

## **SIDEROPHORE CONJUGATES AS NOVEL TOOLS FOR DIAGNOSIS OF UTI**

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Urinary Tract infections are caused by Gram-negative, Gram-positive bacterial strains and certain fungi species. Microorganism such as *Klebsiella pneumoniae*, *Staphylococcus saprophyticus*, *Pseudomonas aeruginosa* and *Staphylococcus aureus* are usually involved in UTIs, however, uropathogenic *Escherichia Coli* (UPEC) has found to be the most frequent causative agent involved in these infections. Every year close to a 150 million people around the world is affected by these pathogens which mean that we are not only facing a public health crisis but also an economic worldwide problem. Nowadays, current diagnostics tests for UTIs involve simple techniques such as culture and colony counting methods, the standard method detection, that are excessively time-consuming (4-16 days) to more elaborated techniques such as Polymerase Chain Reaction (PCR) methods, which are also time-consuming techniques (5-24 hours) with the additional disadvantage of expensive material and instrumentation requirements and the propensity to contamination by external genetic material that might lead to an erroneous result.

It's clear that new, fast and accurate diagnosis test for UTIs are needed in order to provide results in sufficient time to inform treatment decisions, particularly in cases where the patients have to be treated with antibiotics cocktails due to the lack of knowledge of the type of microorganism causing the infection.

The development of such novel UTIs diagnostic methods will help to the reduction of the patient care costs, improvement of the treatment decisions but most importantly, the reduction of the rate of emergence of antibiotic-resistant organisms. Here we describe the synthesis of siderophore analogs, with an attached fluorescent dye, inspired from natural products, and their preliminary biological testing on *E.coli* ATCC 25922 as useful tools for the detection of UTIs causative agents.