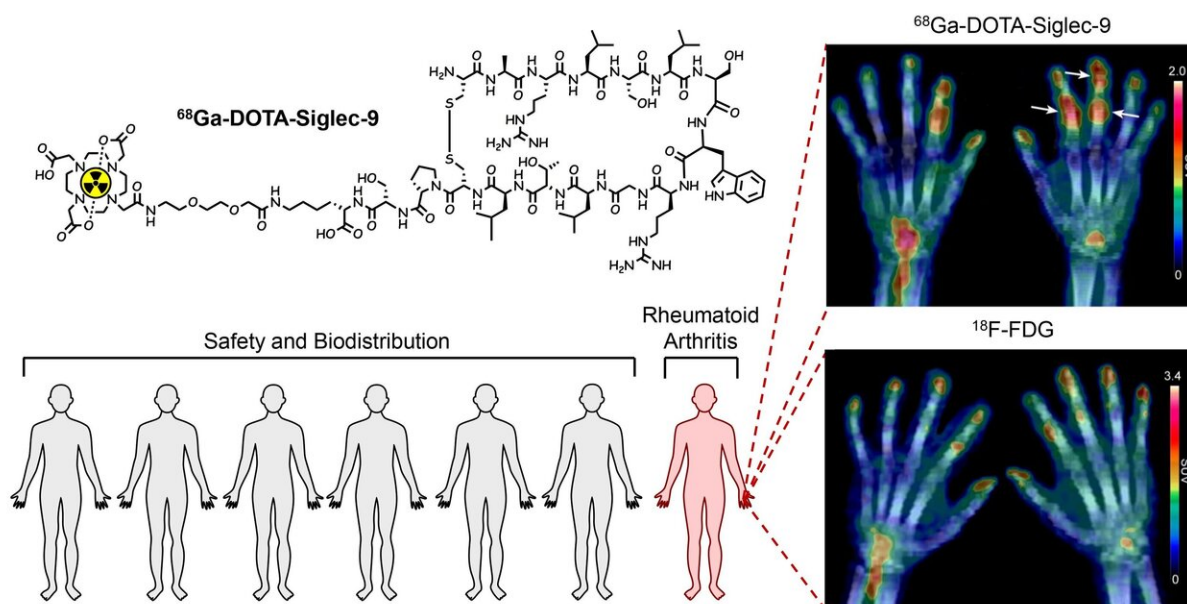


Promising results from first-in-humans study of a novel PET radiopharmaceutical

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The inflamed joints of a rheumatoid arthritis patient are clearly visible in the PET images with the novel ^{68}Ga -DOTA-Siglec-9 radiopharmaceutical. Credit: University of Turku

The preliminary trial results of a novel radiopharmaceutical for PET imaging of inflammation developed at the University of Turku, Finland, have been published. The compound, which targets the vascular adhesion protein 1 (VAP-1) that regulates inflammatory cell traffic, is the first radiopharmaceutical that has been developed completely in Finland and

has advanced to clinical trials. In the study that started with healthy volunteers, the radiopharmaceutical was found to be well tolerated and safe.

The radiopharmaceutical is 68Ga-labeled Siglec-9 peptide.

"The dose of the radiopharmaceutical used in PET imaging is thousands of times lower when compared with the regular drugs. Studies with new radiopharmaceuticals are therefore safer than the usual drug research studies," explain researchers Riikka Viitanen and Olli Moisio from the Turku PET Center.

The study also included the imaging of a patient with early rheumatoid arthritis. The inflamed joints were clearly visible in the PET [images](#), and the radiopharmaceutical seems to effectively target inflamed tissue.

"Our radiopharmaceutical is a product of long-term preclinical research work, and it is rewarding to see results that match our expectations. The research results are promising, but all novel radiopharmaceuticals must fulfill strict medical and statistical criteria before they can be considered for general research use. Therefore, we will continue the study with voluntary rheumatoid arthritis patients," says the leader of the research group, Professor Anne Roivainen from the University of Turku.

"This study is unique and has long, innovative history in the University of Turku. Now, it has been proven that the new radiopharmaceutical works in humans," says Academician of Science, Professor Sirpa Jalkanen.

The purpose of the new radiopharmaceutical is to advance both the diagnostics of inflammatory diseases and [drug development](#) with molecular imaging. The [research field](#) is rapidly developing, and the Turku PET Center, research institute of the University of Turku, Åbo

Akademi University, and Turku University Hospital is one of the field's leading research centers in Europe.

The study was published in the *Journal of Nuclear Medicine* in April 2021.

More information: Riikka Viitanen et al. First-in-Humans Study of 68Ga-DOTA-Siglec-9, a PET Ligand Targeting Vascular Adhesion Protein 1, *Journal of Nuclear Medicine* (2020). [DOI: 10.2967/jnumed.120.250696](https://doi.org/10.2967/jnumed.120.250696)

Provided by University of Turku

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