



# The Humoral Pattern Recognition Molecule PTX3 Is a Key Component of Innate Immunity against Urinary Tract Infection

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Résumé en anglais	<p>Immunity in the urinary tract has distinct and poorly understood pathophysiological characteristics and urinary tract infections (UTIs) are important causes of morbidity and mortality. We investigated the role of the soluble pattern recognition molecule pentraxin 3 (PTX3), a key component of the humoral arm of innate immunity, in UTIs. PTX3-deficient mice showed defective control of UTIs and exacerbated inflammation. Expression of PTX3 was induced in uroepithelial cells by uropathogenic <i>Escherichia coli</i> (UPEC) in a Toll-like receptor 4 (TLR4)- and MyD88-dependent manner. PTX3 enhanced UPEC phagocytosis and phagosome maturation by neutrophils. PTX3 was detected in urine of UTI patients and amounts correlated with disease severity. In cohorts of UTI-prone patients, PTX3 gene polymorphisms correlated with susceptibility to acute pyelonephritis and cystitis. These results suggest that PTX3 is an essential component of innate resistance against UTIs. Thus, the cellular and humoral arms of innate immunity exert complementary functions in mediating resistance against UTIs.</p>
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