

## Modal Epistemic Łukasiewicz logic with constant and its application in immune system

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The theory of three-valued multi modal epistemic Łukasiewicz logic with constant, which is an extension of the three-valued Łukasiewicz logic, the language of which is extended by nullary and unary connectives, is developed. The unary connectives are interpreted as modal operators (knowledge operators). We propose to use this logic in studying immune system.

A relational system is developed as a semantic of this logic. The relational systems represent the immune system which in its turn is a part of relational biology.