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(54) Title: A RECOMBINANT HUMAN ALPHA-1 ANTITRYPSIN GLYCOPROTEIN

(57) Abstract: The invention relates to a recombinant human alpha1-antitrysin (rhAAT) glycoprotein or fragment thereof. In embod-
iments, the rhAAT or fragment has one or more N-linked glycosylations, comprising at least one HexNAc1 glycosylation. In other
embodiments, the rhAAT glycoprotein or fragment thereof comprises at least one Hex9HexNAc2, Hex10HexNAc2, Hex11HexNAc2,
Hex12HexNAc2, Hex13HexNAc2, Hex14HexNAc2, Hex15HexNAc2 and/or Hex16HexNAc2 glycosylation. The invention further
relates to a protein preparation comprising recombinant human alpha1-antitrysin (rhAAT) glycoproteins or fragments thereof with het-
erologous N-linked glycosylations. In embodiments, the rhAAT protein or fragment thereof is expressed in *Pichia pastoris*. The inven-
tion further relates to methods for producing the rhAAT of the invention. The invention further relates to a pharmaceutical composition
comprising the rhAAT glycoprotein or fragment thereof or protein preparation. The invention also relates to the rhAAT glycoprotein
or fragment thereof, protein preparation or pharmaceutical composition for use in the treatment of various medical conditions, for ex-
ample for the treatment of viral infections, viral respiratory infections, bacterial infections and/or bacterial respiratory infections, other
respiratory or vascular diseases, and/or for the treatment of inflammatory lung disease.

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