00%
Beta power 2 nd peak (periodic)	1	20.00%
Alpha center frequency 1 st peak (periodic)	1	20.00%
Beta bandwidth 1 st peak (periodic)	1	20.00%
Beta bandwidth 2 nd peak (periodic)	1	20.00%

Supplementary Table S7.7. Selected EEG biomarker categories for the ketamine and placebo comparison at alpha = 0.2

Biomarker category	# of selections	% of selections
Beta power (total)	4	80.00%
PSD exponent (aperiodic)	4	80.00%
Delta power 1 st peak (periodic)	3	60.00%
P300 peak amplitude	2	40.00%
Delta power (total)	1	20.00%

Supplementary Table S7.8. Selected EEG biomarker categories for the ketamine and placebo comparison at alpha = 0.5

Biomarker category	# of selections	% of selections
PSD exponent (aperiodic)	5	100.00%

Supplementary Table S7.9. Selected EEG biomarker categories for the thiopental and placebo comparison at alpha = 0.01

Biomarker category	# of selections	% of selections
Lempel-Ziv complexity	5	100.00%
P300 signal-to-noise ratio	5	100.00%
Delta power 1 st peak (periodic)	5	100.00%
Theta power (total)	5	100.00%
PSD exponent (aperiodic)	5	100.00%
Beta power (total)	5	100.00%
Alpha power (total)	3	60.00%
P300 peak amplitude	2	40.00%
P300 evoked power	2	40.00%
Delta center frequency 1 st peak (periodic)	2	40.00%
Theta center frequency 1 st peak (periodic)	2	40.00%
Delta power (total)	2	40.00%
N100 peak amplitude	1	20.00%
Theta bandwidth 1 st peak (periodic)	1	20.00%
Beta center frequency 2 nd peak (periodic)	1	20.00%
Beta power 1 st peak (periodic)	1	20.00%
Alpha power 1 st peak (periodic)	1	20.00%

Supplementary Table S7.10. Selected EEG biomarker categories for the thiopental and placebo comparison at alpha = 0.1

Biomarker category	# of selections	% of selections
PSD exponent (aperiodic)	5	100.00%
Theta power (total)	5	100.00%
Beta power (total)	4	80.00%
P300 evoked power	3	60.00%
Lempel-Ziv complexity	2	40.00%
Delta power 1 st peak (periodic)	1	20.00%
Gamma power 2 nd peak (periodic)	1	20.00%
Theta center frequency 1 st peak (periodic)	1	20.00%
Delta power (total)	1	20.00%
P300 peak amplitude	1	20.00%

Supplementary Table S7.11. Selected EEG biomarker categories for the thiopental and placebo comparison at alpha = 0.2

Biomarker category	# of selections	% of selections
Theta power (total)	5	100.00%
Beta power (total)	4	80.00%
PSD exponent (aperiodic)	1	20.00%
P300 evoked power	1	20.00%
P300 peak amplitude	1	20.00%

Supplementary Table S7.12. Selected EEG biomarker categories for the thiopental and placebo comparison at alpha = 0.5

Biomarker category	# of selections	% of selections
Theta power (total)	3	60.00%
Beta power (total)	2	40.00%
PSD exponent (aperiodic)	2	40.00%

Supplementary Table S7.13. Selected EEG biomarker categories for the ketamine and thiopental comparison at alpha = 0.01

Biomarker category	# of selections	% of selections
PSD exponent (aperiodic)	5	100.00%
Beta power (total)	5	100.00%
Theta power (total)	1	20.00%

Supplementary Table S7.14. Selected EEG biomarker categories for the ketamine and thiopental comparison at alpha = 0.1

Biomarker category	# of selections	% of selections
PSD exponent (aperiodic)	5	100.00%
Beta power (total)	5	100.00%

Supplementary Table S7.15. Selected EEG biomarker categories for the ketamine and thiopental comparison at alpha = 0.2

Biomarker category	# of selections	% of selections
PSD exponent (aperiodic)	5	100.00%

Supplementary Table S7.16. Selected EEG biomarker categories for the ketamine and thiopental comparison at alpha = 0.5

Biomarker category	# of selections	% of selections
PSD exponent (aperiodic)	5	100.00%

S8. Supplementary Tables: selected EEG biomarker categories across alpha values (all drug comparisons combined)

Supplementary Table s8.1. Selected EEG biomarker categories at alpha = 0.01 (all drug comparisons combined)

Biomarker category	# of selections	% of selections
Beta power (total)	20	100.00%
PSD exponent (aperiodic)	20	100.00%
Delta power 1 st peak (periodic)	14	70.00%
Theta power (total)	12	60.00%
Alpha power (total)	9	45.00%
P300 evoked power	8	40.00%
P300 peak amplitude	7	35.00%
Lempel-Ziv complexity	6	30.00%
Delta power (total)	6	30.00%
P300 signal-to-noise ratio	5	25.00%
Alpha center frequency 1 st (periodic)	4	20.00%
Delta power 2 nd peak (periodic)	4	20.00%
Delta center frequency 1 st peak (periodic)	3	15.00%
Beta bandwidth 2 nd peak (periodic)	3	15.00%
Beta power 2 nd peak (periodic)	3	15.00%
Alpha power 2 nd peak (periodic)	3	15.00%
Beta center frequency 1 st peak (periodic)	3	15.00%
Gamma power 1 st peak (periodic)	3	15.00%
Beta bandwidth 1 st peak (periodic)	2	10.00%
Delta center frequency 2 nd peak (periodic)	2	10.00%
Theta bandwidth 1 st peak (periodic)	2	10.00%
Theta center frequency 1 st peak (periodic)	2	10.00%
N100 peak amplitude	1	5.00%
Gamma 2 power (total)	1	5.00%
Theta power 1 st peak (periodic)	1	5.00%
Gamma power 2 nd peak (periodic)	1	5.00%
Alpha center frequency 2 nd peak (periodic)	1	5.00%
Gamma center frequency 2 nd peak (periodic)	1	5.00%
Beta center frequency 2 nd peak (periodic)	1	5.00%
Beta power 1 st peak (periodic)	1	5.00%
Alpha power 1 st peak (periodic)	1	5.00%

Supplementary Table s8.2. Selected EEG biomarker categories at alpha = 0.1 (all drug comparisons combined)

Biomarker category	# of selections	% of selections
PSD exponent (aperiodic)	20	100.00%
Beta power (total)	18	90.00%
Theta power (total)	10	50.00%
Delta power (periodic)	9	45.00%
P300 evoked power	6	30.00%
P300 peak amplitude	4	20.00%
Delta power (total)	4	20.00%
Lempel-Ziv complexity	2	10.00%
P300 signal-to-noise ratio	1	5.00%
Beta power 2 nd peak (periodic)	1	5.00%
Alpha center frequency 1 st peak (periodic)	1	5.00%
Beta bandwidth 1 st peak (periodic)	1	5.00%
Beta bandwidth 2 nd peak (periodic)	1	5.00%
Gamma power 2 nd peak (periodic)	1	5.00%
Theta center frequency 1 st peak (periodic)	1	5.00%

Supplementary Table s8.3. Selected EEG biomarker categories at alpha = 0.2 (all drug comparisons combined)

Biomarker category	# of selections	% of selections
PSD exponent (aperiodic)	15	75.00%
Beta power (total)	11	55.00%
Theta power (total)	7	35.00%
Delta power 1 st peak (periodic)	5	25.00%
P300 evoked power	3	15.00%
P300 peak amplitude	3	15.00%
Delta power (total)	1	5.00%

Supplementary Table s8.4. Selected EEG biomarker categories at alpha = 0.5 (all drug comparisons combined)

Biomarker category	# of selections	% of selections
PSD exponent (aperiodic)	17	85.00%
Theta power (total)	3	15.00%
Beta power (total)	2	10.00%

Supplementary Table s9. Selected EEG biomarker categories (all drug comparisons and alpha values combined)

Biomarker category	# of selections	% of selections
PSD exponent (aperiodic)	72	90.00%
Beta power (total)	51	63.75%
Theta power (total)	32	40.00%
Delta power 1 st peak (periodic)	28	35.00%
P300 evoked power	17	21.25%
P300 peak amplitude	13	17.50%
Delta power (total)	11	13.75%
Alpha power (total)	9	11.25%
Lempel-Ziv complexity	8	10.00%
P300 signal-to-noise ratio	6	7.50%
Alpha center frequency 1 st peak (periodic)	5	6.25%
Beta power 2 nd peak (periodic)	4	5.00%
Delta power 2 nd peak (periodic)	4	5.00%
Beta bandwidth 2 nd peak (periodic)	4	5.00%
Theta center frequency 1 st peak (periodic)	3	3.75%
Beta bandwidth 1 st peak (periodic)	3	3.75%
Delta center frequency 1 st peak (periodic)	3	3.75%
Beta center frequency 1 st peak (periodic)	3	3.75%
Alpha power 2 nd peak (periodic)	3	3.75%
Gamma power 1 st peak (periodic)	3	3.75%
Gamma power 2 nd peak (periodic)	2	2.50%
Delta center frequency 2 nd peak (periodic)	2	2.50%
Theta bandwidth 1 st peak (periodic)	2	2.50%
N100 peak amplitude	1	1.25%
Gamma 2 power (total)	1	1.25%
Theta power 1 st peak (periodic)	1	1.25%
Alpha center frequency 2 nd peak (periodic)	1	1.25%
Gamma center frequency 2 nd peak (periodic)	1	1.25%
Beta center frequency 2 nd peak (periodic)	1	1.25%
Beta power 1 st peak (periodic)	1	1.25%
Alpha power 1 st peak (periodic)	1	1.25%

Supplementary Tables S10: Classification metrics

Each table reports the mean and standard deviation (in parentheses) of the classification metrics for each drug comparison. The metrics were calculated across the test splits of a five-fold cross-validation procedure independently for each value of the selection size restriction parameter alpha. The second column shows the mean number of selected EEG biomarkers and standard deviation (in parentheses) across the training splits. Accuracy refers to the percentage of correct drug classifications out of the total number of cases; precision refers to the percentage of correct classifications for a given drug out of all the cases predicted as that drug; and sensitivity refers to the percentage of correct classifications for a given drug out of all cases that received that drug.

Supplementary Table S10.1. Metrics for the 3-class placebo, ketamine, and thiopental classification

Alpha	# selected biomarkers	Accuracy	Precision			Sensitivity		
			Placebo	Ketamine	Thiopental	Placebo	Ketamine	Thiopental
All features	187.00 (0.00)	90.50 (2.90)	88.51 (9.92)	91.62 (5.94)	100.00 (0.00)	91.56 (5.18)	92.46 (5.32)	89.06 (7.80)
0.01	9.80 (3.06)	89.01 (2.01)	83.93 (8.73)	93.09 (6.30)	97.13 (3.53)	85.98 (7.59)	85.81 (6.53)	95.38 (6.15)
0.1	5.40 (1.02)	88.09 (3.91)	86.13 (5.89)	92.50 (7.29)	89.60 (5.97)	83.20 (9.33)	90.00 (5.96)	95.49 (3.68)
0.2	2.80 (0.40)	78.17 (5.86)	70.03 (6.27)	83.40 (10.64)	86.51 (8.36)	71.50 (13.61)	83.16 (7.57)	80.74 (7.19)
0.5	1.00 (0.00)	67.85 (11.18)	61.22 (15.45)	80.31 (12.75)	65.70 (14.98)	58.32 (15.93)	77.21 (13.62)	67.70 (14.27)

Supplementary Table S10.2. Metrics for the 2-class placebo and ketamine classification

Alpha	# selected biomarkers	Accuracy	Precision		Sensitivity	
			Placebo	Ketamine	Placebo	Ketamine
All features	187.00 (0.00)	94.05 (2.27)	90.90 (3.83)	92.39 (4.48)	91.83 (4.78)	92.15 (2.34)
0.01	15.40 (3.44)	90.69 (4.60)	91.46 (2.96)	90.18 (6.87)	85.08 (10.83)	90.90 (4.84)
0.1	4.80 (1.17)	87.13 (3.72)	87.50 (9.45)	87.04 (3.72)	86.33 (9.09)	85.38 (5.43)
0.2	3.00 (0.63)	83.16 (5.69)	82.45 (4.17)	83.22 (12.29)	80.83 (13.78)	82.71 (5.77)
0.5	1.00 (0.00)	77.95 (12.90)	78.81 (14.95)	79.38 (13.02)	77.50 (16.21)	79.07 (15.70)

Supplementary Table S10.3. Metrics for the 2-class placebo and thiopental classification

Alpha	# selected biomarkers	Accuracy	Precision		Sensitivity	
			Placebo	Thiopental	Placebo	Thiopental
All features	187.00 (0.00)	92.49 (3.37)	93.39 (8.12)	97.33 (5.33)	97.03 (3.64)	88.98 (8.21)
0.01	16.00 (1.90)	94.80 (3.90)	91.09 (4.41)	94.85 (4.35)	97.13 (3.53)	88.16 (4.71)
0.1	5.00 (1.26)	90.95 (2.24)	89.57 (4.55)	90.13 (8.26)	94.45 (2.82)	91.98 (5.33)
0.2	2.60 (0.49)	84.93 (4.31)	86.14 (4.25)	83.30 (4.86)	85.94 (5.36)	82.83 (7.35)
0.5	1.40 (0.49)	70.71 (9.48)	75.19 (9.53)	65.87 (9.98)	69.62 (10.36)	71.80 (16.90)

Supplementary Table S10.4. Metrics for the 2-class ketamine and thiopental classification

Alpha	# selected biomarkers	Accuracy	Precision		Sensitivity	
			Ketamine	Thiopental	Ketamine	Thiopental
All features	178.00 (0.00)	97.00 (1.50)	94.96 (4.71)	98.57 (2.86)	98.57 (2.86)	95.03 (4.17)
0.01	3.20 (1.17)	97.08 (1.48)	97.49 (3.08)	96.85 (3.94)	98.57 (2.86)	98.57 (2.86)
0.1	2.00 (0.00)	98.62 (1.69)	100.00 (0.00)	98.67 (2.67)	98.57 (2.86)	100.00 (0.00)
0.2	1.00 (0.00)	94.91 (2.82)	94.82 (4.96)	94.83 (4.26)	96.06 (3.24)	94.18 (5.38)
0.5	1.00 (0.00)	94.91 (2.82)	94.82 (4.96)	94.83 (4.26)	96.06 (3.24)	94.18 (5.38)