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## Patent Search

Invention Title	TOXINS-TARGETED SPECIFIC NOVEL ANTI SNAKE VENOM
Publication Number	16/2020
Publication Date	17/04/2020
Publication Type	INA
Application Number	201831038837
Application Filing Date	12/10/2018
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	PHARMACEUTICALS
Classification (IPC)	A61K38/44

### Inventor

Name	Address	Country	Nationality
ASHIS KUMAR MUKHERJEE	FLAT B-29, TEZPUR UNIVERSITY, NAPAAM, TEZPUR, ASSAM, INDIA, 784028	India	India
APARUP PATRA	C/O ABANI PATRA,KAJURIA,PENGHARA,DEAULI, SARENGA, BANKURA,WESTBENGAL, INDIA, 722150	India	India
DUTTA, SUMITA	C/O UZZAL DUTTA, HOUSE NO. 2, BYELANE (LEFT) NO. 2, AMBIKAGIRI NAGAR, R.G. BARUAH ROAD, GUWAHATI, ASSAM, INDIA, 781024	India	India
KALITA, BHARGAB	C/O SARAT KALITA, SUALKUCHI KUMARPARA, GUWAHATI, ASSAM, INDIA,781103	India	India
CHANDA, ABHISHEK	CHANDA KUTHIR, WARD NO. 8, NETAJI ROAD, DHEKIAJULI, SONITPUR, ASSAM, INDIA, 784110	India	India

### Applicant

Name	Address	Country	Nationality
TEZPUR UNIVERSITY	(CENTRAL UNIVERSITY), NAPAAM, TEZPUR ASSAM, INDIA, 784028	India	India

### Abstract:

ABSTRACT TITLE OF INVENTION: TOXINS-TARGETED SPECIFIC NOVEL ANTI SNAKE VENOM The present invention describes a process for the development of toxin-specific formulated new antivenom for the improvement of snakebite treatment. Epitope-string snake venom toxin-specific peptide immunogens have been designed by - (i) determining the active site and/or pharmacological site(s), and (ii) epitope mapping /antigenic algorithm technique of the weak immunogenic major toxins from venoms of "Big Four" venomous snakes (Naja naja, Bungarus caeruleus, Daboia russelii, and Echis carinatus) and Naja kaouthia venom from different regions of India. These toxin-specific custom peptides were designed from the weak immunogenic major toxins of "Big Four" and Naja kaouthia venoms and they were further modified in a way that their antigenicity and/or water solubility are increased for augmenting the antibody production against these modified custom peptides in rabbits. The custom peptide antibodies (pure IgG or pepsin digested F(ab')<sub>2</sub> fragment) were mixed in different ratio, which was determined by relative abundance of weak immunogenic toxins in each species of snakes, to formulate a pool of custom peptide antibodies (CPA) for each species of snake venom. Supplementation of pooled CPA (Y) to conventional commercial polyvalent antivenom (PAV) (X) at different ratio (1:1 to 1:5; X: Y, protein: protein) resulted in formulation of an improved antivenom capable of neutralizing weak-immunogenic/region-specific major toxins of snake venoms more competently than the conventional commercial anti-snake venom. This process can also be adopted to mitigate the scarcity of snake venom for a reasonable amount of antivenom production. This procedure for the development of toxin-specific antivenom is not limited only to the listed custom peptides or the venom proteins/toxins of the "Big Four" and Naja kaouthia snake venoms, but can also be extended to other snake venoms of the world and venom protein families by any person skilled in the art.

