Invention:
✓ A Genetic BIOMARKER offers personalized medicine to inform treatment of high blood cholesterol and cardiovascular risk
✓ Current technology: Proof of Concept using Molecular Genetics on human samples

FADS2 INDEL Genetic Test: The outcome of the test determines the dose of statin or omega-3.

Work Flow: (Test Cost <$10)
DNA Sample (Cheek cells, or Blood) → Laboratory Testing → Genotypes: Prescription

Genotypes:
- I/I: Insertion/Insertion
- I/D: Insertion/Deletion
- D/D: Deletion/Deletion

N=311 US Population

- D/D: 43% (metabolic capacity to synthesize omega-3 fatty acids EPA and DHA. Positive response to statins.)
- I/D: 39% (Intermediate metabolic capacity to synthesize omega-3 fatty acids. Positive response to statins.)
- I/I: 18% (Normal metabolic capacity to synthesize omega-3 fatty acids.)

Technical Merits:
- For patients in whom statins are not indicated, omega-3 marine oil preparations EPA-DHA can be prescribed.
- Adds value to statin, and marine oil therapeutics.

An inexpensive genetic biomarker diagnostic test determines individual response to omega-3 fatty acids and statins and guides prescription.