

Genes, encoding heat-resistant obscure (Hero) proteins: new players in ischemic stroke pathogenesis

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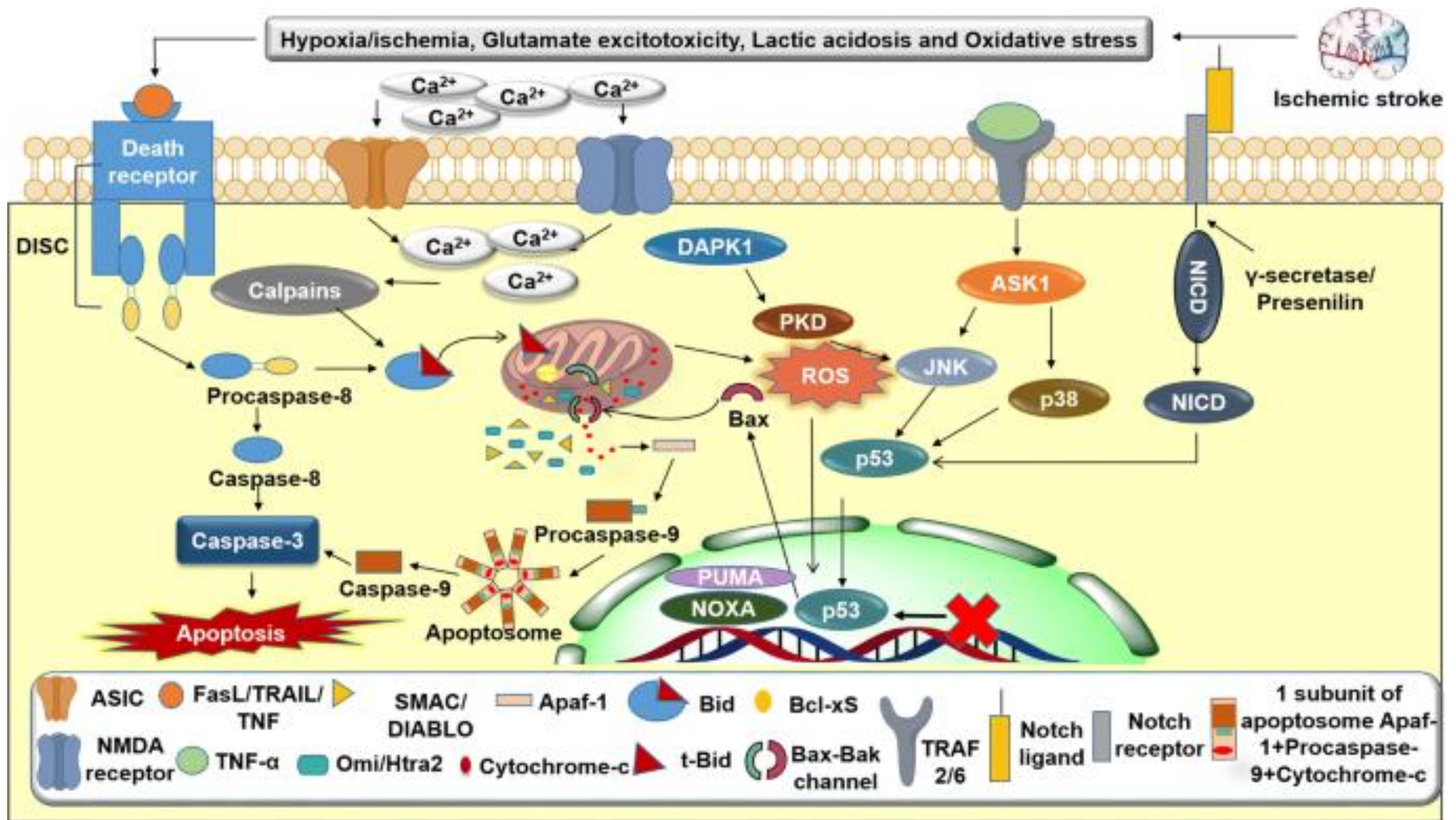
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Cell Death Pathways in Ischemic Stroke



Datta A. et al. Cell Death Pathways in Ischemic Stroke and Targeted Pharmacotherapy. *Transl Stroke Res.* 2020 Dec;11(6):1185-1202.

Aim

To investigate an associations between a single nucleotide polymorphisms in genes encoding Hero proteins with risk of Ischemic stroke.

Material and methods

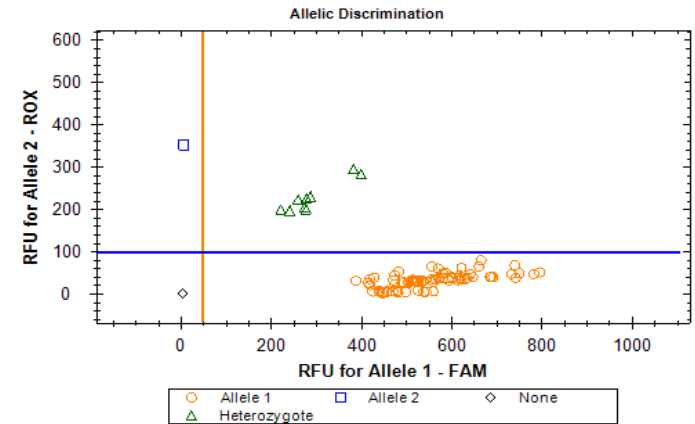
Genotyping

Patients (N=844)

N=1799

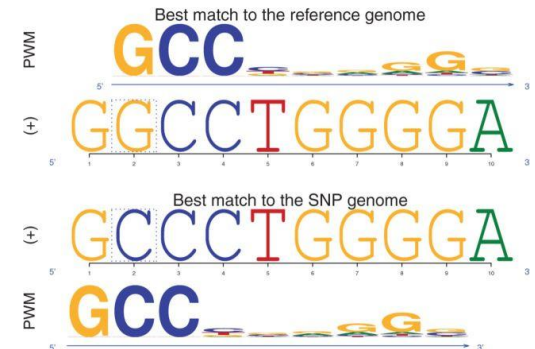
Controls (N=950)

Genotyping: 12 genetic variants in genes encoding Hero proteins (rs11666524, rs2277947, rs346157, rs346158, rs10104 *C19ORF53*, rs2900262 *C9ORF16*, rs4644832 *SERF2*, rs4655707, rs12566098, rs6702742, rs1058074 *SERBP1*, rs6677 *C11ORF58*). TaqMan-based PCR (CFX96 amplifier, Bio-Rad).



Statistical analysis: SNPStats (<https://www.snpstats.net/start.htm>) with adjustment for sex, age.

Bioinformatics analysis



Statistically significant associations of SNPs in the genes encoding Hero chaperones with the risk of ischemic stroke

SNP	Minor allele	corOR (95% CI) ¹	P ²
rs11666524 (G/A) <i>C19ORF53</i>	A	1.61 (1.10-2.36)	0.015^R
rs2277947 (G/A) <i>C19ORF53</i>	A	1.86 (1.24-2.78)	0.0023^R
rs346157 (A/G) <i>C19ORF53</i>	G	1.28 (1.02-1.62)	0.036^R
rs346158 (T/C) <i>C19ORF53</i>	C	1.65 (1.13-2.40)	0.0091^R
rs10104 (A/G) <i>C19ORF53</i>	G	1.75 (1.15-2.67)	0.01^R
rs4644832 (A/G) <i>SERF2</i>	G	1.33 (1.08-1.65)	0.0065^C
rs12566098 (C/G) <i>SERBP1</i>	G	1.58 (1.31-1.91)	<0.0001^C

1 - odds ratio and 95% confidence interval;

2 - P value with adjustment for gender, age

R – recessive regression model; C – codominant regression model

Conclusion

The present study was the first to show that genetic variants in genes, encoding Hero proteins, are associated with ischemic stroke risk.

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