

# Sodium [18f]fluoride positron emission tomography for non-invasive identification of micro-calcifications as marker of atherosclerotic plaque vulnerability

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Propositions accompanying the dissertation

**Sodium [<sup>18</sup>F]Fluoride positron emission tomography for non-invasive identification of micro-calcifications as marker of atherosclerotic plaque vulnerability**

**Alexandru Florea**

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- 1) Sodium [<sup>18</sup>F]Fluoride is a PET tracer in which the <sup>18</sup>F is able to replace the hydroxyl groups of hydroxyapatite, the very building block of (vascular) calcification. **(this thesis)**
  - 2) [<sup>68</sup>Ga]Ga-Pentixafor, with its high affinity for CXCR-4, identifies regional inflammatory response in mice and patients post-myocardial infarction. **(this thesis)**
  - 3) Early detection of atherogenesis using diverse radioactive tracers represents an exciting development within the field of nuclear cardiology. **(this thesis)**
  - 4) Treatment with vitamin K-supplementation inhibits vascular micro-calcification within the atherosclerotic plaque. **(this thesis)**
  - 5) *"Despite recent advances in interventional medicine, cardiovascular disease is still the leading cause of death worldwide, exceeding cancer mortality."* **Florea et al., Eur J Prev Cardiol 2021**
  - 6) *"Atherosclerosis is an inflammatory disease."* **Ross, N Engl J Med 1999**
  - 7) *"Vascular calcification is a hallmark of atherosclerosis."* **Nakahara et al., JACC Cardiovasc Imaging 2017**
  - 8) *"A new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it."* **Max Planck**
  - 9) *"Facts are not science. As the dictionary is not literature."* **Martin H. Fischer**
  - 10) *"Man is condemned to be free; because once thrown into the world, he is responsible for everything he does."* **Jean-Paul Sartre**
  - 11) *"We have enslaved the rest of the animal creation and have treated our distant cousins in fur and feathers so badly that beyond doubt, if they were able to formulate a religion, they would depict the Devil in human form."* **William Ralph Inge**
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