**CL5D COMPLETE SUPPLEMENTARY ANALYSIS**

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**Loaded 20 guide sequences**

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**🔬 COMPARATIVE ANALYSIS: ZNF423 vs EMX1\_site4**

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**📊 Quantitative Metrics:**

**Metric ZNF423 EMX1\_site4 Difference**

**Convergence Ratio (ρ) 0.826 0.763943 -0.062057**

**Micro Events 0.174 0.152501 -0.021499**

**Conjugate Balance (C) 0.029 0.270676 0.241676**

**System Status BALANCED BALANCED N/A**

**System Dynamics ADAPTIVE OSCILLATING N/A**

**Status BALANCED BALANCED**

**Dynamics ADAPTIVE OSCILLATING**

**🎯 KEY INSIGHTS:**

**✗ EMX1 has LOWER convergence than ZNF423 off-target**

**✗ EMX1 is LESS balanced than ZNF423**

**📊 Figure saved: CL5D\_Supplementary\_Analysis.png**

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**FINAL COMPREHENSIVE REPORT**

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**📋 GUIDE: EMX1\_site4**

**Analysis Date: 2025-12-04 06:37:35**

**Total Binding Sites: 20**

**On-target: 1**

**Off-targets: 19**

**🧬 AGENT SCORES:**

**Temporal (At): 0.274**

**Behavioural (Ab): 0.468**

**Harmonic (H): 0.019**

**🌀 PHASE I RESULTS:**

**Convergence Ratio (ρ): 0.764**

**Converged Regions: 30,557/40,000**

**Micro Events: 0.153 (15.3%)**

**Gate Status: PASS ✓**

**♾️ PHASE II RESULTS:**

**Mean Evolution (μE): 0.000117**

**Evolution Strength (Es): 0.271**

**Decay Progress (Dp): 0.000**

**🎯 CONJUGATE BALANCE (C): 0.271**

**System Status: BALANCED**

**System State: ACTIVE**

**System Dynamics: OSCILLATING**

**Evolution Sites: 11,107 (27.8%)**

**Final Cn: 0.000117**

**Benchmark Reached: NO ✗**

**🏥 CLINICAL ASSESSMENT:**

**Status: APPROVED FOR USE ✓**

**Grade: A (Phase I Complete)**

**Recommendation: SUITABLE FOR EXPERIMENTAL USE**

**Fidelity: HIGH (Balanced system)**

**⚠️ OFF-TARGET RISK PROFILE:**

**HIGH\_E\_LOW\_P sites: 14 (highest risk)**

**Top 3 Risk Sites:**

**ENSG00000235605|ENSG00000236358 (chr1): Score=120, Mismatch=5**

**RPS15P4 (chr2): Score=106, Mismatch=5**

**CKAP4 (chr12): Score=100, Mismatch=4**

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**📄 JSON export saved: CL5D\_EMX1\_site4\_Analysis\_20251204\_063738.json**

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**✅ ANALYSIS COMPLETE**

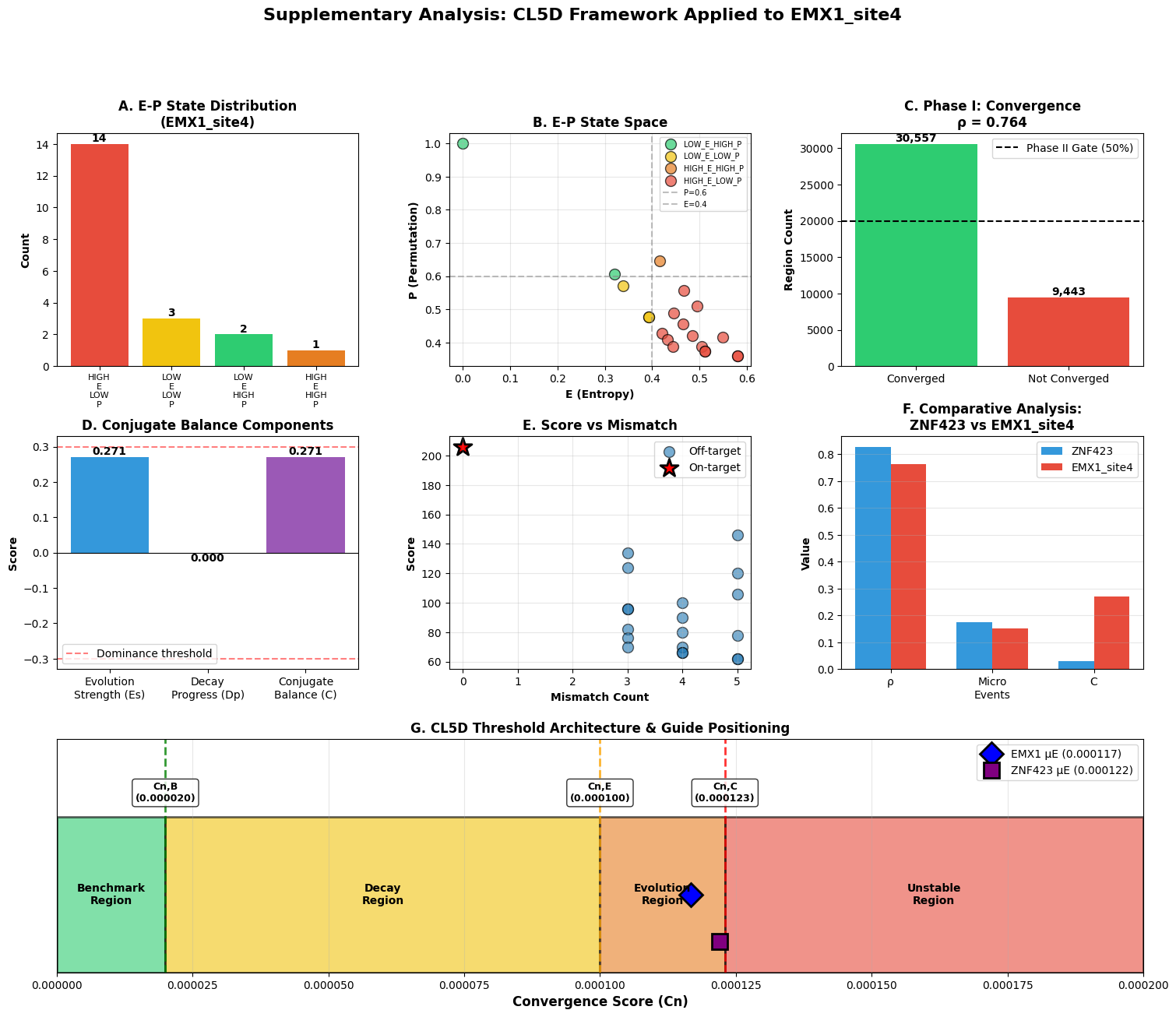
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**Files generated:**

**1. CL5D\_Supplementary\_Analysis.png**

**2. CL5D\_EMX1\_site4\_Analysis\_\*.json**

**See supplementary figures for detailed visual analysis.**

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