PMOD

Comprehensive multimodality biomedical image analysis and quantification software, specializing in PET kinetic modeling for research.

https://example.com/1762583716453

Overview

PMOD (PMOD Technologies, now part of Bruker) is a comprehensive and modular software suite for image processing, analysis, and quantification in biomedical research. It is widely recognized as the reference tool for Positron Emission Tomography (PET) kinetic modeling, offering solutions for full quantitative analysis beyond basic metrics like Standardized Uptake Value (SUV) and %ID/cc.

Key Features and Capabilities

PMOD provides a flexible workbench for analyzing multimodality imaging data from small animals, humans, and other species, including PET, SPECT, MRI, and CT. The software is modular, allowing users to select tools based on their needs. Core modules include:

PBAS (Base License): Core functionality for general image processing, VOI analysis, and basic quantification.
PKIN/PXMOD: Tools for General and Pixel-wise Kinetic Modeling, supporting over 50 model configurations for absolute PET quantification.
PFUS: Image Registration and Fusion tool, including automatic procedures for rigid and deformable matching.
PNEURO/PNROD: Streamlined, workflow-based tools for human and rodent brain PET/MR analysis, including brain atlases.
PCARDP/PCARDM: Quantification tools for cardiac PET and MR analysis.
PAI: Artificial Intelligence Framework for tasks like AI-based segmentation and classification.

Data Management and Reproducibility

A core component of every license is the **Scientific Data Management System (SDMS)**, which allows for centralized and scalable data management. The SDMS enables users to import, organize, archive data, processing results, protocols, and meta-data, which is crucial for reproducible science and supports batch processing.

Target Users and Use Cases

PMOD is designed for researchers and scientists in molecular imaging. Its primary use cases span:

Oncology Research: PET/SPECT quantification, tumor SUV calculation, and PERCIST analysis.
Neurology Research: Brain atlases, regional statistics, and kinetic analysis of PET/MR brain images.
Cardiology Research: Myocardium perfusion, metabolism, and ventricular function quantification.
Radiotracer Development: Pharmacokinetic modeling and radiation dosimetry (e.g., Residence Times model).
Important Note: PMOD is for Research Use Only (RUO) and must not be used for the diagnosis or treatment of patients. The software is a proven translational tool, cited in nearly 4000 publications since 2013.

Key Features

- PET Kinetic Modeling and Parametric Mapping
- Multimodality Image Registration and Fusion (PFUS)
- Scientific Data Management System (SDMS)
- AI-based Segmentation (PAI)
- Automated Brain Analysis (PNEURO/PNROD)
- Quantitative Analysis (SUV, %ID/cc, TACs)
- Cardiac Quantification Tools (PCARDP/PCARDM)
- Batch Processing

Pricing

Model: subscription

Subscription-based, modular licensing (e.g., Oncology, Cardiac, Neuro packages) with options for concurrent users (e.g., 3-user, 5-user) and on-site or remote licenses. Pricing is not publicly disclosed; contact sales for a quote. A free demo license is available.

Target Company Size: small, medium, enterprise

Compliance & Certifications

FDA 21 CFR Part 11