

Supplementary Figure S1: Clustal alignment of CSP amino acid haplotypes.

Deduced protein sequence of sequenced region including Th2R and Th3R epitopes, showing 29 different sequences observed among 81 ADI samples analysed, compared to 3D7 (vaccine antigen) sequence. Majority residues are white, minority substitutions are black.

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3D7CSP  NANANSAVKNNNNNEEPSDKHIEKYLNKIQNSLSTEWSPCSVTCGNGIQVRIKPGSANKPKDELYANDIEKKICKMEKCSSV
0001  NANANNAEKNNNNNEEPSDQHIEKYLKIIQNSLSTEWSPCSVTCGNGIQVRIKPGSANKPKDQLDYANDIEKKICKMEKCSSV
0002  NANANNAVKNNNNNEEPSDQHIEKYLKIIQNSLSTEWSPCSVTCGNGIQVRIKPGSANKPKDQLDYANDIEKKICKMEKCSSV
0003  NANANNAVKNNNNNEEPSDQHIEKYLQKIQNSLSTEWSPCSVTCGNGIQVRIKPGSANKPKDQINYENDIEKKICKMEKCSSV
0004  NANANNAVKNNNNNEEPSDQHIEQYLNRIQNSLSTEWSPCSVTCGNGIQVRIKPGSANKPKDQINYENDIEKKICKMEKCSSV
0005  NAKANNAVKNNNNNEEPSDKHIEQYLKTIQNSLSTEWSPCSVTCGNGIQVRIKPGSANKPKDQLDYENDIEKKICKMEKCSSV
0006  NANANNAVKNNNNNEEPSDKHIEQYLKTIQNSLSTEWSPCSVTCGNGIQVRIKPGSANKPKDQLDYENDIEKKICKMEKCSSV
0007  NANANNAVKNNNNNEEPSDQHIEQYLKTIQNSLSTEWSPCSVTCGNGIQVRIKPGSANKPKDQLDYENDIEKKICKMEKCSSV
0008  NANANNAVKNNNNNEEPSDKHIEEYLKIKNSISTEWSPCSVTCGNGIQVRIKPGSANKPKDELNYENDIEKKICKMEKCSSV
0009  NANANNAVKNNNNNEEPSDKHIEQYLKIKNSISTEWSPCSVTCGNGIQVRIKPGSANKPKDELYENDIEKKICKMEKCSSV
0010  NANANNAVKNNNNNEEPSDKHIEQYLKIQNSLSTEWSPCSVTCGNGIQVRIKPGSAGKSKDELYENDIEKKICKMEKCSSV
0011  NANANNAVKNNNNNEEPSDKHIEKYLKEIQNSLSTEWSPCSVTCGNGIQVRIKPGSAGKPKNELYENDIEKKICKMEKCSSV
0012  NANANNAVKNNNNNEEPSDQHIEKYLKIQNSLSTEWSPCSVTCGNGIQVRIKPGSANKPKDQLDYANDIEKKICKMEKCSSV
0014  NANANNAVKNNNNNEEPSDQHIEKYLKIQNSLSTEWSPCSVTCGNGIQVRIKPGSANKPKDQLDYENDIEKKICKMEKCSSV
0015  NANANNAVKNNNNNEEPSDKHIEKYLKIIQNSLSTEWSPCSVTCGNGIQVRIKPGSAGKPKEELNYENDIEKKICKMEKCSSV
0016  NANANNAVKNNNNNEEPSDKHIEQYLKTIKNSLSTEWSPCSVTCGNGIQVRIKPGSANKPKDQLDYENDIEKKICKMEKCSSV
0017  NANANNAVKNNNNNEEPSDQHIEQYLKTIKNSLSTEWSPCSVTCGNGIQVRIKPGSANKPKDQLDYANDIEKKICKMEKCSSV
0018  NANANNAVKNNNNNEEPSDQHIEKYLKIIQNSLSTEWSPCSVTCGNGIQVRIKPGSANKPKDQLDYANDIEKKICKMEKCSSV
0019  NANANNAVKNNNNNEEPSDQHIEKYLQKIQNSLSTEWSPCSVTCGNGIQVRIKPGSANKPKDQLDYENDIEKKICKMEKCSSV
0020  NANANNAVKNNNNNEEPSDQHIEKYLNKIKNSLSTEWSPCSVTCGNGIQVRIKPGSANKPKDQLDYANDIEKKICKMEKCSSV
0021  NANANNAVKNNNNNEEPSDQHIEKYLKIIQNSLSTEWSPCSVTCGNGIQVRIKPGSANKPKDQLDYANDIEKKICKMEKCSSV
0022  NANANNAVKNNNNNEEPSDKHIEQYLKIQNSLSTEWSPCSVTCGNGIQVRIKPGSANKPKDELYENDIEKKICKMEKCSSV
0023  NANANNAVKNNNNNEEPSDKHIEQYLKIKNSISTEWSPCSVTCGNGIQVRIKPGSANKPKDELYENDIEKKICKMEKCSSV
0024  NANANNAVKNNNNNEEPSDKHIEQYLKIQNSLSTEWSPCSVTCGNGIQVRIKPGSAGKSKDELYENDIEKKICKMEKCSSV
0025  NANANNAVKNNNNNEEPSDKHIEEYLKIKNSISTEWSPCSVTCGNGIQVRIKPGSANKPKDELNYENDIEKKICKMEKCSSV
0026  NANANNAVKNNNNNEEPSDQHIEKYLQKIQNSLSTEWSPCSVTCGNGIQVRIKPGSANKPKDQINYENDIEKKICKMEKCSSV
0027  NANANNAVKNNNNNEEPSDQHIEQYLKRIQNSLSTEWSPCSVTCGNGIQVRIKPGSANKPKDQLDYANDIEKKICKMEKCSSV
0028  NAKANNAVKNNNNNEEPSDKHIEQYLKTIQNSLSTEWSPCSVTCGNGIQVRIKPGSANKPKDQLDYENDIEKKICKMEKCSSV
0029  NANANNAVKNNNNNEEPSDKHIEKYLKIIQNSLSTEWSPCSVTCGNGIQVRIKPGSAGKPKEELNYENDIEKKICKMEKCSSV
0030  NANANNAVKNNNNNEEPSDKHIEKYLKEIQNSLSTEWSPCSVTCGNGIQVRIKPGSAGKPKNELYENDIEKKICKMEKCSSV
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Th2R

Th3R