



**Paper Accepted at MICCAI on AI Joint Classification of Images using <sup>99m</sup>Tc-Maraciclalide**

**London, UK, 23 July 2024.** Serac Healthcare Limited (“Serac Healthcare” or “the Company”), a clinical radiopharmaceutical company developing innovative molecular imaging technologies, announces that a paper has been accepted for presentation at the annual conference of the Medical Image Computing and Computer Assisted Intervention Society (MICCAI) taking place from 6-10 October in Marrakesh, Morocco.

The paper is titled: “Improved Classification Learning from Highly Imbalanced Multi-Label Datasets of Inflamed Joints in <sup>99m</sup>Tc-Maraciclalide Imaging of Arthritic Patients by Natural Image and Diffusion Model Augmentation.” The presenting author is Robert Cobb, King’s College London.

The paper presents a new methodology for training a neural network to classify inflammation in the individual joints of the hands and wrists of patients with rheumatoid arthritis that have been imaged with a novel radiolabelled tracer <sup>99m</sup>Tc-maraciclalide. The methodology combines diffusion models to augment the available training data for this classification task from a small imaging dataset.

This is part of ongoing research being conducted by a team led by Professor Andrew Reader and Professor Gary Cook at the School of Biomedical Engineering and Imaging Sciences, King’s College London. The objective of the research is to investigate and design AI tools to help clinicians read and interpret scans using <sup>99m</sup>Tc-maraciclalide. <sup>99m</sup>Tc-maraciclalide is in development to diagnose and detect inflammation in patients with inflammatory arthritis and endometriosis. The development of AI tools could enhance the potential of <sup>99m</sup>Tc-maraciclalide as a new imaging marker.

**-ENDS-**

**<sup>99m</sup>Tc-maraciclalide is for investigational use only and is not approved by the FDA or UK and European regulatory authorities.**

**For more information, please contact:**

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**Notes to Editors**

**About Serac Healthcare Ltd**

Serac Healthcare is a clinical radiopharmaceutical company with deep expertise in discovering, developing and commercialising innovative molecular imaging technologies. Using these targeted technologies to underpin personalised medicine in the fields of endometriosis and inflammatory arthritis, Serac Healthcare is focused on bringing to market effective tools to accelerate diagnosis, and to deliver earlier and more effective treatment decisions. Serac Healthcare Ltd is a wholly owned subsidiary of Serac Life Sciences Limited.

### **About inflammatory arthritis**

Inflammatory arthritis encompasses a number of chronic, progressive, painful, incurable conditions in which the body's own immune system attacks the joints. If untreated they can result in irreversible joint damage and permanent disability. Multiple therapies are available that can slow or even halt disease progression, but current limitations in determining when joints are inflamed means that patients are often over or under treated.

### **About <sup>99m</sup>Tc-maraciclatiside and inflammatory arthritis**

<sup>99m</sup>Tc-maraciclatiside is a radio-labelled tracer which binds with high affinity to  $\alpha\beta3$  integrin, a cell-adhesion molecule which is up-regulated on activated vascular endothelial cells, activated macrophages and osteoclasts. <sup>99m</sup>Tc-maraciclatiside planar imaging has the capacity to image the whole body, highlighting total synovial inflammatory load in a 20 minute scan, producing images which are easy to interpret to the untrained observer. <sup>99m</sup>Tc-maraciclatiside uptake in the joints has been shown to be highly correlated with power Doppler ultrasound (PDUS) in an initial proof of concept study and a subsequent 50 patient rheumatoid arthritis study. Further clinical studies in inflammatory arthritis are expected to commence later this year.

**About the Medical Image Computing and Computer Assisted Intervention Society (MICCAI)**  
<https://conferences.miccai.org/2024/en/>