



Review article

## Axumin: A promising diagnostic imaging agent for prostate cancer recurrence

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### Abstract

Prostate cancer is the second most common cancer among men in the United States and fifth most common cancer worldwide. Most primary prostate cancers can be successfully treated, but recurrence occurs in up to one-third of patients. The location and extent of the disease cannot always be detected by conventional imaging, however, and of those who experience recurrence, approximately one-third develop metastatic prostate cancer. Axumin (fluciclovine (F-18)) is the first, novel imaging agent approved for use in patients with suspected recurrent prostate cancer based on elevated blood prostate specific antigen (PSA) levels following initial treatment for the disease. It employs the technique of positron emission tomography (PET) imaging to detect the prostate cancer recurrence in suspected men. High PSA in the blood is a sign that cancer is coming back or spreading. The agent was developed to enable visualization of the increased amino acid transport that occurs in many cancers, including prostate cancer. Post injection of Axumin, the drug is taken up by the prostate cancer cells by transporters (eg, LAT-1, ASCT2), which are up-regulated in prostate cancer cells compared with surrounding normal tissues. Then the drug emits a small amount of energy in the form of gamma rays. This energy is detected by the PET/CT scanner, and a computer will produce a detailed image. Better understanding of a recurrence can facilitate management decisions that include surgery, radiotherapy, or chemotherapy. The molecule is being investigated for other potential cancer indications, such as glioma.