GEORGE MASON UNIVERSITY

OSTEOARTHRITIS MONITORING & TREATMENT TECHNOLOGY

GMU-23-047

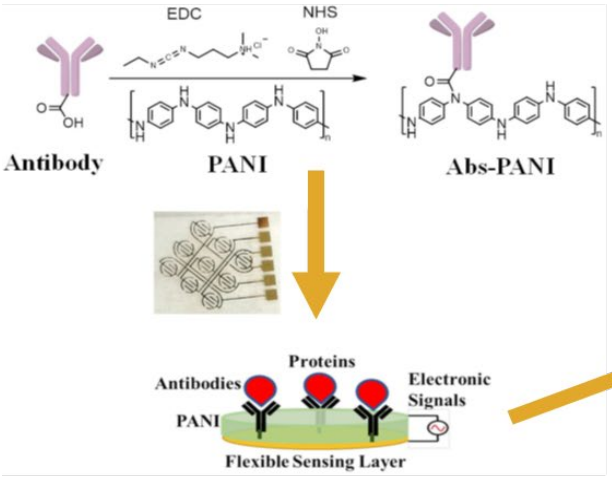
REVOLUTIONIZING EARLY OSTEOARTHRITIS DETECTION WITH SMART, PORTABLE BIOSENSING TECHNOLOGY

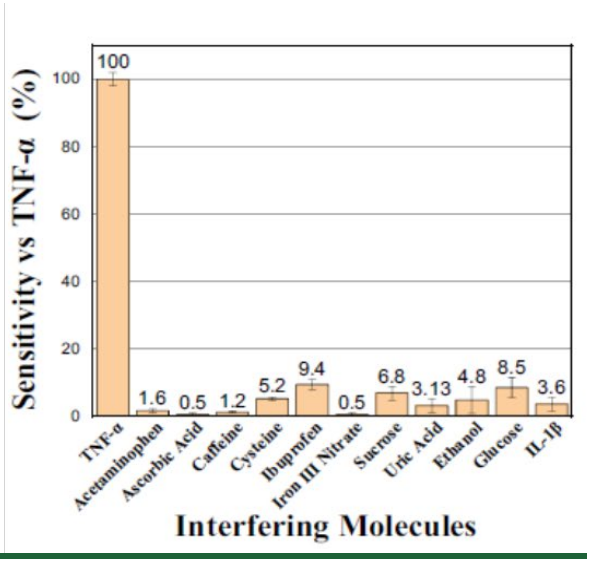
This cutting-edge biocomposite-based sensor technology offers a novel solution for early detection of osteoarthritis (OA). Utilizing an advanced electrochemical biosensor that detects inflammation markers with unmatched precision, this technology enables point-of-care (POC) diagnostics that are faster and more affordable than traditional methods. The core technology core technology combines conducting polymers and antibodies to deliver portable, flexible, and highly sensitive biosensing for inflammation monitoring.

Key Features

- **Early Osteoarthritis Detection:** Identifies inflammatory cytokines like TNF-α, enabling early intervention
- **Portable & Disposable Design:** Ideal for point-of-care testing (POCT) in clinical settings
- **High Sensitivity & Selectivity:** Accurate detection in complex biological samples like blood serum
- **Semiconductive Biocomposite Materials:** Combines polyaniline (PANI) with antibodies for enhanced performance
- **Electrochemical Impedance Spectroscopy (FIS):** Measures changes in electrical impedance for real-time inflammation tracking
- **Scalable for Long-Term Monitoring:** Suitable for continuous use in wearable devices for chronic condition management

Ideal for early osteoarthritis and long-term inflammation monitoring, this biosensor is also suited for broader medical diagnostics, offering real-time detection for various inflammatory conditions.





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