

**Supplemental Table 1.** List of mutations in genes associated drug-response outcomes in Alzheimer's disease (1)

Genetic mutations	Subjects	Location	Therapy	Results
<b>CHRNA7</b>				
<i>rs8024987 (C→G)</i>	204	Taiwan	ChEI	Improvement MMSE score in G allele carrier
<i>rs8024987 (C→G)</i>	177	Brazil	ChEI	No improvement MMSE score in G allele carrier
<i>rs6494223</i>	177	Brazil	ChEI	No association between polymorphism and therapy response
<i>rs6494223</i>	177	Brazil	ChEI	No association between polymorphism and therapy response
<b>CHAT</b>				
<i>rs2177370</i>	158	Korea	ChEI	Association between polymorphism and therapy response
<i>rs3793790</i>	158	Korea	ChEI	Association between polymorphism and therapy response
<i>Haplotype rs11101187– rs2177370</i>	158	Korea	ChEI	Allele CC and CT result in different Ach synthesis rates, which is associated with therapy response
<i>rs733722</i>	121	Northern Ireland	ChEI	Each copy of C allele result decline MMSE points/year relative to the T allele, which reflected the response to therapy
<i>rs 3810950 (2384G&gt;A) in the +4 position</i>	135	Korea	ChEI	No improvement in first 12 weeks of treatment and significant difference in therapy response in A allele carrier at week 26 of therapy
<i>rs2177369 (A→G)</i>	171	Italy	ChEI (rivastigmine and DNP)	No association between polymorphism and therapy response
<b>CYP2D6</b>				
<i>rs1080985</i>	208	China	ChEI (DNP)	No significant difference in polymorphism between responder and non-responder of DNP treatment
<i>rs1080985</i>	88	Poland	ChEI (DNP)	No significant difference in polymorphism between responder and non-responder of DNP treatment
<i>rs1080985 Allele G</i>	127	Italy	ChEI (DNP)	Significantly higher frequencies of G allele in non-responder patients

<i>rs1080985</i>	77	China	ChEI (DNP)	Combination of S-DNP plasma concentrations and genotype was useful for monitoring DNP treatment outcomes
<i>CYP2D6*4</i>	38	India	ChEI (DNP) and DNP + memantine	Association between polymorphism and DNP monotherapy response
<i>CYP2D6*10</i>	110	China	ChEI (DNP)	Significantly higher frequency of <i>CYP2D6*1/*10</i> and <i>CYP2D6*10/*10</i> genotypes of responders
<i>rs1080985</i>	415	Italy	ChEI (DNP)	Association between polymorphism and DNP therapy response
<i>CYP2D6</i>	57	Italy	ChEI (DNP)	Significant association of gene variation and clinical response with DNP
<i>CYP2D6*3</i>	18	India	ChEI (rivastigmine and memantine)	Significant correlation with improvement of MMSE score
<i>CYP2D6</i>	42	Italy	ChEI (DNP)	Improvement of MMSE score and value showed significant correlation
<b>PON-1</b>				
<i>PON gene 7q21.3</i>	73	Italy	ChEI	R allozyme (Arg) has better therapy response than Q allozyme (Gly)
<b>ABCA1</b>				
<i>rs2230806 and rs2230808</i>	88	China	ChEI	MMSE score significantly increases in <i>rs2230806</i> GG allele carrier
<b>ApoE</b>				
<i>E3 and E4 carrier/non-carrier</i>	85	China	ChEI	Response to DNP influenced by ApoE E3 allele
<i>Combined E3 carrier/non-carrier and rs2230806</i>	88	China	ChEI	E3 carrier and <i>rs2230806</i> GG allele carrier showed best therapeutic response
<i>E3 and E4 carrier/non-carrier non-carrier</i>	208	China	ChEI	The ApoE polymorphisms did not influence 6 months of DNP treatment
<i>E3 and E4 carrier/non-carrier</i>	97	Brazil	ChEI	No association between ApoE polymorphisms and DNP response
<i>E4 carrier/non-carrier</i>	177	Brazil	ChEI	The presence of the E4 allele showed worst response to ChEI response

<i>E4 carrier/non-carrier</i>	110	China	ChEI	No association between ApoE E4 status and efficacy of DNP
<i>E4 carrier/non-carrier</i>	167	Spain	ChEI	No association between ApoE4 and rivastigmine efficacy
<i>E4</i>	58	–	MST	Subjects with negative ApoE4 alleles (ApoE4–) responded better to MST therapy
<b>ESRI</b>				
<i>P and X allele carrier/non-carrier</i>	184	Italy	ChEI	At least one copy of P or X allele carrier showed better response significantly than non-carrier
<b>SNAP-25</b>				
<i>rs363050</i>	58	–	MST	G allele carrier has better MST therapy response
<i>rs363039</i>	58	–	MST	A allele carrier has better MST therapy response

**REFERENCES:**

1. Sumirtanurdin R, Thalib AY, Cantona K, Abdulah R. Effect of genetic polymorphisms on Alzheimer's disease treatment outcomes: an update. *Clin Interv Aging*. 2019;14:631.